

BOSTON UNIVERSITY
GRADUATE SCHOOL OF ARTS AND SCIENCES

Dissertation

THE PROTESTANT ETHIC OF DEVELOPMENT

by

JOSÉ CAMPANELLA

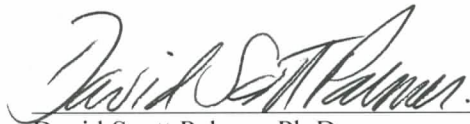
Abogado, Universidad Católica Andrés Bello, 1995
MPP, Kennedy School of Government, Harvard University, 2000

Submitted in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

2010

Approved by

First Reader



David Scott Palmer, Ph.D.

Professor of Political Science and International Relations

Second Reader



Elizabeth Prodromou, Ph.D.

Assistant Professor of International Relations

Third Reader



Katheryn Pfisterer Darr, Ph.D.

Professor of Hebrew Bible; Harrell F. Beck Scholar of Hebrew Scripture

ACKNOWLEDGMENTS

I would like to thank the Department of Political Science at Boston University for its receptiveness to the complex multidisciplinary approach proposed for this dissertation, and for the continuous support that I have received from Professors and administrative staff, which has been critical to the completion of this work. I am particularly grateful to Professors David Scott Palmer, Elizabeth Prodromou, and Katheryn Pfisterer Darr for their insightful observations and comments that have greatly contributed to this dissertation, and to Professors David Mayers and Betty Zisk for partaking in the Examining Committee. Special gratitude I express to Professor Palmer for his continuous support and help throughout the process of researching, writing, and editing this work, and for his valuable leadership in coordinating academic and administrative aspects related to this dissertation. I also recognize Professor Graham Wilson, Director of Graduate Studies at the Department of Political Science, and Professor J. Scott Whitaker, Associate Dean of the Graduate School of Arts and Sciences, for their tuition grants during the last year of revisions and editing of this work. Within the process of editing, I am also thankful to Professor Palmer for suggesting and covering the costs of a professional editor, and to Tara Zend for her discerning editorial revisions.

I express my thankfulness and gratitude to my grandparents, Giuseppe and Giuseppina Campanella, for planting in me from very early age the seeds of my belief in Christ's liberating truth; to my parents, Francesco and Conchita Campanella, and Jürgen and Christine Kuschert, for their unwavering love, sustainment, and encouragement in every step of this journey; and to my wife Gabriele, for sharing lovingly, prayerfully, and perseveringly in the joy and in the sacrifices accompanied by this work. I am indebted to my wider family and friends for their continuous prayers and support, which have been a unique source of encouragement and strength.

Above all, I praise the name of the Lord Jesus Christ for the truth that has made me free.

THE PROTESTANT ETHIC OF DEVELOPMENT

(UMI Order No. 3411715)

JOSÉ CAMPANELLA

Boston University, Graduate School of Arts and Sciences, 2010

Major Professor: David Scott Palmer, Professor of Political Science.

ABSTRACT

The study of factors determining economic and political development underscores decision-making processes and preferences associated with specific religious beliefs. Max Weber assessed this relationship in *The Protestant Ethic and the Spirit of Capitalism* as the effect of emotions and Protestant beliefs on increased levels of economic development. This association has been confirmed by global macro-level studies demonstrating that a Protestant “sense of freedom” is related to increased levels of GDP per capita and subjective well-being. Under the name of Palpatational Rationality (PR) this dissertation offers modifications to the template of Economic Rationalism (ER) that Weber used to explain this association. ER focuses on Calvin’s doctrine of Predestination and the psychological force Weber attributed to election-related anxiety. Conversely, PR relies on Calvin’s view of Christian Freedom and his emphasis on the inner perception of God’s love, referred to here as Sublime Palpation. Accordingly, PR underscores the liberating effect that the Sublime Palpation of Christian Freedom has on minimizing the negative impact of innate feelings like anxiety when confronting complex social and moral choices. PR advances a multidisciplinary approach that integrates into political science recent neurobehavioral evidence supporting the effects that emotions and beliefs have on decision making. It also relies on recent neurobehavioral evidence in favor of an innate human capability to perceive meta-somatic images that can enhance decision making. Neuroimaging studies have provided first confirmation of PR’s framework by showing evidence of neural markers among Protestant believers

that neutralize anxiety, and minimize the experience of errors affecting complex decision-making processes. The Supra-Somatic Marker Hypothesis developed by PR suggests a progressive correction of the subjective distortions and errors produced by innate feelings on the value and probability of outcomes. PR includes this supra-somatic effect in Bernoulli's function for the subjective distortion of the value of outcomes, and in Allais' model for the subjective distortion of the distribution and dispersion of an outcome's probability. This neural marking effect substantiates PR's alternative decision-making model, which aims to provide a more realistic framework for the design and implementation of public policy in the complex contexts faced by decision makers in the developing world.

TABLE OF CONTENTS

1	<i>Max Weber’s Economic Rationalism and the Decision-Making Model of Palpational Rationality</i>	<i>1</i>
1.1	Empirical Evidence in Support of the Protestant Ethic of Development	10
1.2	Economic Rationalism and the Decision-Making Model of Palpational Rationality	20
1.3	Palpational Rationality’s Specific Modifications to the Model of Economic Rationalism	28
1.4	Palpational Rationality as the Model of Decision Making of the Protestant Ethic of Development	41
2	<i>Theoretical Foundations of Economic Rationalism and Palpational Rationality</i>	<i>46</i>
2.1	Freedom, Reasoning, Decision Making and Mental Motions.....	47
2.2	Differences between the Theoretical Foundations of Economic Rationalism and Palpational Rationality	52
2.2.1	Assumption of Finiteness of the Universe and of the Chain of Causation	53
2.2.2	Assumption of Impressions as “Numerus Clausus”	56
2.3	Hume’s Cognitive System as the Template of Economic Rationalism	58
2.3.1	Comparison between Elements of Hume’s Template and Palpational Rationality.....	58
2.3.1.1	Role of Beliefs in Hume’s Template and in Palpational Rationality	61
2.3.1.2	Role of Emotions in Hume’s Template and in Palpational Rationality	64

2.3.2 Critique of Hume’s Notion of the “Illusion of Freedom”	71
2.3.3 Critique of the Notion of Society as a Means to Freedom.....	76
3 Nature, Roots, and Developmental Outcomes of Palpational Rationality.....	88
3.1 Roots of Palpational Rationality	90
3.1.1 Augustine’s View of the Approach Underlying Palpational Rationality	92
3.1.2 Luther’s View of the Approach at the Core of Palpational Rationality	96
3.1.3 Calvin’s View of the Approach Foundational to Palpational Rationality.....	105
3.2 Liberating Nature of Palpational Rationality	107
3.3 Approach at the Core of Palpational Rationality and the Scientific	
Revolution	112
3.3.1 Palpational Rationality in the Works of Galileo	115
3.3.2 Palpational Rationality in the Works of Isaac Newton	121
3.4 Recent Evidence Concerning Palpational Rationality’s Assumption of	
Finiteness.....	125
4 Palpational Rationality and Developmental Preference Formation in Calvin’s	
Protestant Ethic.....	131
4.1 Calvin’s Notion of Christian Freedom and Predestination	131
4.1.1 Calvin’s View of Christian Freedom	132
4.1.2 Calvin’s View of Predestination	135
4.2 Individual Manifestations of the Decision-Making Process Resulting from the	
Sublime Palpation of Christian Freedom.....	139
4.2.1 Calvin’s View of Self-Denial and of Bearing One’s Cross	141

4.2.2	Industrious and Stewardly Preferences	143
4.2.3	Formation of Preferences Associated with Optimal Decision Making.....	147
4.3	Collective Manifestations of the Decision-Making Process Resulting from the	
	Sublime Palpation of Christian Freedom.....	149
4.3.1	The Free Church as School of Palpational Freedom	153
4.3.1.1	Preferences for Mutual Accountability and Tolerance	154
4.3.1.2	Preferences for Controlled Government	156
4.3.1.3	Preferences for Checks and Balances of Powers	161
4.3.1.3.1	Limits on Doctrinaire Powers.....	161
4.3.1.3.2	Limits on Constitutional Powers	163
4.3.2	The Free Church as School of Palpational Justice	166
4.3.2.1	The Notion of Palpational Justice	167
4.3.2.2	Palpational Justice and the Essence of a Republic.....	170
4.3.2.3	Limits to Jurisdictional Powers.....	172
4.3.3	The Free Church as School of Palpational Altruism	175
5	<i>Alternative Decision-Making Model of Palpational Rationality.....</i>	181
5.1	Critiques of Decision-Making Models of Choice Theory.....	183
5.1.1	Model of Objective Value: Expected Value Maximization Theory	184
5.1.2	Models of Quasi-Subjective Value: Expected Utility Maximization	186
5.1.2.1	Bernoulli's Version of the Expected Utility Criterion for Risky	
	Choices	188
5.1.2.1.1	Unique Attributes of Bernoulli's Utility Function	189

5.1.2.1.2 Application of the Utility Function to Games of Chance and Insurance	191
5.1.2.2 Von Neumann and Morgenstern's Version of the Expected Utility Criterion for Risky Choices.....	192
5.1.2.2.1 Unique Formal Properties of the Utility Function.....	193
5.1.2.2.2 Application of the Utility Function to Game Theory	194
5.1.2.3 Limits of the Expected Utility Criterion	197
5.1.3 Models of Subjective Value: Maximization of Subjective Values and Probabilities	201
5.1.3.1 Allais' Model of Distribution and Dispersion of Psychological Values ..	202
5.1.3.2 Kahneman and Tversky's Prospect Theory	207
5.1.3.2.1 Properties of Prospect Theory's Value Function $v(x)$	210
5.1.3.2.2 Properties of Prospect Theory's Weighting Function $\pi(p)$	212
5.1.3.2.3 Limitations of Prospect Theory's Model.....	214
5.2 Alternative Decision-Making Model of Palpational Rationality	217
5.2.1 Corrective Effect on the Subjective Perception of an Outcome's Value	219
5.2.2 Corrective Effect on the Subjective Perception of an Outcome's Occurrence ..	224
6 Future Research Directions: the Neurobehavioral Dimension of Palpational Rationality	235
6.1 Inclusion of Neurobehavioral Evidence into Decision-Making Models	236
6.2 Structural and Functional Dimension of Neural Systems Involved in Emotions, Reasoning and Decision Making.....	241
6.2.1 The Neurobehavioral Process of Secondary and Primary Emotion Formation .	250

6.2.2 The Neurobehavioral Process of Feeling Formation	251
6.3 Evidence of the Effect of Feelings and Beliefs on Reasoning.....	256
6.3.1 Neurobehavioral Evidence from Historical Cases of Focal Brain Damage.....	256
6.3.2 Recent Neurobehavioral Evidence on the Relation between Feelings and Cognition	258
6.3.3 Evidence of the Effect of Belief on Reasoning and Decision Making	263
6.4 The Role of Feelings in Decision Making: the Somatic-Marking Hypothesis..	267
6.4.1 The Process of the Somatic-Marker.....	268
6.4.2 Tests of the Somatic-Marker Hypothesis.....	271
6.4.3 Limits of the Somatic-Marker Hypothesis.....	274
6.5 The Role of the Sublime Palpation in Decision Making: the Supra-Somatic Marker Hypothesis.....	276
7 <i>Sense of Freedom, Palpational Rationality, and the Protestant Ethic of Development</i>.....	290
7.1 Modifications to Weber’s Template of Economic Rationalism.....	291
7.2 Palpations, Christian Freedom, and the Protestant Ethic of Development	296
7.3 Roots of Palpational Rationality’s “Sense of Freedom”	301
7.4 Developmental Applications of the Protestant “Sense of Freedom”	308
7.5 The Alternative Decision-Making Model of Palpational Rationality	310
<i>REFERENCES</i>.....	316
<i>CURRICULUM VITAE</i>	346

LIST OF FIGURES

Figure 1. Hume's Cognitive System.....	59
Figure 2. Cognitive System of Palpational Rationality.....	61
Figure 3. Representation of Hume's System of Cardinal Emotions	65
Figure 4. Differences between Categories of Impressions among Cognitive Systems.....	67
Figure 5. Expected Value Function	185
Figure 6. Bernoulli's Expected Utility Function	190
Figure 7. Allais' Function of Objective Probability Distortion	204
Figure 8. Comparison between Objective and Subjective Probability Densities.....	205
Figure 9. Subjective Density's Dispersion of Prudent and Imprudent Individuals.....	205
Figure 10. Comparison between Expected Utility and Prospect Theory on the Subjective Value of Outcomes	211
Figure 11. Prospect Theory's Hypothetical Weighting Function	213
Figure 12. Limitations of Prospect Theory Representing Subjective Values	220
Figure 13. Palpational Rationality's Function of the Distortion of an Outcome's Objective Value	221
Figure 14. Palpational Corrective Effect on the Subjective Distortion of the Value of Outcomes	222
Figure 15. Limitations of Prospect Theory in the Representation of Subjective Probabilities	225
Figure 16. Palpational Rationality's Function of the Subjective Distortion in the Perception of an Outcome's Probability	227
Figure 17. Palpational Effect on the Subjective Distortion of the Probability of an Outcome	229

Figure 18. Differences between the Unrenewed and Renewed Distributions for Gains and Losses, Abstracting from the Respective Dispersion of the Functions	231
Figure 19. Differences between the Unrenewed and Renewed Dispersions for Gains and Losses, Abstracting from the Location of the Mean in the Respective Distributions	232
Figure 20. Outline of the Micro- and Macro-Structure of the Nervous System	242
Figure 21. Structure of the Central Neural System.....	243
Figure 22. Selected Brodmann's Cerebral Cortex Regions	245
Figure 23. Neuron Structure and Synapsis.....	247
Figure 24. Process of Secondary Emotion Formation	251
Figure 25. Process of Feeling Formation.....	253
Figure 26. Somatic-Marking Process with Intervention of Subjectivity and Acquired Preferences	269
Figure 27. Supra-Somatic Marking Process	284

1 Max Weber's Economic Rationalism and the Decision-Making Model of Palpational Rationality

One of the most important inquiries influencing the studies of political and economic development continues to center on the assessment of causes and mechanisms that underlie developmental outcomes and dynamics. Attempts to elucidate these factors and processes from an exclusively economic perspective emphasize differences in economies of scale, innovation, education, savings, and investments. Nonetheless, these elements are currently considered not as factors of growth, but as the elements of its definition. According to one of the most influential theories of developmental dynamics, increases in the levels of economic and political well-being seem to be closely associated with differences in institutions (North and Thomas 1973, 2). This is the sense in which Persson and Tabellini emphasize the effect institutions have on economic policy choices, which in turn result in higher levels of economic development (Persson and Tabellini 2000, 2003). This thesis posits that the isolated study of institutions as determinants of sustainable growth provides clues of only proximate causes. In the quest to understand essential aspects of developmental dynamics, it appears critical to study the individual-level factors contributing to the formation of institutional preferences and cultural frameworks associated with economic and political progress. As Aghion affirms, political institutions influence economic policy as endogenous factors, since they are chosen by members of the polity (Aghion, Alesina, and Trebbi 2002). Given this consideration, the study of political institutions as determinants of economic development involves the role cultural factors play on choices made by polity members. Among these cultural factors, religion seems to have a prominent importance.

Max Weber first stressed the relevance of religious beliefs as cultural determinants of preferences associated with higher levels of economic development.¹ This association forms the core of Weber's seminal work *The Protestant Ethic and the Spirit of Capitalism* (Weber, [1920] 2001).² Weber used the evidence provided by his analysis of the Baden statistics³ to empirically support the association between the assimilation of Protestant beliefs and the formation of distinctive preferences spurring economic development. Within the context of this empirical evidence, he devised a theoretical template to explain how Protestant beliefs conjoined with related emotions affect reasoning and decision-making processes determining economic preferences.⁴ Through the use of the first multidisciplinary approach to integrate Protestant beliefs with emotions, Weber explained changes in decision making, behavior, and preferences expressed in increased levels of labor productivity and capital accumulation.

This dissertation follows the same direction of multidisciplinary research that Weber initiated by integrating the political, social and behavioral sciences. The main contribution of the present work is to provide a decision-making model based on the same theoretical template characteristic of Weber's multi-disciplinary approach. This dissertation follows Weber's seminal template by also integrating Protestant beliefs and emotions with decision making and preference

¹ The relationship between religion and development was first explored by Max Weber from a sociological and historical-economic perspective. Weber's thesis constituted an alternative to the dominant position of utilitarianism and classical political economy in England, as well as to the growing impact of Marxism in Germany (Giddens 1971). Indeed, Weber adopted the idea of "verstehen," or understanding, to express the view that meaning is essential to the explanation of human action. In this sense, Weber emphasized the centrality of history in the study of human conduct not from a deterministic or materialistic point of view, but from the perspective of the significance he assigned to the role of cultural values in giving meaning to human life (Giddens 1972).

² *The Protestant Ethic and the Spirit of Capitalism* was first published in 1904-1905 as a two-part article in the *Archiv für Sozialwissenschaft und Sozialpolitik*, of which Weber was one of the editors. The English translation used in the present work is taken from the revised version published in Weber's *Gesammelte Aufsätze zur Religionssoziologie*, which was published in 1920-1921, just after his death. See Weber (2001, vii).

³ Weber provided this seminal empirical analysis of religious and economic indicators within the context of his 1895 study of the economic activities of German Catholics and Protestants in Baden, Germany.

⁴ The study of specific Protestant beliefs undertaken in the present dissertation shares an important affinity with Weber's theoretical template. As in the case of Weber, the present approach neither corresponds to the standpoint of a trained theologian nor to the historico-cultural frameworks characteristic of modern theological studies. Instead, both approaches use Protestant beliefs and emotions to explain their effect on political and economic development primarily from the standpoint of the social sciences.

formation as factors that spur economic development. Nonetheless, this work differs from Weber's model in the choice of determinant Protestant beliefs and emotions, as well as the paths through which these factors affect reasoning and decision making. Moreover, in order to provide an integrated multidisciplinary analysis of decision-making models, this study updates Weber's template according to recent micro-level perspectives of advanced neurobehavioral approaches unavailable at Weber's time.

Given this multidisciplinary approach, the decision-making model used by this dissertation aims to offer an alternative to rational choice decision-making models, which are currently used as a general basis for the design and implementation of public policy. The model of this study addresses the critiques that behavioral sciences have brought to rational choice theory, specifically with respect to its mathematical assumptions regarding the strict rationality of decision-makers (Kahneman, Slovic, and Tversky 1982; Kahneman and Thaler 1991; Kahneman and Tversky 1984; Kahneman, Wakker, and Sarin 1997). Hence, this work seeks to provide an alternative model for public policy design and implementation that shares basic premises with models like prospect theory, which critique the assumption of strict rationality (Kahneman and Tversky 1979).

Perhaps the most important contribution of this dissertation's decision-making model may be the integration of new findings of neurobehavioral sciences regarding the formidable effect that belief and emotions seem to have on behavior and decision making. Here, this study highlights the central importance that Weber attributed to the interaction between Protestant belief and emotions in decision making in order to build a more realistic model for the design and implementation of public policy. This work uses the same template of Protestant belief, emotions, and decision making that Weber envisioned to explain the developmental effects of the Protestant Ethic, but proffers a modification to the beliefs and emotions originally selected by Weber. Addi-

tionally, this modification stresses a deeper study of Calvin's thoughts that transcends the mere sociological perspective underpinning Weber's analysis of Protestant beliefs.

The study of the effects that Christian beliefs have on individual behavior and preferences has been a prominent area of research since the very beginnings of modern behavioral sciences. During the emergence of psychology as a distinct academic specialty more than a hundred years ago, William James (1902) and Edwin Starbuck (1906) first used empirical research methods to study the effects of religious conversion on personality change. Consolidation of this early orientation has influenced a growing number of current studies using advanced behavioral methods to assess the effects of Christian beliefs on behavioral changes, as exemplified by Leege and Kellstedt's authoritative work evaluating the effects of Biblical views on the "Born Again" phenomenon (1993). Similarly, a number of studies have explored the specific effect of conversion on self-defining personality functions associated with increased levels of subjective well-being, such as identity and life meaning, goals, feelings, attitudes and behaviors.⁵ Detailed works on the different meanings attached to being born again have elucidated the political consequences of a number of religious experiences and statuses, and have also contributed to the study of religious self-identification (Dixon, Levy, and Lowery 1988; Jelen, Smidt, and Wilcox 1993). In the same way, other works stress the importance of Christian beliefs in determining individual attitudes and traits underlying personality, family values, health and education. Following the seminal influence of Jonathan Edwards' *Treatise Concerning Religious Affections* (Edwards 1746), recent studies also emphasize the effect of Christian beliefs on emotions.⁶ Research has also uncovered

⁵ The recent influential studies of Granqvist and Kirkpatrick 2004; Hood 1995; Kirkpatrick 1997, 1998; Paloutzian, Richardson, and Rambo 1999; Zinnbauer and Pargament 1998 have explored the nature, causes and effects of religious conversion on these developmental behaviors.

⁶ Within this discipline, several works have stressed the general effects of belief and emotions (Ellison 1998; Ellison and Levin 1998; Hill 1999; Hill and Hood 1999; Hutch 1978; McCullough, Emmons, and Tsang 2002; McCullough and Snyder 2000; Schimmel 1992; Watts 1996). From the perspective of clinical studies, recent research has also stressed the behavioral effects resulting from the close associations between belief and emotions (Enright and Fitzgibbons 2000; Fincham and Beach 2002; Kachadourian, Fincham, and Davila 2004; Kearns and Fincham 2004; McCullough, Emmons, and Tsang 2002; VanOyen Witvliet 2001). Within this context, the newly emerging field of the

the effects of Christian beliefs on personality, and individualism,⁷ as well as their imprint on family-based traits influencing parenthood, sexual behavior, and marital life.⁸ Regarding health, there is ample evidence supporting the beneficial effect that specific Christian beliefs have on patterns of alcohol and drug use.⁹ A number of studies have also illustrated the positive effects that these beliefs have on educational attitudes.¹⁰ The beneficial influence religious beliefs seem to have on physical and mental health has been documented in rigorous empirical studies concerning coping, subjective well-being, mental health and psychological recovery.¹¹ Similar positive effects are suggested by studies examining aging, health, and reduction of mortality rates.¹²

The multidisciplinary modifications that this work proposes to Weber's template are inscribed in the context of Almond's call for conjoined "tables" in political science. The present dissertation proposes an integration of the separated extremes within the methodological continuum that, in Almond's opinion, has contributed to the current divided state of the discipline.¹³ The

Psychology of Religion has focused attention on the study of humility (Baumeister, Smart, and Boden 1996; Heather-ton and Vohs 2000; Heather-ton and Wyland 2003). Finally, the effects on reasoning and decision making that result from the interaction between emotion and belief are also at the core of the novel approach of Emotional Intelligence (Brackett, Mayer, and Warner 2004; Caruso, Mayer, and Salovey 2002; Mayer et al. 2005; Paek 2004).

⁷ In this respect, a range of studies have explored the effects of Christian beliefs and attitudes on personality (Emmons 1999; MacDonald 2000; Ozer and Reise 1994; Piedmont 1999; Saroglou 2002), and on individualism (Jelen 1993b).

⁸ The study of the effects of Christian beliefs and attitudes on parenthood has been the focus of recent studies that have gained currency (Bollinger and Palkovitz 2003; Dollahite 1998; Ellison and Others 1996; Ellison and Sherkat 1993; Pearce and Axinn 1998; Wilcox 1998). Similar attention has been directed toward the study of the effects of these beliefs and attitudes on patterns of sexual behavior (Brewster et al. 1998; Forste and Heaton 1988; Goldscheider and Mosher 1988; Kahn, Rindfuss, and Guilkey 1990; Petersen and Donnenwerth 1997; Thornton and Camburn 1989), and marital life (Call and Heaton 1997; Ellison, Bartkowski, and Anderson 1999; Filsinger and Wilson 1984; Glenn 1982; Hammond, Cole, and Beck 1993; Heaton and Pratt 1990; Larson and Goltz 1989; Mahoney et al. 1999; Maneker and Rankin 1991; Mosher, Williams, and Johnson 1992; Scanzoni and Arnett 1987).

⁹ The curative effect of religious beliefs on patterns of alcohol and drug abuse has been documented in recent studies (Gorsuch 1995; Kendler 1997; Koenig, Ford, and George 1993; Koenig et al. 1994; Wallace 1998).

¹⁰ In this respect, there is a vast list of influential works in support of these positive effects (Azzi and Ehrenberg 1975; Bankston III and Zhou 1996; Benson 1990; Clotfelter 1992; Ehrenberg 1977; Freeman 1986; Iannaccone 1998, 7; Lenski 1961; Long and Settle 1977; Muller and Ellison 2001; Roof and McKinney 1987; Stark 1972; Stolzenberg, Blair-Loy, and Waite 1995; Ulbrich and Wallace 1983, 1984).

¹¹ On coping, convincing evidence has been found in several recent studies (Kirkpatrick 1998; Mahoney and Pargament 2004; McIntosh 1993; Pargament et al. 1998; Wong-McDonald and Gorsuch 2000), as in the case of the effects of religious beliefs and experiences on mental health and psychological recovery (Ai et al. 1998; Gartner 1991; Gritzmacher 1988; Koenig 1994).

¹² Relevant research has been conducted on the study of the effects of religion on aging and mortality (Krause 1995; Levin 1989; Levin and Chatters 1998; Levin and Taylor 1997; McCullough 2000; Strawbridge 1997).

¹³ Almond regrets the inherent separation among four main currents, or "tables," of political science: the soft-left, the hard-left, the soft-right, and the hard-right. These divisions result from different placement by political science studies

multidisciplinary approach characteristic of this study integrates the philosophical foundations of Weber's cognitive system as found in David Hume and Adam Smith. It also provides an assessment of the modern refutation of these theoretical foundations, which gives support to the alternative theoretical framework of this work's decision-making model. This integrated approach aims to add realism to the evaluation, design and implementation of public policy models by including the essential role of emotions evidenced by recent neurobehavioral research. Calling on the same original bridge that Weber built between the notion of "homo economicus" and "homo psychologicus," this dissertation seeks to integrate Almond's "separate tables" positioned at the limits of political science's methodological continuum. With this in mind, the multidisciplinary approach presented by the current research endeavors to provide a more realistic and efficient model to assess, design and implement policies for political and economic development.

The distinctive approach of this dissertation also responds to Almond's critiques regarding the state of political science as a set of disembodied specialties lacking connection to politics and public policy (Almond 1988, 832). The approach of the present work emerges from the growing realization within the political science and economics literature of the need to integrate neurobehavioral approaches into the design and implementation of public policies. This form of integration is readily perceivable in the proliferation of multidisciplinary studies addressing the mi-

within the ideological continuum of liberal and conservative positions, and the methodological continuum of philosophical, behavioral and historical studies on one side, and quantitative, econometric, and mathematical modeling studies on the other. According to this artificial separation, says Almond, "political reality has turned into a disarticulated set of elite-dominated 'issue networks' and 'iron triangles,' incapable of pursuing consistent and effective public policies; and the science has turned into a set of disembodied specialties lacking in linkage to politics and public policy" (Almond 1988, 832). Especially regarding methodological separation, Almond echoes the view of authors like Herbert Simon, who quoting Madison in the *Federalist Papers*, advocate for an approach that takes into consideration the more realistic integration between "homo economicus" and "homo psychologicus." Hence, concludes Simon quoting Madison: "As there is a degree of depravity in mankind which requires a certain degree of circumspection and distrust, so there are other qualities in human nature which justify a certain portion of esteem and confidence"—a balanced and realistic view, we may concede, of bounded human rationality and its accompanying frailties of motive and reason" (Simon 1985, 303). As Almond states, the desirable contiguity of these tables is part of a tradition initiated by authors like Weber and earlier espoused by American political scientists like Merriam, who in his manifesto *The Present State of the Study of Politics* had already advocated the introduction of psychological and sociological insights into the study of political institutions and processes, as well as the employment of statistical methods in an effort to enhance the rigor of political analysis (Almond 1988, 832, 838).

cro-level mechanisms that amalgamate belief and emotions with optimal processes of reasoning and decision making. In keeping with these considerations, the method used in this dissertation relies on promising advances in psychology and neurobiology concerning the investigation of brain states related to decision-making processes. These advances are opening new vistas with which to understand the unexplored interconnection between beliefs, emotions, reasoning and decision making for the design of public policy. In this sense, Damasio, one of the most important neuroscientists advocating such integration, urges establishing a two-way bridge through which to explore the threads that interconnect neurobiology to culture (Damasio 2005, xiv). At the core of such integration between the social, political, behavioral and neurobiological sciences is the recognition that civilization and culture are in essence social products. Thus, the establishment of this complex causal relationship demands not only the traditional recourse to the disciplines of the social sciences but also their integration with the methodologies of the behavioral and neurobiological sciences (Damasio 2005, 124).

Using a similar perspective to this work's multidisciplinary approach, Quartz has recently observed that the long tradition of research in judgment and decision making (JDM) has evolved to incorporate emotional processes influenced by the reconsideration of emotions in neuroscience (Quartz 2009, 209). Quartz observes that JDM research in the social and political sciences has been historically dominated by a logical-inference approach based on means-end reasoning and cost-benefit decision-making processes. This derived from the influence of choice or preference theory in microeconomics (von Neumann and Morgenstern 1944) and decision theory in philosophy (Jeffrey 1983). Given this tendency, Quartz underscores the emergence of a multidisciplinary approach integrating humanities, social, and political sciences with neurobiology within the most

recent and innovative research on JDM models.¹⁴ This multidisciplinary approach is also advocated by Cohen¹⁵ at Princeton University's Center for the Study of Brain, Mind and Behavior, and by Lerner¹⁶ at the Decision Research Laboratory of Harvard's Kennedy School of Government. Thus, the recent neurobiological reconsideration of emotions advanced by neuroscientists like Damasio (2005; 1991; 1994) has contributed to the reincorporation of emotions within theories of decision making, as observed in the works of Koenigs (2007; 2007), Loewenstein (2006; 2001), Sanfey (2006), Shiv (2005; 2005), Finucane (2000), and Mellers (1999). Accordingly, Sanfey, Loewenstein, Rick, McClure and Cohen discuss the emergence of the new discipline of "neuroeconomics" as a challenge to the standard economic assumption that decision making is a unitary process mainly resulting from utility maximization (Loewenstein, Rick, and Cohen 2008; Sanfey et al. 2006).

The decision-making model described in this study aims to provide a more realistic system for understanding the process associated with the formation and implementation of public policy, and an alternative means for achieving cogent decisions in the most complex situations. Although such a model is of general applicability in all instances of public policy, its implementation is perhaps most urgent as a tool in the current design and execution of social, institutional and economic policies in the developing world. A case in point regarding this critical need is Latin America. Since the end of the Second World War, the implementation of political and eco-

¹⁴ Steven R. Quartz has highlighted the importance of multidisciplinary approaches like the one used in this research. A similar methodology integrating humanities, social sciences, and neurosciences is distinctive of the research he is advancing as director of the "Brain, Mind, and Society Ph.D. Program" at the California Institute of Technology. As Quartz observes, the main objective of this Program is to provide "innovative, interdisciplinary training opportunities to prepare a new generation of scientists with both the analytic foundations and the experimental skills needed to pursue careers at the intersection of neuroscience and the social sciences" (California Institute of Technology 2009).

¹⁵ Jonathan D. Cohen is co-director of the Center for the Study of Brain, Mind, and Behavior (CSBMB), whose fundamental goal is to establish an integrated continuum of research on the relationship of brain and mind. In pursuing this scientific mission, "the CSBMB embraces a multi-disciplinary, multi-methodological, and multi-institutional approach that draws on expertise and advances in mathematics, physics, chemistry, molecular biology, neuroscience, and psychology" (Princeton University 2009).

¹⁶ Jennifer Lerner is co-founder and director of the Harvard Decision Science Laboratory at the Kennedy School of Government, an institution that "draws on psychology, economics, and neuroscience to study social and emotional influences on human judgment and decision-making" (Harvard University 2009).

conomic reform in the region has followed the directives of policies strictly influenced by the rigid premises of rational choice models. This is most clearly perceived in the set of policies derived from the Washington Consensus.¹⁷ The oversimplified approach that characterizes this model has failed to account for the realities associated with general preferences in the region, which derive from intricate interactions between belief, emotion and processes of decision making. In like manner, it has placed unrealistic expectations in the capability of exogenous macro-level approaches, such as policies regarding monetary or fiscal-based interventions, to alter a highly complex social and political context.

In sum, the alternative decision-making model of this study seeks to offer a more complete perspective of policy design and implementation by adding to rational choice models the behavioral exceptions to the assumption of strict rationality and the central role emotions play in decision making. Following Weber's focus on the study of Protestant beliefs, emotions and decision making, the present work provides corrections to this template by incorporating recent evidence from neurobehavioral sciences. In the same manner, this dissertation endeavors to proffer an alternative to Weber's selection of determinant Protestant beliefs and emotions that impact the formation of developmental preferences. In substance, this study aims to present a modification of the path that Weber used to explain how these factors affect the formation of traits that influence economic development. In this context, the model proposed by this dissertation extends

¹⁷ According to John Williamson, the economist who in 1989 coined the term "Washington Consensus," this refers to the basic reforms that "Official Washington" (the U.S. Treasury, The Federal Reserve Board, the IMF, and the World Bank) recommended for Latin America in order to benefit from the Brady Plan of debt relief in the late 1980's and 1990's. The Washington Consensus incorporated a set of propositions that summarize policies widely viewed as supportive of development articulated at the end of two decades of economic development theorization, particularly under the influence of Rational Choice models. The Consensus reflected the confidence that economists placed on policies oriented toward rapid economic development that emphasized fiscal discipline, redirection of public expenditures, tax reform, interest rate liberalization, competitive exchange rates, trade liberalization, foreign direct investment flow, privatization, deregulation and protection to property rights (Williamson 1999, 4-8). Nevertheless, the one dimensionality of these rational-choice based policies ignored the more complex settings for their design and implementation as determined by cultural and behavioral factors influencing decision makers in the region. This is the sense in which Mishkin and Savastano summarize the very modest results of the Washington Consensus in the region when recognizing that monetary and fiscal reform "cannot be done in a vacuum" (Mishkin 2001, 444).

Weber's template of analysis into a more realistic approach to policy design and implementation that better captures the complex choices decision makers face in the developing world.

1.1 Empirical Evidence in Support of the Protestant Ethic of Development

The distinctive behavioral imprint that Weber assigns to the Protestant Ethic is manifested in a form of rationalism that accounts for its effect on labor productivity and capital accumulation. As described in detail later, Weber found evidence of what he called "Economic Rationalism" in the ascetic assimilation of the Protestant beliefs of Predestination and Calling. He considered these beliefs as determinant for the Protestant departure from the traditional view of labor as a means for need satisfaction. Instead, Weber saw in the assimilation of these beliefs, and their related emotions, the source for the development of a conception of labor prone to capital accumulation and acquisition (Weber 2001, 26). His emphasis on Protestant beliefs underscores Weber's distinction between "idealism" and "materialism" with which he departs from the economic determinism characteristic of Marxist theory.¹⁸ Accordingly, Weber affirms in *The Protestant Ethic* that the Reformation cannot be explained as a "historically necessary result" of prior economic changes (Weber 2001, 48-49). This thesis forms the basis of several alternative schools

¹⁸ The relevance of the cultural thesis has been forwarded by empirical evidence against the postulates of the modernization theory of development. Based on Marx's materialistic and deterministic views, this theory has been recently defended by authors like Bell (1976; 1979; 1988; 1996; 2002), who supports the view of the detrimental effects of economic development on culture. Modernization theory is contrasted with the view of authors like Huntington, who drawing from Weber's original influence, affirms that cultural values determine enduring and autonomous influences on society. This view refers to the evidence against Marx's thesis regarding the relationship between industrialization and cultural change (Marx 1973). Marx's frame of reference has been influential for modernization theorists' claim that economic development determines cultural changes. Among these changes, modernization theory claimed that the decline of religion would be modernization's most anticipated outcome. Nevertheless, as Inglehart observes, the unfulfilled Marxist prophecy regarding the proletariat revolution, hegemony of state run economy and the decline of religion, has seriously undermined the validity of this theory (Inglehart and Baker 2000). Rather, Inglehart affirms that the modernization thesis is oversimplified, and that it only applies to the transition from an agrarian to an industrial society. As he concludes, "the shift from agrarian to urban society reduces the importance of organized religion, but this is counterbalanced by growing concerns for the meaning and purpose of life. Religious beliefs persist, and spiritual concerns, broadly defined, are becoming more widespread in advanced industrial societies" (Inglehart and Baker 2000, 49). Marx's unfulfilled prophecies appear also reflected in empirical evidence showing that cultural change is not linear. Societies seem to follow different trajectories when subjected to the same forces of economic development, holding values that substantially differ from the deterministic view of modernization theories (Inglehart and Baker 2000, 22).

that emphasize the persistence of cultural values and religious beliefs in addition to economic and political influences (DiMaggio 1994).

In this context, different currents of thought have stressed the importance of cultural factors for attaining increased levels of social, political and economic development. For instance, Putnam (1993) emphasizes that regions of Italy where democratic institutions functioned most successfully were those in which civil society was relatively well developed in the 19th century. In further studies, Putnam also focused on evidence underscoring the negative effects on life satisfaction that result from shrinking access to "social capital." Based on his U.S. observations, Putnam concludes that this is an outcome of the increasing disconnection from family, friends, neighbors, and social structures; whether these structures include the church, PTA, clubs, political parties, or bowling leagues (Putnam 2000, 2002; Putnam, Feldstein, and Cohen 2003). In a similar sense, Hamilton (1994) affirms that civilizational factors continue to structure how societies and economies organize themselves, despite the global influence of capitalism as a universal way of life. Likewise, Di Maggio (1994) and Guillen (1994) have found marked cross-cultural variations in the organization of capitalist production and managerial ideologies.

Samuel P. Huntington, perhaps one of the most renowned proponents of Weber's thesis in the United States, argues that world politics has entered a new phase in which the great divisions among humankind, and the dominating source of global conflict, will be cultural. He observes that civilizations, the highest cultural groupings of people, are differentiated from each other by religion, history, language, and tradition. These divisions are deep and increasing in importance, and their fault lines constitute the inter-state and sub-state battle lines of the future. Huntington sees the world as divided into eight major "cultural zones" based on cultural differences that have persisted for centuries, in spite of the transforming effect of forces related to economic and political development (Huntington 1993; 1996). Most recently, Huntington empha-

sized the importance Anglo-Protestant culture plays in halting and reversing the processes of U.S. institutional, social and ethical decline, as well as in renewing the vitality and identity of the American people. As he observed, “Americans should recommit themselves to the Anglo-Protestant culture, traditions, and values that for three and a half centuries have been embraced by Americans of all races, ethnicities, and religions and that have been the source of their liberty, unity, power, prosperity, and moral leadership as a force of good in the world” (Huntington 2004, xvii).

The theory of development that follows Weber’s focus on cultural factors has also provided the basis for empirical studies emphasizing the effects of beliefs on social, civic, and economic attitudes. Studies have documented the impact of beliefs on the transformation of fundamental social behavior such as trust, altruism, volunteerism, and crime.¹⁹ On civic attitudes, research has shown evidence of the relationship between the assimilation of Christian beliefs, generally associated with Protestantism, and civic behavior in the United States. In fact, a growing body of literature has shown how religious beliefs and commitments affect political values and behavior (Guth et al. 1988; Jelen 1993a, 1998; Leege and Kellstedt 1993; Sherkat and Ellison 1999; Woodberry and Smith 1998), as well as the formation of essential civic skills (Brady, Verba, and Schlozman 1995; Jones-Correa and Leal 2001; Schlozman, Verba, and Brady 1995; Verba, Brady, and Schlozman 1995; Verba et al. 1993). Moreover, Protestantism has been cited as an important factor in the development of additional roles that contribute to different forms of political participation (Brady 1995; Burrell 1964). On policy preferences, several studies have explored the effect of values on social policy (Feldman 1993; Feldman and Steenbergen 2001; Feldman and Zaller 1992; Smith 1998). Similarly, other research has assessed the application of Calvin’s

¹⁹ See Easterly (2001; 1997), Jennings (2004), Knack (1997), Levi (2000), North (1990), Welch (2004), and Zak (2001). Empirical evidence regarding the favorable effect of religious beliefs on altruism has been found by Pyle (1993) and Hart (1996). The positive effects of volunteerism has been documented in the works of Iannaccone (1995), Greeley (1996), Portes (1998), Coleman (1988), and Park (2000).

ideas to republican theories of government (Baron 1939; Franklin et al. 1969; Gorski 1993; Muller 1985; Philpott 2001; Skinner 1978; Walzer 1965; 1985).

Evidence of these associations suggests a critical effect of beliefs on economic development. In this context, Barro and McCleary showed that religion affects economic outcomes by fostering beliefs and values that influence individual traits such as thrift, work ethics, honesty, and openness to strangers (Barro and McCleary 2002; 2003, 23). Similarly, Iannaccone found that interactions fostered by churches remain important elements of social and economic development (1984; 1988; 1991; 1994; 1998; 2004). These results regarding economic behavior have been further underscored by the influential works of Putnam (2000) and Sacerdote (2001).

Further empirical evidence suggesting the association between Protestantism and development derives from the macro-level works of Inglehart, who has assessed the effect of Protestant beliefs and freedom-based values on economic and political development. In his first study of national data from the 1990-1991 World Values Survey, Inglehart (1997) showed large and coherent cross-cultural differences, demonstrating that the worldviews of peoples in high-income societies seem to differ systematically from those of low-income countries.²⁰ Following this empirical study, Inglehart produced a larger analysis on the three waves of the World Values Surveys (1981-1982; 1990-1991, and 1995-1998), in which he placed societies in a global cross-cultural variation map. The aggregated data of these three waves of Value Surveys constitutes the largest investigation ever conducted on attitudes, values, and beliefs around the world. It encompasses aggregated macro-level analysis from 65 countries on all six continents, and accounts for more than 75% of the world's population.²¹

²⁰ These differences were most salient in the case of political, social, and religious norms and beliefs. The author attributed these differences to the polarization between "traditional" versus "secular-rational" orientations toward authority, on one hand, and "survival" versus "self-expression" values on the other. Given these differences, Inglehart affirmed that each society can be located on a global cross-cultural variation map (Inglehart 1997, 81-98).

²¹ Inglehart used two criteria to allocate countries in the global cross-cultural variation map: First, he focused on a traditional/secular-rational values dimension reflecting differences among societies in terms of the importance assigned

In contrast to common critiques of Weber's thesis,²² Inglehart's additional statistical analyses (2000) seem to confirm Weber's view regarding the relationship between the Protestant Ethic and increased levels of economic development. The six models used in Inglehart's work showed that cultural indicators in the regression equations increase the percentage of variance explained by the models.²³ The results further showed strong association between being a country of Protestant background and being among the nations with the largest levels of annual per capita gross national product (GNP). The upper right corner of the "Global Cultural Map," populated by countries of the European Protestant tradition, corresponds to the upper right corner of the "Economic Zone Map," which groups countries with the highest level of GNP per capita (Inglehart and Baker 2000, 29-30).

Inglehart used the second dimension regarding survival/self-expression to identify the level of assimilation of values emphasizing either order or freedom. Here, Inglehart observed that "virtually all of the historically Protestant societies rank higher on the survival/self-expression dimension than do all of the historically Roman Catholic societies" (Inglehart and Baker 2000, 1997 #1028, 31). The values in countries of Protestant heritage that appear most associated with higher levels of economic development are precisely those founded on "post-materialist values," such as an "individual sense of freedom" (Inglehart 1997, 29, 30). This empirical evidence, there-

to religion. These are the two poles of his map's vertical axis. The second criterion focused on the survival/self-expression dimension, which taps a "syndrome" of trust, tolerance, subjective well-being, political activism, and self-expression as well as values underscoring the importance of high levels of security. This second criterion corresponds to the horizontal axis of the map (Inglehart and Baker 2000, 25-28). If the vertical axis refers to the two poles in the continuum of highly religious and less religious societies, the horizontal emphasizes the differences between the importance that societies place on materialist values, such as maintaining order, versus the post-materialist values of freedom and self-expression (Inglehart and Baker 2000, 29).

²² Rachfahl and Fischer were among the first authors contesting the relationship Weber drew between the Protestant Ethic and increased levels of economic development, arguing that such association was based on unsatisfactory empirical evidence (Rachfahl 1924). Samuelsson (1961) has even questioned the accuracy of the figures of the Baden statistics that Weber provided in the context of his study of the economic activities of Catholics and Protestants in 1895. More generally, Hudson (1961; 1988) and Walzer (1965) have claimed that economic research in the Rhineland, the Netherlands and Switzerland in the sixteenth and seventeenth centuries do not reveal Weber's inferred association.

²³ The adjusted R^2 increases from .42 to .70 in the case of the six models of equations regarding the Traditional/Secular-Rational Values, and from .63 to .84 regarding the Survival/Self-Expression Values (Inglehart and Baker 2000, 39-40).

fore, suggests a strong association between the assimilation of Protestant beliefs, the expression of values stressing an “individual sense of freedom,” and the attainment of increased levels of economic development. As detailed later, this association forms the core of the decision-making model that constitutes the main focus of this dissertation.

In addition to these studies on Protestantism, freedom and development, Inglehart recently performed empirical analyses on the importance that freedom-based values have for increases in integral levels of subjective well-being (SWB). This empirical evidence supports the considerations put forth by the present dissertation, which transcends an understanding of development simply from its economic dimension. Inglehart’s results corroborate the conclusion of Sen (1999), who observed that in many societies people value free choice as much as they value economic security. This view is also shared by the theory of human development proposed by Inglehart (2005) and Welzel (2003).²⁴ According to this theory, human development shifts emphasis from the pursuit of happiness that focuses on economic means to a broader pursuit that emphasizes the maximization of free choice in all realms of life. In this context, human development theory suggests that developmental changes in the last 25 years have resulted in increased happiness owing to greater freedom of choice (Inglehart et al. 2008, 270). Recent empirical confirmation of human development theory’s main tenets constitutes additional support to the aim of this dissertation, especially regarding its emphasis on Protestant beliefs related to the value of freedom.

Inglehart et al. explored the relationship between freedom and subjective well-being from the macro-level perspective of panel regression analysis. They used this methodology on data from the World Values Survey and the European Values Study, which encompass five waves of studies from 1981 to 2007. The sample of this large database represents scores of countries that

²⁴ Welzel (2003) found that the linkage between individual resources, emancipative values, and freedom rights is universally present across nations, regions and cultural zones. He also observed that this human development syndrome is shaped by a causal effect of individual resources and emancipative values on freedom rights. Finally, Welzel found that this effect operates through its impact on elite integrity, as the factor that renders freedom rights effective.

account for almost 90% of the world's population (2008). The researchers also focused on Andrews (1976) measures of "life satisfaction" and "happiness," as sensitive indicators of SWB. Inglehart et al. found that the relationship between SWB and economic development corresponds to a curvilinear function, meaning that further gains in income among higher income nations bring relatively little change in well being (Inglehart et al. 2008, 268-269). This observation appears to lend empirical support to the hypotheses of Frey (2000), Inglehart (1990) and Myers (1992) regarding the decreasing marginal rate of change in SWB with respect to marginal increases in wealth.

Results of panel regression models suggest that religion and tolerance are among the most important factors affecting levels of SWB. The indicators "strength of religiosity" and "tolerance of outgroups" show the highest positive coefficients and statistical significance across the four regression models employed in the empirical analysis (Inglehart et al. 2008, 271). This is the sense in which the researchers conclude that "high levels of religiosity and tolerance of outgroups predict relatively high future levels of SWB" (Inglehart et al. 2008, 269). On the other hand, when they compared the changes in SWB from the first available survey to the most recent, Inglehart et al. found that the only indicator statistically significant across their regression models is "change in sense of free choice." This variable alone explains 30% of the variation over time in SWB. Based on these results, they affirm that "a growing *feeling* that one has free choice was by far the most important influence on whether SWB rose or fell" (Inglehart et al. 2008, 270, italics added). These observations seem to reinforce Weber's cognitive template that unites Protestant belief and emotions as factors determining substantial changes in economic behavior.²⁵ More particularly, these results support the aim of the present dissertation to provide an alternative de-

²⁵ Since Protestant countries display high levels of income per capita, Inglehart's evidence further undermines the critique of authors like Hill (1964a; 1964b), Sombart (1915; 1998), and Tawney (1962). According to these authors, a prior development of the "Capitalist Spirit" determined values characteristic of the Protestant tradition.

cision-making model based on Weber's template to explain the developmental effects of freedom-based Protestant beliefs and emotions on development.

Inglehart et al. also studied associations among other factors related to increased levels of free choice, including effects of economic resources, democratization, and tolerance. Their hierarchical linear modeling (HLM) approach found that economic growth and per capita GDP explained 50% of the country-level differences in SWB. However, adding the measure of free choice to the regression increased the explained variance in SWB from 50% to 71% (Inglehart et al. 2008, 271,273). The cross-level interaction outcomes showed that the effect of a person's household income on her SWB interacts negatively with the given country's per capita GDP, whereas the effect of a person's "sense of free choice" on SWB interacts positively with her country's per capita GDP. In these observations, the authors found confirmation of the human development theory that "as societies become wealthier, household income shows a diminishing impact on SWB, but personal freedom shows an increasing impact" (Inglehart et al. 2008, 271). Inglehart et al. concluded that their findings were consistent "with the interpretation that economic factors have a strong impact on SWB in low income countries, but that, at higher levels of development, evolutionary cultural changes occur in which people place increasing emphasis on self-expression and free choice, leading them to increasingly emphasize strategies that maximize free choice and happiness" (Inglehart et al. 2008, 279).

The main component of the "sense of freedom" variable used by Inglehart corresponds to indicators of interpersonal trust. This is a value that in view of Almond and Verba (1963), Coleman (1990), Fukuyama (1995), and Putnam (1993) appears to have critical importance to laying the foundations of democracy, and to sustaining institutions that spur development. In confirmation of Weber's thesis, Inglehart observed that "most historically Protestant societies rank higher on interpersonal trust than do most historically Catholic societies" (Inglehart and Baker 2000,

34).²⁶ These results are even more salient when comparing the effects of assimilating a Protestant historical tradition with respect to an Orthodox or Ex-communist heritage.²⁷

Finally, Inglehart shows the importance that historically experienced beliefs have once they are assimilated into the national culture and identity of specific societies. In this context he affirms that “the impact of living in a society that was historically shaped by once-powerful Catholic or Protestant institutions persists today, shaping everyone –Protestant, Catholic or other- to fit into a given national culture” (Inglehart and Baker 2000, 36). Inglehart observes that “Protestant or Catholic societies display distinctive values today mainly because of the historical impact their respective churches had on their societies, rather than through their contemporary influence.” Nevertheless, he reaffirms the importance that the assimilation of these original values had on determining aggregated social and economic developmental outcomes (Inglehart and Baker 2000, 37). This empirical evidence agrees with Putnam’s observations that there is a very high association between a freedom-based value such as interpersonal trust, and the formation of horizontal, and locally controlled organizations. The results also support Putnam’s view that there is a very high correlation between low levels of interpersonal trust and an institutional setting characterized by large, hierarchical, and centralized bureaucracies (1993).

Given the persistence of this distinctive Protestant value system in forms of social organizations, Inglehart concludes that “Protestant religious institutions gave rise to the Protestant Ethic, a relatively high interpretation of personal trust, and a relatively high degree of social pluralism –all of which may have contributed to earlier economic development in Protestant countries

²⁶ Another important critique of Weber’s thesis focused on the alleged lack of substantial differences between economically relevant Protestant and Catholic values. Some even asserted that Catholicism shares values more closely related to the emergence of the “Spirit of Capitalism,” which the Reformation contributed to undermine (Fanfani 1972; Lüthy 1970; Sombart and Epstein 1915; Sombart and Epstein 1998; Tawney 1962).

²⁷ Inglehart produces a coefficient of the regression of Survival/Self-expression values on independent modernization indicators controlling for the three cultural variables of Ex-Communist, Historically Protestant, and Historically Orthodox. In this case, he observed that “a Protestant cultural heritage is associated with the syndrome of high levels of trust, tolerance, well-being, and post materialism that constitutes self-expression values; Orthodox religious heritage and Communist historical heritage both show a *negative* impact on these values, even after controlling for differences in economic level and social structure” (Inglehart and Baker 2000, 39-40, italics in the original).

than in the rest of the world. Subsequently, the fact that Protestant societies were (and still are) relatively prosperous has probably shaped them in distinctive ways” (Inglehart and Baker 2000, 37-38).²⁸ As seen later, this empirical evidence further supports the main elements described in the notion of church used in this work to identify the attributes of a horizontal, non-hierarchical, and locally controlled form of social organization distinctive to the Protestant Church.

The results from the regression models and path analyses used by Inglehart et al. suggest empirical corroboration of the main tenets of Weber’s thesis regarding the relationship between the assimilation of Protestant values and higher levels of development. Nevertheless, as Weber also understood, this empirical macro-level methodology is inadequate to understand the paths through which Protestant beliefs and emotions affect decision making and the formation of preferences influencing economic development. Regarding causality in a regression model, Ramanathan (1998) observes that “in specifying the model as $Y = \alpha + \beta X + u$, we implicitly assumed that X causes Y. Although R^2 measures the goodness of fit, it cannot be used to *identify causality*. In other words, the fact that X and Y are highly correlated does not indicate whether changes in X cause changes in Y or vice versa” (Ramanathan 1998, 123, italics in the original).²⁹

As for Weber’s template developed to describe the mechanisms of the Protestant Ethic, the limits of even the most advanced empirical methods of macro-level statistical analysis also determined the choice of this dissertation’s methodological approaches. To assess the mechanisms through which beliefs and emotions affect developmental decision making requires a mi-

²⁸ This evidence seems to further contradict the position of Hill (1964a; 1964b), Sombart (1915; 1998), and Tawney (1962) who suggest that the development of the set of values associated with the Protestant tradition resulted instead from the influence of a conveniently developed capitalistic forms of production. This corresponds to the reversion of Weber’s causal relation characteristic of Marxist theories, according to which economic factors change culture.

²⁹ As the author exemplifies, if the number of thefts (Y) in a city is regressed against a constant term and the number of police officers (X) and then observe that the estimated slope coefficient is positive, indicating a positive correlation between X and Y, it does not mean that increasing the number of policemen increases theft. In this case, the spurious correlation of the two variables, one regressed against the other, also produces a spurious regression. In the present example, both variables may be jointly determined, or may be in a situation of “feedback,” where causation may go both ways, their high correlation may be entirely determined by other variables, and neither of them might be the direct cause of the other (Ramanathan 1998, 125-126).

cro-level multidisciplinary approach integrating methodologies from the political, social, behavioral and neurobiological sciences. The study of the relationship underlying these variables appears more properly addressed at the individual level of rational mechanisms affecting decision making and the implementation of optimal complex choices. The micro-level study of the behavioral effect of religious beliefs and emotions is a well established research method in the fields of psychology and neurobiology, but less common in the areas of politics and economic development. In these fields, such an approach has remained neglected or understudied. With this in view, the present dissertation proposes a model for the design and implementation of public policy that aims to explain the interactions among Protestant beliefs, emotions and decision making. The present model addresses in this manner one of the most important discontinuities that Almond seeks to mitigate among methodological “tables” of current political science studies.

1.2 Economic Rationalism and the Decision-Making Model of Palpational Rationality

The formulation of the decision-making model at the core of this study starts with a comparative assessment of Weber’s notion of “Economic Rationalism.” Economic Rationalism is the cognitive system that Weber used to assess the effect of specific Protestant beliefs and their related emotions on economic development.³⁰ The present work uses the same integration of Protestant belief, emotions, reasoning and decision making characteristic of Weber’s cognitive system as a template, but combines a different choice of determinants with a more advanced methodology of micro-level analysis. Economic Rationalism highlights the effect that the assimilation of the Protestant beliefs of Predestination and Calling has on the perception of the anxiety or fear derived from not knowing if one is among the elect. These psychological sanctions form

³⁰ Giddens asserts that although Weber adopted a “verstehen” based view that cultural values lend meaning to human life, “he rejected the view that recognition of the ‘meaningful’ character of human conduct entails that causal explanation cannot be undertaken in the social sciences” (Weber 2001, ix).

the core of the behavioral effects that Weber sees as manifested in altered processes of decision making in the believer, which through higher levels of concentration in one's work result in increases in labor productivity and capital accumulation.

Weber argued that Protestants, especially Calvinists, “both as ruling classes and as ruled, both as majority and as minority, have shown a special tendency to develop economic rationalism which cannot be observed to the same extent among Catholics either in the one situation or in the other.” He further suggests that “the principal explanation of this difference must be sought in the permanent intrinsic character of their *religious beliefs*, and not only in their temporary external historico-political situations” (Weber 2001, 7, italics added). The essential elements of Weber's causal mechanism of Economic Rationalism result from the assimilation of specific Protestant beliefs, which Calvin described in detail in his *Institutes of the Christian Religion*.³¹ Weber considers the “intrinsic character” of these beliefs as inducing more prominent economic behavioral changes than their external “historico-political situations.” With these considerations in mind, Weber foregrounds the two main elements of the *Protestant Ethic*, when he observes that, “an extraordinary capitalistic business sense is combined in the same persons and groups with the most intensive forms of a piety which penetrates and dominates their whole lives. ... Especially Calvinism, whenever it has appeared, has shown this combination” (2001, 9). The importance Weber assigns to Protestant beliefs and their related emotions as factors for the formation of developmental preferences forms the basis of the theoretical template that this dissertation follows to produce its decision-making model for public policies of development.

³¹ The *Institutes of the Christian Religion* of John Calvin (1509–1564) is regarded as a classic statement of Protestant theology because of its comprehensiveness, order and symmetry of composition, as well as its substantial consistency of detailed judgments. It constitutes one of Calvin's major contributions to the Christian revival following the Protestant Reformation. After resigning to his clerical benefices in 1534, Calvin separated himself from the unreformed church, and initiated his defense of the evangelical faith. He experienced the persecution of Protestants in France, and retreated to Basel in January 1535. Therein, Calvin worked assiduously on the publication of the *Institutes* to “vindicate from undeserved insult my brethren whose death was precious in the sight of the Lord” (Calvin 1949, 51). In August 23, 1535, Calvin completed the manuscript by appending the Prefatory Address to King Francis I of France as a defense of the Protestant faith, upholding the Reformation's main theological foundations, and pleading for justice and vindication of persecuted Protestants. The opus was finally published in Latin in March, 1536.

Accordingly, this dissertation refers to the “unidirectional effect” that emerges as one of the most critical elements of Weber’s Economic Rationalism. In Weber’s view, “the question of the motive forces in the expansion of modern capitalism is not in the first instance a question of the origin of the capital sums which were available for capitalistic uses, but, above all, of the development of the spirit of capitalism. Where it appears and is able to work itself out, it produces its own capital and monetary supplies as the means to its ends, but the reverse is not true” (Weber 2001, 31). Thus, Weber affirms the essential imprint that certain Protestant beliefs can have on the formation and consolidation of traits conducive to high levels of economic development. At the core of this effect, Weber asserts the unidirectional quality of this causal relation because preferences based on Protestant beliefs seem to determine the form of behavior associated with higher levels of well-being and prosperity, not the other way around.

Following Weber’s cognitive template integrating Protestant belief, emotion, and decision making, this dissertation proposes the decision-making model of Palpatational Rationality, which differs from Weber’s model in its choice of determinant variables, and in its use of a more advanced method of micro-level analysis. Palpatational Rationality focuses on Calvin’s understanding of the Protestant belief of Christian Freedom and on his pietistic experience of God’s love through Christ’s redemptive ministry.³² Underscoring the importance that Calvin assigned to this belief and emotion, this work explores their combined effect on reasoning, decision making and development. As explained in detail below, the main determinants of Palpatational Rationality dif-

³² According to Calvin, piety is “that reverence joined with love of God which the knowledge of His benefits induces” (Calvin 1960, 41). In view of the Reformer, the beginning of all ethics requires the knowledge of the self; for without it, there is no possible knowledge of God, and without the knowledge of God there is no knowledge of the self (Calvin 1960, 37). Piety, as a prerequisite for the knowledge of God and the self, involves the exercise of both trust and reverence. The reverence given to God in acknowledging Him as the source of every good is also the foundation on which individuals build their trust and desire to cleave to Him (Calvin 1960, 50). Weber properly understood that the assimilation of Calvin’s theology by believers is characterized by the “most intensive form of a piety which penetrates and dominates their whole lives” (2001, 9). The editors of the *Institutes* hold that Calvin did not labor in formulating a “Summa Theologiae,” as in the case of Aquinas, but rather a “Summa Pietatis,” for his main aim was, according to the original title of the *Institutes*, to expound “the whole sum of piety and whatever is necessary to know in the doctrine of Salvation” (Calvin 1960, li).

fer from those of Economic Rationalism as follows: First, Palpational Rationality emphasizes the preeminence that Calvin gives to the belief of Christian Freedom instead of the role assigned by Economic Rationalism to Predestination. Second, Palpational Rationality integrates the behavioral effect of Christian Freedom with the Sublime Palpation of God's love, instead of the relevance that Economic Rationalism attributes to the anxiety of not knowing if one is among the elect. Third, Palpational Rationality differs in the path used to explain how the belief of Christian Freedom and the emotion of the Sublime Palpation affect judgment and decision making.³³ Instead of Weber's underlined effect on focus and concentration, Palpational Rationality underscores the counteracting effect that this belief and emotion can have on the subjective perception of the value and occurrence of outcomes. Finally, the larger scope of Palpational Rationality's decision-making model transcends the focus of Weber's Economic Rationalism to the mere economic sphere of subjective well-being.

Staying within the same limits that Weber's template has on Calvinist Protestant beliefs, the decision-making model of Palpational Rationality focuses on Calvin's view of the Protestant belief of Christian Freedom. According to the definition outlined in chapter 4 of this dissertation, and given the influence Augustine and Luther had on Calvin, the Principle of Christian Freedom is viewed as the alternative Protestant belief to Weber's Predestination that affects the decision making processes associated with higher levels of general subjective well-being. Based on the

³³ The term "palpation" derives from the Latin verb "palpare," meaning "to touch softly, stroke," whence the English "palpation," which evokes the notion of movement but in a loving and gracious manner (Klein 1971, 276). In its medical use, palpation means "to examine by touch" (Merriam-Webster Inc. 2005, 893). As described in chapter 2, palpation evokes the sensing of the innermost parts of the body that physicians perform with their hands to diagnose a disease for the purpose of healing. It also refers to the perception of this healing touch by the sick person. The meaning of the word "palpation" as sensing of the healer's hand constitutes a form of impression that differs from the nature of the other two mental motions. Palpations allude to serene and overpowering impressions able to dominate the agitation and violence produced by innate emotions. From this vantage point, it resembles the alleviation that the healing hand of the physician brings to the sick person from the suffering inflicted by the diseases of the body. Regarding feelings, palpations also have a comforting nature but of a different source and magnitude. Instead of the temporary perception that results from the individual's conscious actions, as in the playing of the harp, palpations allude to the lasting perception of the healing produced from an exogenous action, as in the case of the physician's healing touch. Thus, the exogenous source and the healing nature associated with palpations constitute the fundamental difference of this form of impressions with respect to emotions and feelings, and with respect to their different effects on reasoning and decision making.

importance that Calvin assigns to Christian freedom, this dissertation refers to the Principle of Christian Freedom as the liberating effect that the perception of God's love for the human race produces in the renewal of mental and volitional capabilities of the believer.³⁴ This liberating effect seems instrumental for allowing believers to progressively overcome the slavery of reason to basic emotions characteristic of human nature.

Supporting the view followed by this dissertation, several authors have also suggested a non-predestinarian view of Calvin's theology. Among these thinkers, Hall (1966, 19-37), Dantine (1966, 365-377), Armstrong (1969, 41-42, 136-138), Kendall (1976; 1979, 29-38) and Thomas (Thomas 2000) regard Theodore Beza, Calvin's successor in Geneva, as responsible for the departure from Calvin's non-predestinarian theology. These authors consider Beza responsible for turning Calvin's biblical and Christocentric theology into the scholastic Reformed theology of the seventeenth century. They further regard Beza's theology as highly systematized through the introduction of Aristotelian deduction, dominated by predestination, burdened with the doctrine of limited atonement, and thus giving rise to unhealthy introspection in the search for marks of personal election.

From a formal perspective, another group of authors have supported the view of Calvin's non-predestinarian theology according to the placement that he gives to the doctrine of predestination in the *Institutes*. Brunner (1950), Duffield (1966), Toon (1967), Torrance (1982), Demarest (1984), Wallace (1992), Dowey (1994), and Helm (2007) suggest that the placement of the doctrine of predestination is an all-important consideration. They hold that Calvin deliberately conceived the placement of predestination biblically within the doctrine of salvation. Conversely, they argue that Beza reverted to the medieval scholastic device of placing predestination under

³⁴ Calvin starts the chapter on Christian Freedom in his *Institutes* stating that this subject is "of prime necessity, and apart from a knowledge of it consciences dare undertake almost nothing without doubting; they hesitate and recoil from many things; they constantly waver and are afraid" (Calvin 1960, 833). Underscoring the central role that this dissertation attributes to Christian freedom, Calvin asserts that "unless this freedom be comprehended, neither Christ nor Gospel truth, nor inner peace of soul, can be rightly known" (Calvin 1960, 834).

the doctrines of God and providence (the position in which St. Thomas Aquinas discussed it). According to Brunner, Beza's approach "shows unmistakably that [predestination] is not derived from Christian revelation, but from the process of speculative thought" (Brunner 1950, 345). Duffield seconds this view, recognizing that "by doing so, although he was not alone in this, Beza re-opened the road to speculative determinism which Calvin had attempted to close" (Duffield and Battles 1966, 27).³⁵ Müller proffers that Calvin placed predestination after the fall of man and in relation to the liberating ministry of God's Salvation in Christ, assuming a model that is in essence Christological. Nevertheless, Müller observes that "nearly all of the extant discussions of the placement of Predestination in the Reformed theologies of the sixteenth and seventeenth centuries have been fundamentally misguided. They have consistently confused placement with definition" (Müller 2005, 208). This explains the aim of this dissertation to advance a direct analysis of Calvin's *Institutes* in order to emphasize instead the critical role that Calvin assigns to Christian Freedom.

This dissertation underscores the Principle of Christian Freedom characteristic of Calvin's understanding of Christ's redemptive ministry as a means to counteract the natural effect that Hume assigns to lust and fear as "masters" of reason.³⁶ Chapter 2 evaluates the influence that this dissertation assigns to Hume's cognitive system on Weber's template of Economic Rationalism as it seeks to explain the interaction between belief, emotion, reasoning and decision making. Particularly, chapter 2 describes the importance that Hume assigns to fear of death and lusts of the flesh as the most powerful passions affecting reasoning and decision making. Using this template as a basis, the decision-making model of Palpatational Rationality focuses on the subjective perception of the value and probability of outcomes as the main micro-level path through which

³⁵ Duffield (1966, 27) cites as his proof of the point, Beza's *Summa Sive Descriptio Et Distributio Causarum Salutis Electorum, Et Exitu Reproborum* (Beza 1570-1582, I, 170).

³⁶ Calvin states this close connection between Christian Freedom with the justification that results from Christ's redemptive ministry when affirming that "freedom is especially an appendage of justification and is of no little avail in understanding its power" (Calvin 1960, 833).

Protestant beliefs and related emotions seem to affect the processes of reasoning and decision making. Differently from the influence that Hume's cognitive system exercised on the template of Economic Rationalism, Palpatational Rationality transcends the "enslaving" effect attributed to anxiety by focusing on the liberating imprint characteristic of the Principle of Christian Freedom as found in the views of Augustine, Luther and Calvin. This alternative to Weber's choice of Predestination corresponds to the "sense of freedom" that Inglehart et al. have also found as closely associated with increased levels of subjective well-being characteristic of Protestant countries (2008).

Palpatational Rationality aims to provide an answer to Hume's conundrum regarding the unrestrained effect that powerful emotions like anxiety and fear exercise on decision making, as well as the difficulties inherent in building upon these enslaving effects a peaceful, just and prosperous society. Accordingly, Palpatational Rationality recognizes the important imprint that anxiety and lust play on the natural process of reasoning and decision making characteristic of an ethics of underdevelopment. Nevertheless, Palpatational Rationality also emphasizes the liberating essence of the Protestant "sense of freedom" with respect to the enslaving effect of these emotions, which remains the distinctive element of the Protestant ethic of development. Hence, in contrast to Weber's focus on fear and anxiety, Palpatational Rationality stresses the Protestant ethic of development that seems to result from freedom from the enslaving effect of lusts and fears, and that manifests itself in increased levels of economic and institutional progress attained by peaceful, just and prosperous societies.

The decision-making model of Palpatational Rationality stresses the effects that the assimilation of the Principle of Christian Freedom appears to produce in its interaction with the impression of the image of God's love for the human race, or Sublime Palpation. According to the definition provided in chapter 2, the Sublime Palpation is the supra-somatic impression by which the

individual is able to counteract the distortive effect that innate emotions have on cognitive and volitional human capabilities.³⁷ The counteracting effect that this Sublime Palpation seems to have on the enslaving effects of fears and lusts forms the neurobehavioral basis of Palpational Rationality's decision-making model, as described in detail in chapter 6. Thus, following the same template of reference characteristic of Economic Rationalism, Palpational Rationality emphasizes instead of fear and anxiety the importance of the Sublime Palpation as the main emotion associated with the developmental effects of Protestantism.

The concept of Sublime Palpation follows the same importance that Hume assigned to narratives as sources for the reproduction of images underlying influential impressions and emotions, as described in detail in chapter 2. This is the theoretical context through which this dissertation examines the essential value of the Image of God's love for the human race as reproduced from the narrative of the Gospels. From this perspective, the present thesis inquires about the nature of the Sublime Palpation's essential image as reconstructed from the narrative of the redemptive ministry, death and resurrection of Jesus Christ. Chapter 4 evaluates the attributes of the Sublime Image based on Calvin's views to define the cognitive and volitional effects that the Sublime Palpation can produce on decision-making processes, and on the formation of individual and collective developmental preferences.

In sum, Palpational Rationality focuses on the Protestant belief of Christian Freedom as the core belief associated with critical changes in decision-making processes, instead of Econom-

³⁷ In defining Sublime Palpation, this dissertation highlights Calvin's pietistic or "sublime" understanding of the Gospels, which involves not only the conception that there is a God, Creator of the universe, but also the realization of the benefits believers gain by knowing Him in His unique act of love for the human race manifested in the redemptive ministry of Christ. As Calvin acknowledges, only in this pietistic or sublime form of understanding can humans attain the true knowledge of God and of themselves (Calvin 1960, 35-38). Thus, piety is for Calvin the essence of pure and true religion: the reverence and trust that restrain the mind from sinning not out of the dread of punishment, fear or anxiety, but out of its love and worship of God as Lord and as Savior. This form of godly pietism is for the Reformer the foundation of all virtues: "Pietas fundamentum est omnium virtutum" (Calvin 1960, 50). The notion of "palpation" corresponds to the division proposed in chapter 2 of the three main mental impressions that affect human behavior: emotions, feelings and palpations. Emotions are defined as impressions of somatic origin, feelings as impressions of meta-somatic origin, and palpations as impressions of supra-somatic source. The term "somatic" derives from the Greek *σῶμα* signifying "what relates or affects the body" also from the Greek for body *σῶμα* (Klein 1971).

ic Rationalism's reliance on Predestination and Calling. Palpational Rationality also highlights the interaction between this belief of Christian Freedom and the emotion of perceiving God's love for the human race, or Sublime Palpation, instead of the anxiety of not knowing if one is among the elect. In the context of its critiques and observations regarding Rational Choice and Prospect Theory Models, Palpational Rationality emphasizes the more important effects that the combination of this belief of Christian Freedom and the emotion of Sublime Palpation seem to have on decision making. More specifically, it suggests their effect in counteracting the distortion that basic emotions of pleasure and fear can have on the subjective perception of the value and probability of outcomes. Thus, Palpational Rationality transcends the limits of Weber's cognitive system as strictly limited to economic well-being, and instead aims to provide a model for understanding cogent decision making in complex social and moral situations that affect all spheres of public policy.

1.3 Palpational Rationality's Specific Modifications to the Model of Economic Rationalism

The theoretical assessment of Weber's Economic Rationalism provides the context for the discussion of the alternative theoretical foundations of Palpational Rationality. Chapter 2 describes in detail Palpational Rationality's departure from the theoretical foundations of Economic Rationalism by examining the assumptions of an infinite chain of causation, and of emotions as "numerus clausus," or closed set of impressions. Palpational Rationality diverges from the assumption of an infinite time and space, and from the extrapolation of this assumption of infiniteness in Hume's notion of "Illusion of Liberty." In the case of its view on emotions, Palpational Rationality substantially differs from the relationship distinctive of Economic Rationalism, contrasting the notion of Illusion of Liberty and the general assumption of emotions as a closed set of impressions. Hence, Palpational Rationality diverges from the theoretical foundations that it con-

siders supporting Economic Rationalism, which reflected the influence that the assumption of infiniteness had on Hume's view of emotions as the unconquerable "masters of reason."

Differing from the influence that Hume seems to have exercised on Economic Rationalism, Palpatational Rationality reaches the opposite conclusion regarding human nature and freedom. Chapter 3 describes the corroboration of the opposite foundation regarding the finitude of the universal chain of causation by relying on recent empirical evidence from natural sciences. The evidence in favor of a finite chain of causation also suggests the alternative understanding of emotions as "numerus apertus," or open set of impressions. The combination of these two alternative foundations implies an opposite conception of human nature as capable of perceiving the "Reality of Freedom," a perspective characteristic of Palpatational Rationality. As a result, Palpatational Rationality endeavors to present a more realistic basis from which to understand the relationship between beliefs, emotions, decision making that seems to form the core of sustainable developmental preferences.

The most important common element of Economic Rationalism and Palpatational Rationality refers to the unique transformational effect of Protestant beliefs described in Calvin's *Institutes*.³⁸ In this context, Predestination³⁹ should be viewed as the most important of Protestant beliefs in Weber's template that operates in conjunction with the emotion of fear of not knowing if

³⁸ The version of Calvin's *Institutes of the Christian Religion* used in this work is the edited by J. T. McNeill and F. L. Battles (Philadelphia: Westminster Press), which collates the Latin edition published in 1559 by Barth and Niesel, with the 1536, 1539, 1543, 1545, 1550, 1553 and 1554 versions. As in the original title *Christianae Religionis Institutio*, Calvin used the singular form of the word "Institutio," or "institute," in the same manner it appeared in the titles of Latin works on law. This was also the form of the term employed by Christian writers in titles of compendia on various subjects, as found in the works of Ambrose, Isidore, Paul the Deacon, Hinkmar, and Bernard. A common rendering of "Institutio" used in this sense refers to the notion of "instruction." In its singular form, this word was uniformly employed in the Latin versions of Calvin's work until the Elzevir edition of 1654; the first to use it in the present plural form as translated in the English "Institutes" (Calvin 1960, xxxi).

³⁹ In his effort to isolate the nature of the main beliefs of Protestantism, Weber focused on the "superficial and unrefined" analysis of Calvin's understanding of Predestination and Calling as assimilated by the Westminster Confession and the writings of Beza and Baxter. Certainly, Weber acknowledged Calvin's rejection of the assumption that one can learn from the conduct of others whether we are chosen or damned, for the elect remain as "God's invisible Church" (Weber 2001, 65-66). Nevertheless, Weber stressed passages of the Westminster Confession (i.e. XVIII, p.2) in order to emphasize the view that "even the chosen one often has to struggle long and hard to attain *certitudo* which the consciousness of having done his duty gives him and of which a true believer will never entirely be deprived" (Weber 2001, note 40, p. 186, italics in the original).

among the elect as reflected in the “certitudo salutis.”⁴⁰ Weber affirms the centrality of Predestination when observing that “wherever the doctrine of predestination was held, the question could not be suppressed whether there were any infallible criteria by which membership in the ‘electi’ could be known.” In the *Protestant Ethic*, he states that “the question, Am I of the elect? Must sooner or later have arisen for every believer and have forced all other interests into the background” (Weber 2001, 65). Highlighting the centrality that his cognitive mechanism attributes to the Protestant belief of Predestination, Weber asserts that the question regarding “certitudo salutis” not only was of “central importance in the development of the Pietism which first arose on the basis of the Reformed Church” but became “fundamental to it” (Weber 2001, 65-66).

Weber justified the thesis that increases in efficiency of the Protestant ascetic conception of labor respond to the believers’ need of having an external confirmation that they are among the elect. Based on the practical understanding of Predestination that he derived from pastoral advice, Weber asserted that “it was held to be an absolute duty to consider oneself chosen, and to combat all doubts as temptations of the devil, since lack of self-confidence is the result of insufficient faith,” but “in order to attain that self-confidence intense worldly activity is recommended as the most suitable means” (Weber 2001, 66-67). Consequently, attaining self-confidence in the reception of grace appears to be the main force behind the productiveness driven by the Protestant Ethic. This mechanism becomes the basis of Weber’s Economic Rationalism and of the utilitarian character he attributes to Calvin’s doctrines, as Weber sees them assimilated by Calvinism.⁴¹

⁴⁰ In the second volume of *Economy and Society*, Weber defines “certitudo salutis” as an indication of belonging to the elect (Weber 1978, 1198–1199).

⁴¹ MacKinnon attributes the durability of Weber’s Thesis “to the discipline’s failure to question the theological assumptions Weber makes on behalf of seventeenth-century Calvinism. This is both a surprising and a critical omission since the efficacy of the thesis itself is most significantly anchored on the causal adequacy of religious ideas. By Weber’s account the locus of this adequacy rests upon seventeenth-century dogmatic Calvinism retaining Calvin’s absolute conception of predestination which arbitrarily withholds knowledge of salvation” (MacKinnon 1988a, 143). Given these considerations, MacKinnon observes that “the Protestant ethic has been and remains the source of considerable misunderstanding, some of which can be attributed to Weber himself... Weber’s distinction between the ‘religious system’ (Calvin) and ‘religious practice’ (Calvinism) establishes the initial framework” (MacKinnon 1988a, 145). MacKinnon holds that “when Weber uses the term; ‘Calvinism,’ it is meant in the double sense sketched above: dog-

The psychological sanctions that derive from the conjunction of the belief of Predestination with the anxiety of demonstrating “certitudo salutis” are for Weber the main causal mechanism underlying the Protestant Ethic’s developmental effect. From this behavioral dimension, Weber considers the Protestant belief of Predestination “as the dogmatic background of the Puritan morality in the sense of methodologically rationalized ethical conduct” (Weber 2001, 77). As he concludes, “only in so far as these sanctions work, and, above all, in the direction in which they work, which is very often different from the doctrine of the theologians, does such an ethic gain an independent influence on the conduct of life and thus on the economic order” (Weber 2001, 145, footnote 12). For Weber, these psychological sanctions affect reasoning and decision making through increases in mental concentration and self control. Weber observes that workers with a Protestant background have “the ability of mental concentration, as well as the absolutely essential feeling of obligation to one’s job.” These attributes are most often combined “with a strict economy which calculates the possibility of high earnings, and a cool self-control and frugality which enormously increase performance” (Weber 2001, 26).

In addition to Predestination, Weber also focused on the Protestant belief of Calling, which he found to share in the same psychological sanctions affecting decision making and economic preferences. This is the sense in which he first considered Calling as characteristic of the Protestant conception of the division of labor. Weber drew this view from Baxter’s understanding of Calling as the basis for quantitative and qualitative improvements in production,⁴² which he also found more superficially expressed in Benjamin Franklin’s pamphlets.⁴³ According to We-

matic sola fide and the interdiction of means on the one hand, coincident with pastoral writing and the use of means in a mundane calling on the other” (MacKinnon 1988a, 146). Thus, MacKinnon concludes that in *The Protestant Ethic*, “Weber uses ‘Calvinism’ in connection with both dogma and pastoral work, though each stands upon dissonant principles” (MacKinnon 1988a, footnote 17).

⁴² In Baxter’s view, “outside of a well-marked calling the accomplishments of a man are only casual and irregular, and he spends more time in idleness than at work” Cited by Weber (2001, 107).

⁴³ Weber focuses on the superficial manifestations of Calling in the passages of Benjamin Franklin’s “Necessary Hints to Those that would Be Rich” and “Advice to a Young Tradesman.” Weber uses this source to support his conclusion that “the earning of money within the modern economic order is, so long as it is done legally, the result and the expres-

ber, “the emphasis on the ascetic importance of a fixed calling provided an ethical justification of the modern specialized division of labour,” which in turn, he deemed critical “to influence the development of a capitalistic way of life” (Weber 2001, 109-111). The Protestant conception of faithful labor as pleasing to God, was also for Weber “the force which was alone decisive for its effectiveness: the psychological sanction of it through the conception of this labour as a calling” (Weber 2001, 121). Thus, labor has an important place in Weber’s mechanism as the most relevant manifestation of the economic developmental effects of Protestantism. The need to perform one’s duty within the Protestant belief of Calling is what for Weber differentiates a modern capitalistic activity from economic manifestations of the lowest sort of avarice and unscrupulousness.

44

Although recognizing the importance that Predestination and Calling have for explaining increased levels of economic development, Weber confined himself to the study of cursory manifestations of these beliefs. Weber acknowledged to be merely concerned “with what, from a religious point of view, are often quite superficial and unrefined aspects of religious life, but which, and precisely because they were superficial and unrefined, have often influenced outward behavior most profoundly” (Weber 2001, 132, footnote 1). More specifically, Weber was interested in “the influence of those psychological sanctions, which, originating in religious belief and the practice of religion, gave a direction to practical conduct and held the individual to it” (Weber

sion of virtue and proficiency in a calling; and this virtue and proficiency are, as it is now not difficult to see, the real Alpha and Omega of Franklin’s ethic” (Weber 2001, 19). This coincides with the critiques Weber received for his superficial treatment of Calvinist doctrine from Eisenstadt (1968), Hyma (1951; 1965), Kolko (1959; 1961), and Little (1984).

⁴⁴ For Weber, the impulse to acquisition, pursuit of gain of the greatest possible amount of money, has in itself nothing to do with capitalism. “Unlimited greed for gain is not in the least identical with capitalism, and is still less its spirit.” In general terms, Weber defines capitalistic economic action as “one which rests on the expectation of profit by the utilization of opportunities for exchange.” Nevertheless, he affirms that the Occident has developed “a very different form of capitalism which has appeared nowhere else: the rational capitalistic organization of (formally) free labor.” Among the main distinctive elements of this peculiar form of Western capitalism, Weber enumerates four attributes: First, a “rational industrial organization, attuned to a regular market, and neither to political nor irrationally speculative opportunities for profit.” Second, “the separation of business from the household and rational book-keeping.” Third, reliance on “the calculability of the most important technical factors,” and finally, the presence of “rational structures of law and administration” (Weber 2001, xxxii-xxxviii).

2001, 55). In line with the view of authors like MacKinnon (1988a; 1988b; 1994), the deliberately “superficial and unrefined” treatment of these Protestant beliefs seems to have misled Weber to consider Predestination and Calling, in conjunction with the anxiety related to “certitudo salutis,” as the transformative elements of Protestantism. MacKinnon (1988a) holds that some of the misunderstandings characteristic of the study of the Protestant ethic derived from Weber’s understanding of Calvin. Among the most confusing elements, MacKinnon highlights Weber’s thematic development that buries important observations in footnotes, as the reference to Weber’s “superficial and unrefined” study of Calvin’s *Institutes*.

Instead of Economic Rationalism’s reliance on the belief of Predestination, this dissertation emphasizes the Principle of Christian Freedom, or Law of Liberty in Christ, as the main factor of Palpatational Rationality.⁴⁵ As seen in chapter 4, the deliberately deeper study of Calvin’s *Institutes* of this dissertation emphasizes Calvin’s categorical rejection of any form of anxiety or fear resulting from doubts regarding predestination. From this vantage point, this dissertation presents the foundation of Palpatational Rationality’s decision-making model within the central importance that Calvin assigns to the belief of Christian Freedom. This focus on Calvin’s view of Christian Freedom over predestination constitutes a significant departure from Weber’s Economic Rationalism. Given the foundational influence that Augustine exercised on Calvin, the dissertation evaluates in chapter 3 Augustine’s view regarding the relationship between emotions, reason and will, in order to underscore the alternative notion of “reality of freedom” characteristic of the Principle of Christian Freedom. Next, chapter 4 provides a detailed analysis of Calvin’s *Institutes*

⁴⁵ The importance of this focus on the Principle of Christian Freedom echoes the relevance Tocqueville assigned to the Protestant belief of Christian Freedom within the distinctive element of civic freedom characteristic of the democracy in America. In this account, he affirms that “[i]n America, religion is the road to knowledge, and the observance of the Divine laws leads men to civil freedom.” Tocqueville considered the American combination of liberty and religion as the true distinctive element of the Anglo-American civilization; for as he observed, “liberty regards religion as its companion in all battles and its triumphs, as the cradle of its infancy, and the divine source of its claims. It considers religion as the safeguard of morality, and morality as the best security of law, and the surest pledge of the duration of freedom” (Tocqueville, [1850] 1956, 47-48).

in order to define the relationship between palpation, rationality and freedom underlying the processes and developmental outcomes of the Principle of Christian Freedom.

The treatment of Christian Freedom as the central belief of Calvin's theology is not unique to the present dissertation. As Witte observes, prominent thinkers including Jean-Jacques Rousseau, Charles Bourgeaud, and Walter Köhler have affirmed that role (1996, 359-360). In Rousseau's view, "those who consider Calvin only as a theologian fail to recognize the breadth of his genius. The editing of our wise laws, in which he had a large share, does him as much credit as his *Institutes*. ... [S]o long as the love of country and liberty is not extinct among us, the memory of this great man will be held in reverence" (Rousseau 1968, book 2, chapter 7, p. 44). According to Charles Bourgeaud, Calvin's Geneva constitutes "the first stronghold" of religious and political liberty in modern times.⁴⁶ Walter Köhler described Calvin as the "pioneer of the freedom of conscience and human rights" that were granted constitutional ranking after the French Revolution (Köhler 1904, 579).

Following this same vista, Stevenson presents from a political science perspective similar to this dissertation's view the critical relevance of Christian Freedom for Calvin's system (1999). Stevenson demonstrates that Christian Freedom is a central belief in Calvin's work and the point of intersection of Calvin's political and theological thought. Rather than limiting the participation of believers in public affairs, Calvin's view of Christian Freedom provides a broad base for participation. For Stevenson, Calvin's analysis of Christian Freedom focuses on liberating believers from sin and social customs that hinder their works of love, and that are irrelevant to salvation. According to Stevenson, the understanding of Christian Freedom forms the foundations of modernity's conception of freedom.⁴⁷ Stevenson also stresses Calvin's views regarding the means

⁴⁶ Cited by McNeill (1954, 196).

⁴⁷ According to this threefold perspective, Stevenson emphasizes the means attributed by Calvin to Christian freedom, which resulted in the liberation of believers from the bondage of sin. Christian freedom binds believers more closely to God Himself as the source of their strength. Once freed from the penalty of sin, believers are able to joyfully respond to

through which this belief produces the works of love in the individual that lead their energetic efforts to help the poor and needy. Accordingly, Christians are freed to act for the greater good of society as they obey God's command to love their neighbor as Christ has loved them. Stevenson stresses Calvin's view that Christian Freedom liberates believers from attachment to outward "indifferent things," or "adiaphora," in which believers are freed from customs and traditions not Biblically bound chronologically or geographically. Based on their freedom from cultural and historical customs, the renewed believer is empowered to challenge the unjust status quo within Calvin's view that considers political and social institutions as a means for maintaining God's order (Stevenson 1999).

As in the case of Stevenson, Witte also observes that Calvin's thoughts resulted in profound and lasting contributions to the Western legal and political tradition of religious liberty (1996, 400). Witte holds that Calvin furthered in Geneva, Western Europe and North America the cause of liberty of the individual conscience from intrusive canonical laws and clerical controls. In Witte's view, Calvin's theory of the Christian conscience "provided the cornerstone for the constitutional protections of liberty of conscience and free exercise of religion advocated by later Protestants in France, Holland, England, Scotland, and America." Regarding Calvin's theory of moral laws and duties, Witte observes that they "inspired a whole range of natural law and natural rights theories, directed, among other things, to the protection of religious liberty." Similar to the horizontal and non-hierarchical nature that this dissertation assigns to the Protestant Church, Witte holds that Calvin's "theory of the Congregationalist church polity broke the power of synodical and episcopal centralization, and eventually was used to support concepts of confessional pluralism." Moreover, Witte states that Calvin's "theory of a coequal and cooperative clergy and magistracy provided a strong foundation for later constitutional protections of both separationism and

God in gratitude by obeying His commands. Calvin's view follows the same line of Luther's perspective presented in his treatise *Two Kinds of Righteousness* (Luther 1955).

accommodationism.” Finally, Witte maintains that Calvin’s “theory of the moral responsibilities of both church and state to the community lies at the heart of modern theories of social pluralism and civic republicanism” (Witte 1996, 400).

Witte affirms that perhaps the most important contributions of Calvin’s notion of Christian Freedom were the assimilation of the rule of law, democratic process, and respect for liberty within the church similar to the view espoused by this dissertation in chapter 4. From Witte’s perspective, Calvin devised “laws that defined the church’s doctrines and disciplinary standards, the rights and duties of their officers and parishioners, the procedures for legislation and adjudication.” As a result of the intense ecclesiastical exercise of the rule of law, “the church was thereby protected from the intrusions of state law and sinful vicissitudes of their members.” Witte emphasizes the respect that Calvin urged for the democratic process within the church: “pastors, elders, teachers, and deacons were to be elected to their offices by the congregation.” Regarding Calvin’s view on the respect for the believers’ liberty within the church, Witte stresses elements that this dissertation attributes to the church as school of Christian Freedom.⁴⁸ Thus, Witte concludes that Calvin’s genius is manifested in the integration of these cardinal principles within the church: “the rule of law prevented the democratic principle from promoting a faith swayed by fleeting fashions and public opinions. Individual liberty kept both corporate rule and democratic principles from tyrannizing ecclesiastical minorities. Together, these principles allowed the church to strike a unique perpetual balance between law and liberty, structure and spirit, order and innovation, dogma and adiaphora” (Witte 1996, 402).

Although the integration of Calvin’s view of Christian Freedom within the church did not inoculate the Reformed Church against dissent and schism, Witte notes that it rendered this form

⁴⁸ In this regard, Witte underscores Calvin’s view that “Christian believers were to be free to enter and leave the church, free to partake of the church without fear of bodily coercion and persecution, free to assemble, worship, pray, and partake of the sacraments without fear of political reprisal, free to elect their ministers, elders, deacons, and teachers, free to debate and deliberate matters of faith and discipline, free to pursue discretionary matters of faith, the adiaphora, without undue laws and structures” (Witte 1996, 401).

of ecclesiastic organization “remarkably salient over three centuries in numerous countries and cultures” (Witte 1996, 402). In keeping with the mirroring effect discussed in chapter 4, Witte underscores Calvin’s insight that a similar combination of rule of law, democratic process, and individual liberty might serve the state equally well ... [and] provide the best protection for the liberty of the church and its individual members.” Witte summarizes the enormous political influence that resulted from the ecclesiastical articulation of Calvin’s notion of Christian Freedom when observing that “in the course of the next two centuries, European and American Calvinists wove Calvin’s core insights into the nature of corporate rule into a robust constitutional theory of republican government, which rested on the pillars of the rule of law, democratic processes, and individual liberty” (Witte 1996, 402).

Following the same line of Stevenson and Witte, Douglass (1983) stresses the significance of Christian Freedom as central belief within Calvin’s theological system. Douglass quotes the Reformer’s basic understanding of this institute as “emancipation into freedom through the liberality of God’s work in the incarnation for those who have been oppressed by bondage and wearied by anxiety of conscience” (Douglass 1983, 69). She observes that Christian Freedom formed the focus of Calvin’s serious attention since the first edition of his *Institutes*, in which its sixth chapter was entirely dedicated to issues of freedom in relation to ecclesiastical power and political administration.⁴⁹ Douglass echoes the little understood importance of Christian Freedom to Calvin’s system as indicative of the general misrepresentations of Calvin’s doctrines, which are too often reduced to the simple statement that “Calvin believed in predestination and denied human freedom” (Douglass 1983, 70).

⁴⁹ The fact that Calvin dedicated one-fifth of this first edition to Christian freedom leads Breen to assert that “few people have associated the name Calvin with the idea of liberty. Let them study this great chapter.” Cited by Douglass (1983, 70).

Conversely, Douglass affirms that “it is his [Calvin’s] theology of freedom that has proved enduring, giving rise to new generations of ‘freedom fighters’ in the following centuries” (Douglass 1983, 70-71). Already in the first edition of the *Institutes*, Calvin stressed the importance of the Doctrine of Salvation, which he considered united to the Doctrine of Christian Freedom. In this context, Douglass underscores the importance that Calvin gives to Christian Freedom within the Doctrine of Salvation specifically regarding the deformation of the original freedom into freedom to sin that resulted from the fall. As Douglass observes, Calvin holds that “Christ, through His willing obedience to God conquered the power of evil and liberated sinners from their bondage. ... Those who are called by the eternal will of God, baptized into the death and resurrection of Christ, and through the Spirit receive the gift of faith also experience the gift of a freedom which is at least partially restored” (Douglass 1983, 75).

Regarding the collective manifestations of this freedom that produces renewal at the innermost level of each individual, Douglass cites Calvin’s view that “this restoration or new creation of freedom in the kingdom of Christ, the Christian church, anticipates the final recreation of all things at the end of time. So the church must be reformed according to a biblical vision of this kingdom of freedom. Calvin affirms Augustine’s use of Paul’s words: ‘Now where the Spirit of the Lord is, there is Freedom’ (II Corinthians 3:17)” (Douglass 1983, 75). In this regard, Douglass emphasizes Calvin’s rejection of theologians following William of Occam, who claimed that “natural humanity since the fall, without any special aid of grace, can love God with a perfectly unselfish love above all things.” As the main element in this rejection, Douglass points to Calvin’s concern regarding the anxiety and scrupulosity that the burden of such high expectations produced in the believer. Deriving from this critical pastoral problem, Calvin like Luther and the first generation of reformers edifies upon the foundation of justification by grace alone. As Douglass holds “it is also in this context that we can understand why these reformers all

thought the doctrine of predestination accorded well with Christian Freedom” (Douglass 1983, 78).

In view of this pastoral concern regarding the anxiety related to election, Douglass maintains that the Doctrine of Christian Freedom seemed to Calvin neglected by the Roman Catholic Church of his day. Douglass refers to the anxiety in Catholic believers that resulted from not knowing if all mortal sins have been confessed, or if adequate contrition articulated to ensure forgiveness.⁵⁰ This contrasts with Calvin’s view of justification because “in the context of the Christian life, Calvin believes it is precisely Christian Freedom which should be announced to ease problems of doubt, anxiety, and scrupulosity. Christ’s liberating work should free the Christian from a troubled conscience, from fear, from timorous obedience to ungodly law, and empower the believer by the Spirit to stand courageous against evil” (Douglass 1983, 79). Extrapolating these individual effects of Christian Freedom to the collective realm of social and political interactions, Douglas maintains that “Christian Freedom, as Calvin sees it, is rooted in the freedom of God, expressed in God’s will to recreate humanity through the work of Christ in the incarnation. Christ the liberator has freed fallen humanity from bondage to tyrannical human institutions which usurp God’s sovereignty. Such a great gift, Calvin thinks, should be taught enthusiastically to the people of God” (Douglass 1983, 83).

In line with the importance that other authors assign to Christian Freedom, chapter 4 evaluates the elements of a palpational understanding of this belief in Calvin’s view, which appear to have shaped distinctive collective or aggregated preferences influencing institutional and economic development. With this in mind, this study assesses the effect that Christian Freedom and the Sublime Palpation have on the organization and agential functions of the Reformed Free

⁵⁰ Here, Douglass states that “every forgiven Christian was sooner or later a sinner again, struggling with the need to produce without any special help of grace a totally unselfish love for God and full contrition in order to receive forgiveness” (Douglass 1983, 79).

Church. The term Reformed Free Church, as used in the present work, refers to the essence of the Protestant Church as a return to the non-hierarchical, horizontal and local essence of the early Christian Church manifested in Calvin's thoughts. This contrasts with the relatively higher centralized hierarchical forms of organization characteristic of the Roman Catholic Church as demonstrated above by the evidence of Inglehart's empirical studies. Essentially, this notion of Reformed Free Church alludes to the form of congregation that ensued after Calvin's influence. It is characterized by individuals who have benefitted from the cognitive and volitional changes produced by the sublime understanding of the Principle of Christian Freedom. Hence, the present dissertation suggests the presence of collective manifestations resulting from the decision-making process of Palpatational Rationality in the determination of horizontal, pluralistic and non-hierarchical forms of ecclesiastic and social organizations associated with Calvin's Protestantism. As noted above, this notion of Reformed Free Church seems to follow the form of ecclesiastic government ensuing from Calvin's reaction against the centralized structure of the papacy, and the monarchy, as well as his defense of the right of resistance.⁵¹

Finally, even though labor is an essential factor of economic growth models, the present thesis diverges from Weber's view that considers labor as the main indicator of Protestantism's developmental effect. Instead, the present work focuses on levels of scientific and technological attainment as more relevant indicators to describe the effect the Sublime Palpation of Christian Freedom has on decision making and on developmental preferences.⁵² The cognitive and volition-

⁵¹ The notion of Free Church used in this study is substantially different in terms of its theological basis, origins, and geographical dispersion to the ecclesiastic organization characteristic of Pentecostalism. Instead, the notion of Free Church described here focuses on the structure and organization of the Protestant church that followed Calvin's imprint, which is more characteristic of the cultural inheritance of North European and North American countries, as the work of Inglehart et al. shows. According to this empirical evidence, Pentecostalism has not produced similar effects in Latin America than those Inglehart attributes to countries influenced by the Calvinist Protestant tradition, particularly those affecting the formation of behaviors associated with economic development (Inglehart and Baker 2000, 37-38). Although an interesting area of research, the exploration of these differences is beyond the scope of this dissertation.

⁵² This view is in line with the current direction of economic growth models assigning preeminence to technology in the understanding of the most relevant factors of economic development. Given this new direction, Robert Solow (1956) showed that capital accumulation is not a central factor within the growth equation. This is the understanding

al effects that these factors have on reasoning and decision making are determinants of the level of mental concentration and self-control that Weber attributes instead to Calling and the feeling of duty. As described in detail in chapter 5, this path underscores the effect the Principle of Christian Freedom and the Sublime Palpation produce in progressively overcoming the distortive effects of innate basic emotions like pleasure and fear on the perception of the value and probability of outcomes.

In the context of the refutation of Economic Rationalism's main theoretical foundations, this dissertation provides a historical assessment of technology as the most relevant indicator of the model of Palpational Rationality. Chapter 3 examines the case of Reformed Christian scientists to underscore the unique effects that the assimilation of Palpational Rationality had on the Scientific Revolution. Particularly, chapter 3 describes the substantial effect of the Sublime Palpation of Christian Freedom on alternative forms of inquiry into the physical world, and their impact on the Scientific Revolution. This most important historical analysis of the application of Palpational Rationality further illustrates the essence of the decision-making model proposed in the present work for the design and implementation of complex public policies.

1.4 Palpational Rationality as the Model of Decision Making of the Protestant Ethic of Development

The object of inquiry of this dissertation coincides with the resurgence of theories of human development based on Weber's thesis, which underscores the effect of cultural factors like Protestant beliefs on development. This analysis also coincides with increasing efforts to provide an alternative theoretical framework to address the limits of macro-level approaches, and inte-

that characterizes the so-called "new growth economics theorists," which is characteristic of authors like Robert Lucas (2002) and Dale Jorgenson (1998; 1999). More recent models of growth equations have emphasized technology as the driving force of growth, measuring it in terms of levels of research and development. This is the case of Paul Romer's model (1983; 1990), which has been followed by the growth models of Grossman and Helpman (1991), and Agion and Howitt (1992).

grate new micro-level methodologies better equipped to assess this association. In the context of Weber's theoretical template on the relationship between Protestant belief, related emotions and reasoning, the main objective of this work is to provide an alternative decision-making model better suited to design and implement complex public policies focused on poverty alleviation and development.

The present work does not primarily focus on the association between Protestantism and the dependent variable of developmental outcomes, which have been established from macro-level empirical studies, as shown above. Instead, this dissertation undertakes a micro-level analysis of the mechanisms and paths through which the assimilation of the Protestant belief of Christian Freedom, in conjunction with the emotion of the Sublime Palpation, can affect decision-making processes associated with high levels of human development. The concept of "human development" used here refers to the integral notion of increase in Subjective Well-being (SWB) of an individual. As already described above, this conforms with Sen (1999), who observes that in many societies people value free choice as dearly as they value economic security, and with the main tenets of the theory of human development proposed by Welzel (2003) and Inglehart (2005). From this vantage, general conditions of subjective well-being are evaluated not from the strict terms of increases in the level of economic outcome per capita, or economic growth, but rather from the incorporation of normalized measures of life expectancy, literacy, educational attainment, as well as individual, political and economic freedom.⁵³ Likewise, the present dissertation evaluates the importance that the assimilation of the Principle of Christian Freedom can have for the formation of developmental preferences reflected in the organization of the Free Church, as well as in other social and political institutions. Accordingly, the notion of Free

⁵³ This concept of "human development" coincides with normalized indicators such as the Human Development Index (HDI) used by the United Nations Development Program (UNDP), and Human Freedom Indicators developed by Freedom House and the Heritage Foundation.

Church is treated in this work as an external institutional manifestation but not as an individual-level factor, for this effect is here only attributed to the assimilation of the Principle of Christian Freedom.

The main methodological question of the present work does not focus on the assessment of the developmental effects of Protestant beliefs, or dependent variable, but rather on *how* Protestantism affects behavioral factors that determine social, institutional and economic preferences fundamental to development. The thesis presented in this study proposes that the assimilation of the belief at the core of the Principle of Christian Freedom, and the emotion of the Sublime Palpation associated with it, affect processes of reasoning, decision making and execution of complex choices in moral and social situations. These cognitive and volitional effects seem to determine preferences indispensable to social, political and economic development. From its micro-level multidisciplinary perspective, this study evaluates the associations that have been empirically suggested through macro-level statistical studies conducted from Weber's time to the present. The decision-making model of Palpational Rationality integrates analyses of specific beliefs in Calvin's *Institutes* with findings and concepts drawn from philosophy, neurobiology and the behavioral sciences with those put forth in political science, public policy and economics.

In line with this integrative approach, this study assesses the most recent empirical evidence from neuroscience regarding the effect emotions and beliefs seem to have on reasoning and decision making. This neurobiological dimension completes the essential elements of the theoretical framework defined as the main objective of this dissertation. Accordingly, chapter 6 evaluates the enslaving effects of emotions and feelings from the perspective of recent neurobiological evidence of lesions to ventromedial prefrontal regions of the brain. Historical and clinical cases of focal brain damage are described to underscore the relationship between feelings and beliefs on reasoning and decision making. Chapter 6 also assesses the merits of recent hypotheses developed

to understand the neurobiological effects that feelings can have on decision making as somatic markers.⁵⁴ The future directions of the current research are also delimited in chapter 6, especially the evaluation of the neurobiological underpinnings characteristic of Palpatational Rationality. Within this framework, the current study proposes Palpatational Rationality's "Supra-Somatic Marker Hypothesis," which encompasses the neurobiological basis of the liberating effect that the Principle of Christian Freedom and Sublime Palpation can have on reasoning and decision making.

In sum, preserving the same template Weber used to evaluate the relationship between Calvinist Protestant beliefs, emotions, and the formation of developmental preferences, the present research uses an alternative approach that reveals different factors within a wider scope of developmental effects. In this regard, instead of the effect Weber attributed to the belief of Predestination and Calling, the present study focuses on the Principle of Christian Freedom. Contrary to Weber's treatment of anxiety arising from "certitudo salutis," this study underscores the effect of the Sublime Palpation, by providing an alternative to Weber's mechanism as working through the psychological sanctions imposed by these beliefs and emotions on behavior. This path is contrasted with the cognitive and volitional effect that the Principle of Christian Freedom and the Sublime Palpation can produce in overcoming the distortive effects of innate basic emotions like lust and fear. Thereby, the alternative determinants described by Palpatational Rationality underscore the micro-level and multifaceted dimension of changes in processes of reasoning, decision making and implementation of optimal choices in complex social and moral situations. Deriving from these cognitive changes are individual developmental preferences that can affect the integral

⁵⁴ In Damasio's view, somatic markers are feelings about the body states that make certain images more salient than others during decision making; in this manner, they assist the process of sifting through all possible options by selectively highlighting certain images over others. Somatic markers correspond to biological mechanisms that covertly or overtly aid the pre-selection of options, rather than applying reason to all possible choices. They appear to facilitate the complex processes of social and moral decision making because as Damasio observes, "biological drives and the automated somatic-marker mechanism that relies on them are essential for some rational behaviors, especially in the personal and social dimensions" (Damasio 2005, 173-189, 192).

dimension of human development as well as the collective dimension of horizontally and pluralistically structured social and civic organizations. In this context, the current dissertation aims to provide a more comprehensive and realistic decision-making model in tune with the complex choices decision makers face in the design and implementation of public policies for social, political and economic development.

2 Theoretical Foundations of Economic Rationalism and Palpational Rationality

One of the most distinctive features of Weber's Economic Rationalism remains the economic developmental effect attributed to his interpretation of Calvin's view on the belief of Predestination conjoined with the anxiety of not knowing if one is among the elect. Weber considers the "intrinsic character" of this belief as influencing economic behavioral changes more than external "historico-political situations." He observed that "an extraordinary capitalistic business sense is combined in the same persons and groups with the most intensive forms of a piety which penetrates and dominates their whole lives. ... Especially Calvinism, whenever it has appeared, has shown this combination" (2001, 9). The effect that Predestination and anxiety have on decision making forms the core of Weber's notion of the "Spirit of Capitalism." As he expressly asserts, "the question of the motive forces in the expansion of modern capitalism is not in the first instance a question of the origin of the capital sums which were available for capitalistic uses, but, above all, of the development of the spirit of capitalism. Where it appears and is able to work itself out, it produces its own capital and monetary supplies as the means to its ends, but the reverse is not true" (Weber 2001, 31). Accordingly, Weber affirms the essential imprint that Protestant beliefs and emotions have on the formation of individual traits conducive to increased levels of social, institutional and economic development.

The present chapter analyzes the theoretical framework that most influenced Weber's template regarding the effects of belief and emotion on reasoning and decision making. This part of the dissertation studies the foundations underlying the notion of human rationality that forms the basis of Weber's model of Economic Rationalism, particularly from the perspective of the main effects that Predestination and anxiety have on the formation of developmental preferences. In order to assess the core of Weber's relationship between belief, emotion and reasoning charac-

teristic of Economic Rationalism, this dissertation provides an analysis of the main works of David Hume, who distinguished himself for discussing in detail a similar form of rationalism profoundly influenced by beliefs and emotions. The study of Hume's seminal cognitive system comprises the assessment of its main theoretical foundations concerning the assumption of infiniteness of the universal chain of causation and of emotions as a closed system of perceptions. In addition to critiquing these assumptions, this dissertation addresses Hume's influence on Kant's notion of the "illusion of freedom" and its lasting imprint on Weber's view of Economic Rationalism. Through these critiques, this analysis suggests a modification of Weber's template of Economic Rationalism to emphasize the alternative foundations of Palpational Rationality in the finiteness of the universal chain of causation and of emotions as an open system of impressions.

2.1 Freedom, Reasoning, Decision Making and Mental Motions

Staying within the same template that Weber originally used in his cognitive model, this dissertation focuses on the effects determined by the interaction of emotions and Protestant beliefs on reasoning and decision making. As explained in chapter 1, this work highlights the effects of the Protestant Principle of Christian Freedom instead of Predestination, and emphasizes the liberating effect of the Sublime Palpation of God's love in Christ's redemptive ministry, in lieu of the anxiety associated with "certitudo salutis."⁵⁵ To assess the modifications of Palpational Rationality on Weber's general template, it is necessary to define the main differences between the notions of reasoning and decision making, as well as the concepts of emotions, feelings and palpations.

Palpational Rationality modifies Weber's choice of Predestination and anxiety in Economic Rationalism by introducing the liberating effect of perceiving God's love for humanity

⁵⁵ In the second volume of *Economy and Society*, Weber defines "certitudo salutis" as an indication of belonging to the elect (Weber 1978, 1198–1199).

found in Christ's redemptive ministry. At the innermost level of this psychological transformation, the dissertation stresses the liberating effect that the Principle of Christian Freedom has on innate feelings and emotions. Instead of Weber's "psychological sanctions" determined by the doubt of not knowing if one is among the elect, Palpational Rationality asserts the liberating effect resulting from the perception or the "palpation" of specific images of God's love through Christ's ministry. By invoking a different path, Palpational Rationality also underscores this liberating effect on reasoning, decision making, and on the formation of developmental preferences.

The underlying essence that Palpational Rationality attributes to the notion of Christian Freedom within Weber's cognitive template manifests itself in the very etymology of the word "freedom." The root of the substantive "freedom" derives from the addition of the suffix "dom" (denoting state or condition) to the adjective "free" that renders the meaning of freedom as "the condition of the one who is free."⁵⁶ The primary sense of its Teutonic roots assigns to freedom the notions of "beloved" or "friend" because these terms were generally applied to the free members of the clan in opposition to slaves (Klein 1971, 295). Hence, in its etymological root, freedom refers to the condition of one "who is loved"; the same meaning that Palpational Rationality ascribes to the liberating effect of the Principle of Christian Freedom on individuals. As in the case of its Teutonic root, being "free" corresponds to being "loved" in the particular sense that Palpational Rationality highlights the association between Christian Freedom and the Sublime Palpation of God's love for the human race.

⁵⁶ The adjective "free" derives from the Middle English "freo, fre," and this from the Old English "freo, fri" that proceed from the Old Saxon, Old High German, and Middle High German "vri." This Teutonic root is also present in the German "frei," the Dutch "vrij," and the Gothic "freis," which as in the case of the English form, are all cognates with the Old Indian "priyáh," meaning "own, dear, beloved." In this particular sense, the common Indian root is found in the Old English "freogan" or "freon," and the Gothic "frijon," meaning "to love." Equally interesting, this allusion of freedom as "to love" is present in the Old English "freo" and Old Saxon "fri" for "wife," found in the adjectival root of "freo-dom" (Klein 1971, 295).

Accordingly, the main modification of Palpatonal Rationality integrates this Sublime Palpation as high mental motion⁵⁷ or impression affecting the process of reasoning and decision making that results in the state of mind and will distinctive of the Christian Freedom. This contrasts with the effects on reasoning and decision making that Economic Rationalism attributes to the anxiety associated with “certitudo salutis.” Before defining Palpatonal Rationality’s high form of mental motion, it is beneficial to compare the differences between the processes of reasoning and decision making that it affects.

Although commonly equated with decision making, the etymology of reasoning stresses the notion of closely concatenating concepts, ideas or images.⁵⁸ The form of the Latin and Germanic roots reveals that both are cognates with the Indo-European “ar-, are-, re, r^e,” meaning “to join, or to fix.” The original meaning of its Greek root remains in, for instance “ῥα-ῥοσχεῖν,” signifying “to join closely together” (Klein 1971, 620, 50). In all these forms, two main elements are deliberately left out of the ancestral notion of reason: the motion that determines the sequence of elements conjoined, as well as the different nature and form of the resulting concatenations. Conversely, the term “deciding” derives from the Latin “decidere,” meaning “to determine, to settle.” It results from the addition of the prefix “de” meaning “from, or off,” to the verb “cadere” that signifies “to cut, to hew, or to lop” (Klein 1971, 194).⁵⁹ As in the case of reasoning, the etymology of the word “deciding” omits the main factor that “moves” the agent to separate, or “cut off,” a link from a chain, as it additionally ignores the “motion” that makes the agent detach a

⁵⁷ The noun “motion” derives from the Middle English “mociun” and this from the Latin “motion-, motio” for “movement” that results from the Latin verb “movere” or “to move.” In the particular meaning used in this work, “motion” refers to “an impulse or inclination of the mind or the will” (Merriam-Webster Inc. 2005, 810).

⁵⁸ This is the sense in which it derives from the old French “raison,” and this from the Latin “rationem,” signifying “reckoning, calculation, matter, affair or relation.” In turn, this Latin form is based in “ratus,” the past participle of “reor, reri,” which means “to reckon, believe, think.” In the case of its Germanic roots, reasoning relates to the Gothic “rapjo” also meaning “reckoning, account, number,” which derives from “ga-rapjan,” “to reckon, count.” Hence, its reception in the Old Saxon “rethia,” the Old Frisian “rethe,” and Old High German “redia,” all meaning to “account” (Klein 1971, 620).

⁵⁹ This is the sense in which “cadere” is found in the Latin word for cement, or “caementum” that results from the conjunction of “caid,” for “cut,” with “mentom,” or “stone chippings,” meaning “the chips that have been cut off from a rock” (Klein 1971, 194).

particular link with respect to all others. Given these etymologies, the notions of reasoning and deciding suggest two different mental actions exercised upon the very same mental elements. Reasoning implies the act of closely joining together ideas or images as arms to the body. Conversely, deciding means to separate or “cut off” these ideas from the thought chain that previously “conjoined” them. Thus, reasoning and deciding allude to two different yet complementary mental processes.

The factors that conjoin or separate ideas from their respective chains of thoughts correspond to the mental motions called emotions, feelings and palpations. Etymologically, the word “emotion” derives from the French “émouvoir,” meaning “to stir up a passion, to affect, to touch.” Its original definition coincides more with the translation “to set in motion,” because of its close relationship with the French “mouvoir,” meaning “to move.”⁶⁰ Accordingly, here emotion evokes the idea of movement, but with a brusque, sudden connotation, even agitation or forcibleness. Differently, “feeling” refers to the impression perceived by the body senses from a preceding conscious motion, as the one that arouses when “softly striking” or playing a stringed instrument.⁶¹ Finally, “palpation” refers to “to touching someone softly in a loving and caring manner.”⁶² Generally, palpation evokes the sensing of the innermost parts of the body that physicians perform with their hands to diagnose a disease for the purpose of healing. It also refers to the perception of this healing touch by the sick person.

⁶⁰ The verbal root of this noun derives from the Vulgar Latin form “ex-movere” that corresponds to the Latin “emovere,” signifying “to move out,” “to move away,” “to stir up,” or “to agitate.” Here, the Latin preposition “ex” means “out of, from,” while the Latin verb “movere” means “to move,” or “to set in motion,” a probable cognate with the Old Indian “mivati” for “pushes,” or “moves” (Klein 1971, 245).

⁶¹ The Teutonic roots of the word “feeling” are most probably cognates with the Indo-European base word “(s)phel-,” or “(s)phal-,” signifying “to strike softly.” From this root also derives the Greek “ψαλλειν,” meaning “to pluck, twitch the harp, play on a stringed instrument,” and “ψαλλμ|π” signifying the “plucking, or twitching of the harp” (Klein 1971, 263).

⁶² The term “palpation” derives from the Latin verb “palpare,” meaning “to touch softly, stroke,” whence the English “palpation,” which evokes the notion of movement but in a loving and gracious manner (Klein 1971, 276). In its medical use, palpation means “to examine by touch” (Merriam-Webster Inc. 2005, 893).

The meaning of the word “palpation” as sensing of the healer’s hand constitutes a form of impression that differs from the nature of the other two mental motions. Palpations allude to serene and overpowering impressions able to dominate the agitation and violence produced by the emotions of a decaying human nature. From this vantage point, it resembles the alleviation that the healing hand of the physician brings to the sick person from the suffering inflicted by the diseases of the body. Regarding feelings, palpations also have a comforting nature but of a different source and magnitude. Instead of the temporary perception that results from the individual’s conscious actions, as in the playing of the harp, palpations allude to the lasting perception of the healing produced from an exogenous action, as in the case of the physician’s healing touch. Thus, the exogenous source and the healing nature associated with palpations constitute the fundamental difference of this form of impressions with respect to emotions and feelings, and with respect to their different effects on reasoning and decision making.

The preceding three forms of mental motions can be placed in a continuum along limits referring to their source in conscious or unconscious actions of the self. This constitutes the main criterion employed in this work to distinguish between somatic and meta-somatic mental motions or impressions.⁶³ “Somatic motions” allude to those impressions rooted in body states, while the meta-somatic refer to those impressions whose source transcends body-state images. The somatic limit is, thereby, dominated by emotions forcefully determined by images of body states. The middle of the continuum corresponds to feelings as impressions generated by the integration of images from body states and images from the mind. Finally, palpations refer to the meta-somatic perceptions that transcend images of body states and the mind.

⁶³ The term “somatic” derives from the Greek σῶματικόν signifying “what relates or affects the body” also from the Greek for body σῶμα. Meta-somatic results from adding to the same root the prefix “meta” that derives from the Greek μετά, meaning “beyond or transcending” (Klein 1971).

According to their different nature and origin, these three forms of impressions have dissimilar effects on complex reasoning and decision-making processes, as shown by the most recent neurobehavioral evidence described in chapter 6. This evidence suggests the unique human capability to perceive meta-somatic impressions differently from animals with similar complex neural systems.⁶⁴ This capability has currently emerged as one of the distinctive elements of the human brain in comparison with other similarly complex neural structures. It corresponds to the human capability to perceive impressions related to the sense of the self and of personal identity, as well as the meta-self. From this perspective, Damasio discusses the differences among emotions as images triggering changes in body states, feelings as images formed from such body state changes, and meta-images as impressions playing an important role in the process of decision making and self identity (2005). The meta-somatic images constitute the form of subjectivity that is distinctive only of human experience. As chapter 6 describes in detail, emotions and feelings are thought to be the somatic components of the neural basis of the self, while meta-somatic images correspond to the meta-somatic neural basis of the self, or what Damasio calls the “meta-self” (2005, 241).⁶⁵

2.2 Differences between the Theoretical Foundations of Economic Rationalism and Palpational Rationality

Palpational Rationality departs from important theoretical elements present in the systems of Hume and Kant that seem to have influenced the main template of Weber’s Economic Ration-

⁶⁴ As Northcutt observes regarding the Aristotelian assumption of “scala naturae,” (nature’s ladder) it was assumed that “all vertebrates and invertebrates could be arranged on a linear series, with man at the top” (Miller 2009, 26). Today, most researchers agree that equally complex but anatomically different brains are found in birds, mammals and other animal lineages. Nevertheless, the enduring question of what makes the human brain so different from other equally complex brains persists (Miller 2009, 26).

⁶⁵ As shown in chapter 6, Damasio found that the neural basis of the self resides with the continuous reactivation of two somatic-based representations: first, the combination of memories of the past and of the planned future that define a human being’s identity. Second, the representations of the individual’s body states both in what they have previously been and of what they currently are (Damasio 2005, 239). In this manner, the state of the self is continuously and consistently reconstructed as a result of the successive perception of somatosensory images, primary emotions, secondary emotions, feelings and background feelings as well as non-body sensory signals (Damasio 2005, 240).

alism. Palpatational Rationality abandons the assumption of infiniteness of the universal chain of causation that Hume and Kant followed, as well as Hume's assumption of emotions as a closed set of impressions. This dissertation critiques these two theoretical foundations to explain the modifications to the template of Weber's Economic Rationalism, and to define an alternative view of human nature, freedom and reason. This work modifies Weber's template by substituting the Principle of Christian Freedom and the Sublime Palpation in place of Predestination and anxiety. It also modifies the template's theoretical foundations and path used to explain the effect of these factors on decision making and on the formation of developmental preferences.

2.2.1 *Assumption of Finiteness of the Universe and of the Chain of Causation*

The first theoretical foundation that this dissertation finds underlying the model of Economic Rationalism derives from Hume's assumption of infiniteness that forms the basis of his *Treatise of Human Nature*.⁶⁶ Hume considered the universe's first cause as an "a-priori" proposition impossible to be grasped by reason; a similar perspective found in Kant's *Critique of Pure Reason*.⁶⁷ Interestingly, at the core of Hume's influential view lies the impact that the invention of both the telescope and microscope had on scientific inquiry. Hume adopted the assumption of infiniteness based on the enhanced capability of these instruments to observe parts of a totality otherwise imperceptible to the naked eye (Hume 1978, 27). The difference between "reality" and "appearance" magnified by these instruments led Hume to assert his main principles supporting the assumption of infinity: first, that whatever is susceptible to be divided "ad infinitum must consist of an infinite number of parts;" Second, that it is impossible to set bounds to the number

⁶⁶ The version of *Treatise of Human Nature* used here corresponds to the second edition of Hume's work, edited by L. A. Selby-Bigge and P. H. Nidditch, Oxford University Press.

⁶⁷ The translation of the *Critique of Pure Reason* used here is the classical work by Norman Kemp Smith, who integrated the 1781 and 1787 versions that Kant wrote. The paginations of both versions are used: A refers to the first edition and B to the second.

of parts without setting bounds to the division.⁶⁸ Hume derived this assumption of infiniteness from Aristotelian cosmology,⁶⁹ which focused not on the evidence concerning the existence of the universe's infiniteness but on the capacity of the mind to understand this idea.⁷⁰ Thus, the invention of the telescope and microscope supported Hume's intuition of the universe's infiniteness according to the aid these instruments provide to observe parts of the physical world previously imperceptible to the human eye. Given these considerations, Hume validated the assumption of an infinite universe formed by a conjectured "infinite" number of further divisible parts (Hume 1978, 29). As described in the next chapter, recent findings of the natural sciences have exposed the fallacy of supposing that because one could progressively observe further divisible parts, the universe lacks any limits. With this assumption of infiniteness, Hume fell prey to the very error that he warned against in his exposition of the principle of causality: to make by reason a causal inference between two objects that must be established only by experience (Hume 1978, 90-91).

In the *Dialogues Concerning Natural Religion*, Hume highlights the underlying assumption of infiniteness in the agreement between the skeptic Philo, the philosopher Cleanthes, and the religiously orthodox Demea regarding the unintelligibility of the universe's origins.⁷¹ This admis-

⁶⁸ The core of Hume's assumption of infiniteness derives from the postulation of the universe's infinite divisibility: "'tis universally allow'd that the capacity of the mind is limited, and can never attain a full and adequate conception of infinity... 'Tis also obvious, that whatever is capable of being divided in infinitum, must consist of an infinite number of parts, and that 'tis impossible to set any bounds to the number of parts, without setting bounds at the same time to the division" (Hume 1978, 27).

⁶⁹ Chapter 3 provides a detailed explanation of Aristotelian cosmology in the context of Luther's revolutionary rejection of Aristotle's philosophical system. In his *Disputatio Contra Scholastica Theologiam* (Disputation Against Scholastic Theology) (1955; 2000), Luther exposed the inabilities of syllogistic logic of a-priori argumentation as a means to know the universe. In addition, chapter 3 shows how Luther's rejection formed the basis of Galileo's departure from Aristotelian cosmology. These rejections are described in Galileo's *Dialogues Concerning the Two Chief World Systems, Ptolemaic and Copernican* (Galilei 1967, 268) and in the first part of his work *Discourses and Mathematical Demonstrations Concerning Two New Sciences* (Galilei 1963, 47-146).

⁷⁰ Hume considers absurd the supposition that "a finite extension contains an infinite numbers of parts," and from the same observation on which he relied to infer the infiniteness of space, he also derives that of time, for "the infinite divisibility of space implies that of time" (Hume 1978, 29, 31).

⁷¹ Months before his death in August 25, 1776, Hume made the final revisions of his *Dialogues Concerning Natural Religion*, which, according to his will, were not published until 1779 to avoid charges of atheism. In a sense, the *Dialogues* reflect a moderation of Hume's vehement skepticism revealed in the *Treatise*, which he repudiates as a "juvenile" work; an advertisement to be affixed to all copies of the second volume of the *Essays and Treatises* (Hume 2007, xliii). The conception of an infinite universe as the basic assumption for the understanding of human nature forms the core of the *Dialogues*. In this work, he expounds through a conversation between three characters the life-long medita-

sion reflects Hume's view discounting experience as the means to validate the origins of the worlds, and to prove from reason what is utterly contrary to common sense (Hume 2007, [150], 26). Instead, Hume argues for the "a-posteriori" nature of the universe's infiniteness according to his assumption that "matter is, and always has been in continual agitation." This constitutes also the basis of Demea's realization that "the whole eternal chain or succession, taken together is not determined or caused by anything" (Hume 2007, [183], 59, [188], 64). Thus, even in the case of his most religiously orthodox view, Hume considers only valid the "a posteriori" confirmation of the existence of an infinite universe; deeming any "a priori" argument of a first cause as absurd, or contrary to common sense.

Hume's underlying assumption of infiniteness influenced Kant's notion of the "Cosmological Argument" that regards the universal chain of causation as the series that ascends from the conditioned of appearances to the unconditioned of concepts. In Kant's view, the cosmological proof of these arguments rests upon "a series of appearances and the regress therein according to empirical laws of causality" (Kant 2007, A458, B486).⁷² For Kant, the impossibility to move from empirical to conceptual in the regression of the series derives from the observation that alteration in no way establishes contingency of the type represented in the concepts of pure understanding.

tion of his skeptical, philosophical, and religious approaches to the understanding of causation, the nature of the universe, and the existence of a necessarily absolute Agent. Cleanthes presents the a-posteriori argument regarding the existence of God under the notion of "intelligent design." This character is probably named after Cleanthes of Assos (c. 331- c. 232 B.C.), the second head of the school of Stoicism (Hume 2007, xi). Likely named after Cicero's teacher Philo of Larissa, Hume personalized in this character his most vehement skepticism, assuming important aspects of the argument presented by Pierre Bayle in the influential *Dictionnaire Historique et Critique (Historical and Critical Dictionary)* (Bayle 1995). Finally, the religious orthodoxy that Hume condemns in the understanding of God and the universe, he personalized in the character of Demea, whose name seems to derive from the etymological root of the Greek "demos" for "people," as a means to characterize the vulgar understanding of religion. The text used here of Hume's *Dialogues Concerning Natural Religion* is his original manuscript transcribed by Dorothy Coleman. The numbers in brackets refer to the paragraph numbering of the original, and the following number to the respective page.

⁷² Kant observes that it is not valid to deviate from this form of argument and suddenly pass over to something that is not a part of the series. This sudden deviation from empirical to conceptual in the regression of the series is a "saltus" (jump) that he objects to among philosophers. Thus, says Kant, so far as they obtained an ascending series of empirical conditions they are in the right, "but since they could not find in such a series any first beginning, or any highest member, they passed suddenly from the empirical concept of contingency, and laid hold upon the pure category, which then gave rise to a strictly intelligible series the completeness of which rested on the existence of an absolutely necessary cause" (Kant 2007, A458, B486).

Hence, one cannot assert the existence of the necessary Being similarly conceived in pure intelligible terms (Kant 2007, A460, B488). Alteration proves only empirical contingency, the condition prescribed by the law of causality according to which a new state could never have taken place in itself. Even if this cause were taken as absolutely necessary, it must be met with in time and thus always belongs to the series of appearances. Therefore, Kant follows the same conclusion as Hume regarding the assumption of infiniteness when affirming that “regress in the series of causes (in the sensible world) can never terminate in an empirically unconditioned condition, and that the cosmological argument from the contingency of states of the world, as evidenced by their alterations, does not support the assumption of a first and absolutely originaive cause of the series” (Kant 2007, A458, B486).

The foundation of Hume’s cognitive system lies in the subterfuge of an “a-priori” assumption of infiniteness that has been dismissed by empirical evidence of the modern natural sciences, as we will see in detail later. Differently, Palpatonal Rationality relies on the demonstration of the universe’s finiteness as a matter of external existence with both a beginning and limits. Viewed from this vantage, things in the universe are not thought to be part of an infinite series of causes and effects, as both Hume and Kant assumed, but part of a finite series of causations of a physical world with an origin and limits. As we will see next, this foundation of finiteness has important implications for understanding the nature of emotions and their effects on human behavior and decision making.

2.2.2 *Assumption of Impressions as “Numerus Clausus”*

The second theoretical foundation that this dissertation finds underlying the model of Economic Rationalism derives from Hume’s assumption of human impressions as “*numerus clausus*,” or a closed set of impressions. Hume’s assumption of infiniteness induced the understanding of impressions as the closed set of perceptions that groups only emotions considered in

the function of the self. It refutes the human capability to perceive impressions of meta-somatic sources, keeping in line with a conception of the universe without an Agent and first cause. The assumption of infiniteness in Hume and Kant renders these meta-somatic impressions as categories that human nature cannot perceive. Given these considerations, Hume affirmed that the sources of reflective impressions refer only to the object of the human self, leaving out the understanding of those impressions whose object is the necessary Being, or Agent of the first cause. Hume's closed system led him to accept that whatever is most valuable as a quality of the mind can also be considered as a cause of pride. This assumption moved him to fallaciously conclude that pride's invigorating effect must be acknowledged as the most valuable of all cardinal reflective impressions (Hume 1978, 280).⁷³ Hume's view of the human self as the only point of reference for impressions, and of virtue as what causes pleasure to the self, persuaded him to consider pride as the outcome of virtue, and humility as that of vice. In the context of their common template, Hume assigned to pride and lust, or pleasure-seeking feelings, the highest power to influence reason and decision making, while Weber considered anxiety and fear, or pain-averting feelings, as the most relevant somatic impressions affecting the processes of reasoning and decision making.

The alternative perspective of Palpatational Rationality involves the evidence that modern natural science has recently provided regarding the finiteness of the universal chain of causation. This evidence points instead toward the existence of an open number of causes of impressions, or "numerus apertus" that include those associated with the first cause of a finite universe. In essence, Palpatational Rationality underscores impressions whose source is not limited to the human self, but also includes those related to the self of the absolutely necessary Agent. This view seems to better conform to recent neurobiological findings that suggest a human capability to perceive

⁷³ As a result of this view, Hume considered wit, good sense, learning, courage, justice, and integrity as the "valuable qualities of the mind" that result in pride; while their opposites cause humility (Hume 1978, 279).

meta-somatic impressions. Among these meta-somatic impressions, perhaps the most relevant alludes to those impressions in relation to the self of the necessarily absolute Being within the finite universal chain of causation.

2.3 Hume's Cognitive System as the Template of Economic Rationalism

One of the most important influences that Hume's cognitive system seems to have exercised on Weber refers to the combined effect that Hume assigns to belief and emotion on reason. Hume considers that the liveliness of the object, impressed as highly vivid by a belief, forms the heightening of an idea, which reasoning ad infinitum cannot destroy. This form of unshakable magnification deriving from belief constitutes the cornerstone of an empirical system that Hume considers as sufficient not only for the purpose of philosophy but for all other enterprises of everyday life. In this context, Hume asserts his skepticism regarding reason and the senses: with respect to reason because it cannot establish a relation between cause and effect, and with respect to the senses because perceptions are the only objects with certain existence. Subsequently, Hume affirms that the only conclusions inferable derive from the perceptions of objects, which are different from their relation to causality, and which cannot be asserted either by reason or the senses.

2.3.1 Comparison between Elements of Hume's Template and Palpational Rationality

Hume's cognitive system provides the seminal association between belief, emotion and its effects on reason that this dissertation perceives as the core of Weber's template for his system of Economic Rationalism. Hume's theoretical assumptions determine a system of beliefs and emotions that supports his view of the slavery of reason to passions. Although Hume's model formally resembles the template followed by Palpational Rationality, their divergence is magnified in the outcomes resulting from their different theoretical foundations.

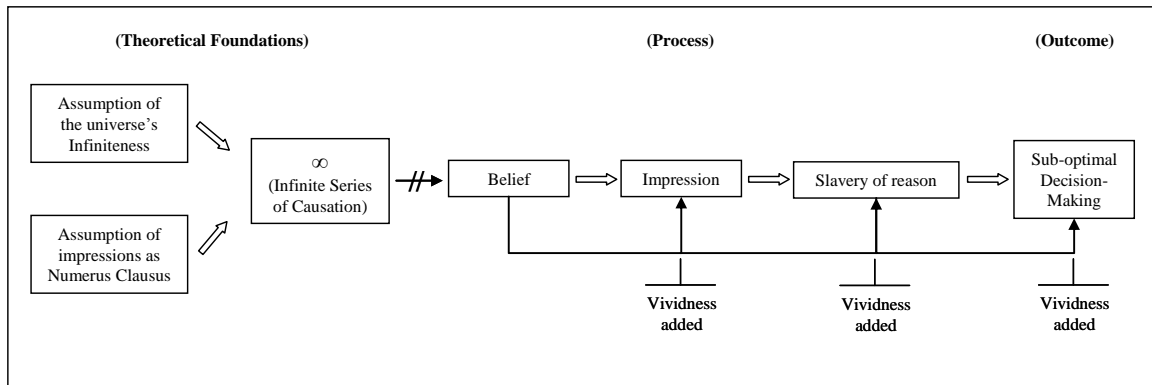


Figure 1. Hume's Cognitive System

As seen in Figure 1, Hume highlights the importance of beliefs as a means to magnify the appearance of objects by adding vividness to one's impressions or emotions. Beliefs are for Hume "a particular manner of forming an idea" through which an impression produces a highly lively idea; that is, "a lively idea related to or associated with a present impression" (Hume 1978, 97, 96). Individuals believe in something when they have a highly vivid idea of an object, in comparison with all other impressions formed from the same object. Beliefs arise not from reason or imagination, for, according to Hume, "we are never conscious of such operation," but solely from a current impression (Hume 1978, 102).⁷⁴ Given this view, Hume attributes to beliefs an important role in the fierce battle for control over certain passions, which he recognizes when concluding that "belief is almost absolutely requisite to the exciting of our passions" (Hume 1978, 120).

Given the progressive reduction of the original probability to estimate the truth of their judgment, Hume argues that the "ad infinitum" examination of this faculty diminishes the force and vigor of the first belief. In consequence, he asserts confidence only in what is based on direct observation of an object as perceived directly by the senses. Accordingly, says Hume, "when I reflect on the natural fallibility of my judgment, I have less confidence in my opinion, than when

⁷⁴ This is the sense in which Hume observes that "the effect, then, of belief is to raise up a single idea to equality with our impressions, and bestow on it a like influence on the passions" (Hume 1978, 119).

I only consider the objects concerning which I reason.” Thus, Hume concludes that “all our reasonings concerning causes and effects are deriv’d from nothing but custom; and that belief is more properly an act of the sensitive, than of the cognitive part of our natures” (Hume 1978, 183).

This skepticism led Hume not only to assert his confidence in what is perceived by the senses but also to the importance he ascribes to the vividness of objects in themselves as truthfully represented by human impressions. Hume underscores the importance of impressions, or more specifically passions, for the cognitive faculties of human beings because only passions constitute evidence of the existence of things (Hume 1978, 185).⁷⁵ Consequently, perceptions are the first foundations of all conclusions, and the only objects of causal relations. This forms the basis of Hume’s affirmation that “our perceptions are our only objects” (Hume 1978, 213). In this sense, a vivid impression becomes not only the object of our representations and ideas, but the master that controls decision-making processes.

As in the case of Economic Rationalism, Palpatational Rationality also follows Hume’s recognition that reason alone can never be a motive for any action of the will; and, consequently, that reason can never oppose passions in the controlling effect they exercise on the mind and the will. In the same respect, the cognitive process resulting from the effect of the Principle of Christian Freedom and the Sublime Palpation suggest a magnification of certain attributes of outcomes regarding their value and occurrence, which seem indispensable for the optimal evaluation, selection, and execution of choices. As Figure 2 shows, the substantial difference between both systems resides in their underlying assumptions that also explain their different cognitive outcomes.

⁷⁵ From Hume’s standpoint, impressions are the only truthful representation of the existence of things, for “every thing that enter the mind, being in *reality* as the perception, ‘tis impossible any thing shou’d to *feeling* appear different” (Hume 1978, 190 italics in the original).

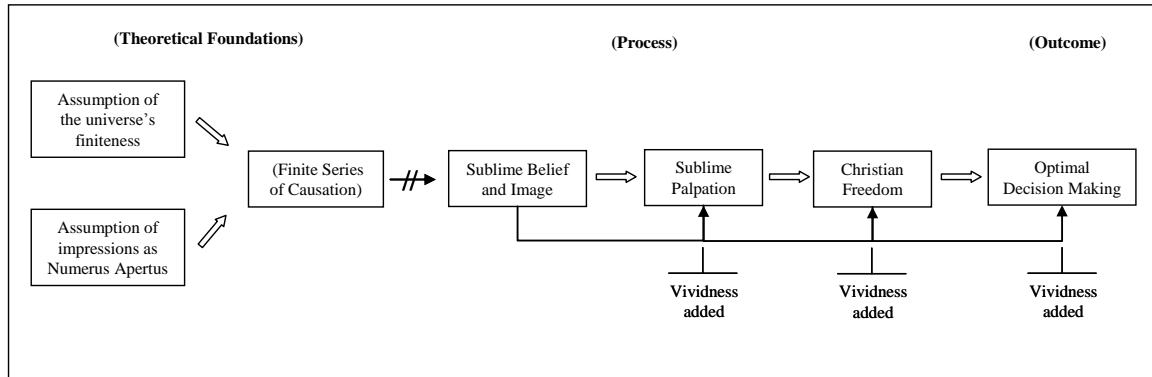


Figure 2. Cognitive System of Palpatational Rationality

The underlying assumptions of a finite universal chain of causation and of an open set of impressions suggest the unique liberating attribute of the cognitive system of Palpatational Rationality. As Figure 2 shows, the modified template of Palpatational Rationality relies on the Principle of Christian Freedom as the belief that heightens the image of God's love in Christ's redemptive ministry found in the narrative of the Gospels. With basis on Augustine's and Calvin's view of Christian Freedom discussed in chapter 3, chapter 6 explains from a neurobehavioral perspective that the magnification of this image allows for the perception of the Sublime Palpation of God's love, which seems able to counteract the enslaving effect produced on reason by somatic emotions like fears and lusts. According to this Sublime Palpation of Christian Freedom, Palpatational Rationality describes the developmental effects that the Principle of Christian Freedom and the Sublime Palpation have on processes of reasoning and decision making influencing the formation of developmental preferences.

2.3.1.1 Role of Beliefs in Hume's Template and in Palpatational Rationality

Although Hume recognizes that the operation by which an impression forms a belief is secret or unintelligible, he is more inclined to see this manner of forming ideas deriving from the liveliness of objects that cause impressions in the first place. Objects have a form of liveliness

that is transferred to the vividness of the impressions formed of them. This sequence prompts judgments and the execution of automated actions “even before we have any time for reflection” (Hume 1978, 104).⁷⁶ Thus, belief has for Hume an empirical basis that derives from the capacity of the object to produce highly vivid impressions, which is capable of moving to action without relying on reasoning. An action by an individual is then produced without the intermediation of reasoning but of feeling; an element that contributes to the superiority of the latter over the former. As shown in detail later, recent discoveries of neurobehavioral sciences suggest this pivotal role of feelings and beliefs by which certain attributes of an idea are made more salient than others in the process of decision making, or what is understood as their “marking effect.”⁷⁷

According to the model of Palpational Rationality, the image of God’s love for the human race represented in Christ’s redemptive ministry forms the basis of the Sublime Palpation as a highly vivid impression (Figure 2). Through the perception of this Sublime Image, the Sublime Palpation of Christian Freedom magnifies the attributes of certain objects over others as their ideas are concatenated in the process of reasoning. It also marks the most salient attributes of these ideas during the process of decision making. This unique supra-marking effect on the appearance of objects results when comparing them with respect to the supreme entity of the first Agent’s self, as perceived in the palpation of the Sublime Image. Accordingly, the belief at the core of the Principle of Christian Freedom is not merely the manner in which a vivid impression becomes a vivid idea, but the very cause that makes vivid the image perceived in the Sublime Palpation (Figure 2). As explained in chapter 3 based on Calvin’s pietistic understanding of Christian Freedom, the perception of the Sublime Palpation requires the intermediation of the

⁷⁶ Hume offers here the example of a person who by the visual perception of walking towards a river’s deep waters, a vivid idea of sinking and suffocation is formed in the mind, prompting the individual to stop instantly, even without the mediation of reflection (Hume 1978, 103). According to Hume, the belief and judgment that makes a person stop before reaching the riverbank forms immediately, without the intervention of reason.

⁷⁷ According to Damasio’s Somatic-Marker Hypothesis, the socially tuned somatic states that are perceived by the prefrontal cortex constitute a critical organizational factor that marks the higher value of one image with regard to all others, while also boosting basic attention and basic working memory (Damasio 2005, 197-198).

belief at the basis of Christian Freedom, despite the inherent capability of the Sublime Image of God's love to produce highly intensive impressions. Hence, the Principle of Christian Freedom heightens the impression of the Sublime Palpation through which the image of God's love is fixed in the mind. This heightening function forms the basis of the supra-somatic marking effect attributed to the Sublime Palpation of Christian Freedom in the concatenation and the selection of images characteristic of the most complex processes of reasoning and decision making, as explained in detail in chapter 6.

In the perception of vivid impressions from objects, narratives play a central role in Hume's cognitive system. The capability of narratives to arouse deep emotions is asserted by Hume in the *Treatise*, and in his essays *Of Tragedy* and *Of the Standard of Taste* (Craig and Routledge (Firm) 1998, vol. 4, 551). Hume affirms that we can "believe" the fact of Caesar's death as one "beyond which there is no room for doubt or inquiry" based on the words that are used as "signs of certain ideas" (Hume 1978, 83). These signs can be of two types: first, the signs of ideas that were in the mind of the witness of an event, and who received them directly from witnessing the event. Second, the signs of ideas that derived from the testimony of others, in a progressive succession until reaching the eye witnesses of such event. It is obvious for Hume that this chain of argument is at first founded on the account of historians, and that without the authority either of the memory or the senses, reasoning would be chimerical and without foundation. Hence, as in the case of Caesar's death, the words of historians are just representations of the ideas registered in the minds of those who witnessed Caesar's demise (Hume 1978, 83).⁷⁸

Similarly, the representation of God's greatest love through Christ's redemptive ministry forms an impression that is also produced by the narrative of events, and not just the direct per-

⁷⁸ According to Hume's view, there is nothing in the world that could allow the reproduction of the existence of an event so that it could be presented as existence, and not an idea, to the senses. Nevertheless, these words are for Hume, as they have been found in the narrative of historians, the first foundations for this connection of causes and effects. Indeed, it is not just the words of historians themselves, but the authority attributed to their words given the unanimity of their narrative that assigns to the *Ides of March* the cause of Caesar's death (Hume 1978, 83).

ception of those events. Although the historical narrative of the Sublime Image has been transmitted through the account of respected historians, the four Gospels constitute the main narrative through which the impression of this image is formed, as examined in chapter 3. Different from Hume, this idea does not derive from causal inference but from the perceptions that reproduce in the mind of the individual the impression of God's greatest love according to the account of the Gospels. Given these considerations, Palpatational Rationality emphasizes the convergence of the Biblical narrative towards the representation of those events by which this vivid impression is formed, as later discussed with attention to Calvin's pietistic view of the Principle of Christian Freedom.

2.3.1.2 Role of Emotions in Hume's Template and in Palpatational Rationality

According to Hume, passions are reflective impressions always in function of the self.⁷⁹ His distinction of impressions as sensitive or original, and reflective or secondary substantially differs from the differentiation of impressions within the cognitive system of Palpatational Rationality. Hume's original type of impression has a strict sensitive basis because they arise without any antecedent perception as in the case of pleasure and pain, the two most powerful impressions of self-preservation. The second category of emotions refers to the somatic impressions that Hume calls reflective or secondary because they do not derive directly from the senses, but from original impressions and from the ideas formed from them. Among these reflective impressions, Hume highlights the four cardinal emotions of love, hatred, pride and humility (Hume 1978, 276), as shown in Figure 3.

⁷⁹ This is the sense in which Hume asserts that "whatever other objects may be comprehended by the mind, they are always considered with a view to ourselves;" that is, the "succession of related ideas and impressions, of which we have an intimate memory and consciousness" (Hume 1978, 277). Hence, there is no room for impressions if the self is not considered.

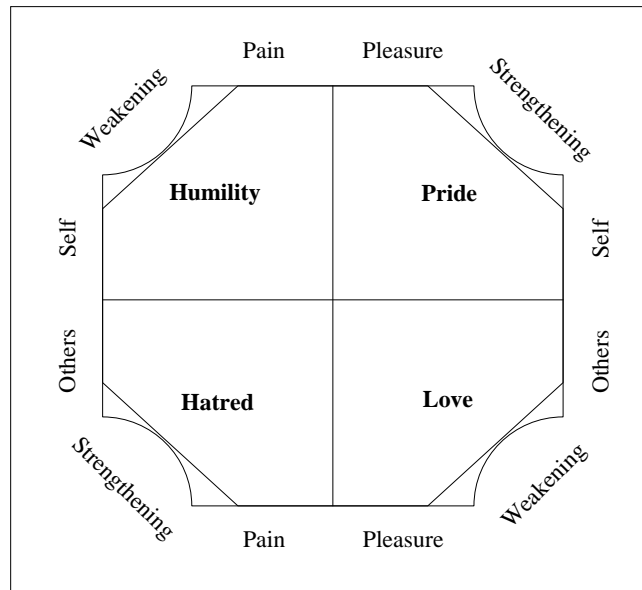


Figure 3. Representation of Hume's System of Cardinal Emotions

Given the nature of their respective original impressions, pride and love relate to each other as proceeding from pleasant original impressions, while humility and hatred as originating from painful impressions (Hume 1978, 288-289). Hume considers humility and hatred vices, while pride and love virtues. This constitutes the core of his affirmation that “pride and humility, love and hatred are excited, when there is any thing presented to us, that both bears a relation to the object of the passion, and produces a separate sensation related to the sensation of the passion. Now virtue and vice are attended with these circumstances” (Hume 1978, 473). Second, the passions of humility and pride have the self as common object, while hatred and love have for their object the self of another person.⁸⁰ Finally, Hume associates humility with love as a weakening passion, different from the common strengthening effect that he attributes to pride and hatred, as seen in Figure 3. Consequently, he affirms that “pride and hatred invigorate the soul; and love and humility enfeeble it” (Hume 1978, 391).

⁸⁰ As Hume asserts, “the passions of pride and humility, as well as those of love and hatred, are connected together by the identity of their object, which to the first set of passions is self, to the second some other person....Upon the whole, pride is connected with humility, love with hatred, by their objects or ideas: Pride with love, humility with hatred, by their sensations or impressions” (Hume 1978, 333).

Hume maintains that passions arise from comparison, but in the context of his assumption of infiniteness there are only somatic impressions whose valid object of comparison is the self, either proper or that of another human being (see Figure 4). The differences that he sees between impressions related to love, respect, or contempt, are determined by the position of the proper self with respect to the self of another (Hume 1978, 390). It is understandable why this incomplete point of comparison misled Hume to view love as an emotion that weakens or enfeebles the mind in opposition to pride and hatred, which he proffers as the true means of its invigoration. Hume sees in property and riches the closest relation to the self that most commonly produces pleasure and pride. He also sees in poverty the essence of slavery and the state of the individual that most commonly causes uneasiness and humility (Hume 1978, 309, 315). The same assumption of infiniteness that underlies Hume's anthropocentrism conduces to this materialistic view of emotions that surmises property as the closest form of causation relating any object to pleasure or pain.⁸¹ For Hume, one's position with respect to property defines the states of an individual as either powerful or slave. This materialistic view leads Hume to espouse a superficial understanding of freedom, which he defined in terms of the capability to provide pleasures for the self through the accumulation of property and its implied powers (Hume 1978, 375).

⁸¹ The anthropocentric characteristic of such a system results from Hume's misconception of an infinite series of causations in the universe deemed independent of any absolutely necessary first Being. This view is further manifested in the limited number of objects of comparisons that he considers as the only sources of impressions. These are the only objects able to produce higher or lower levels of pleasure and pain in the individual as compared with the proportions that others have of them as in the case of riches, power, merit and reputation (Hume 1978, 375).

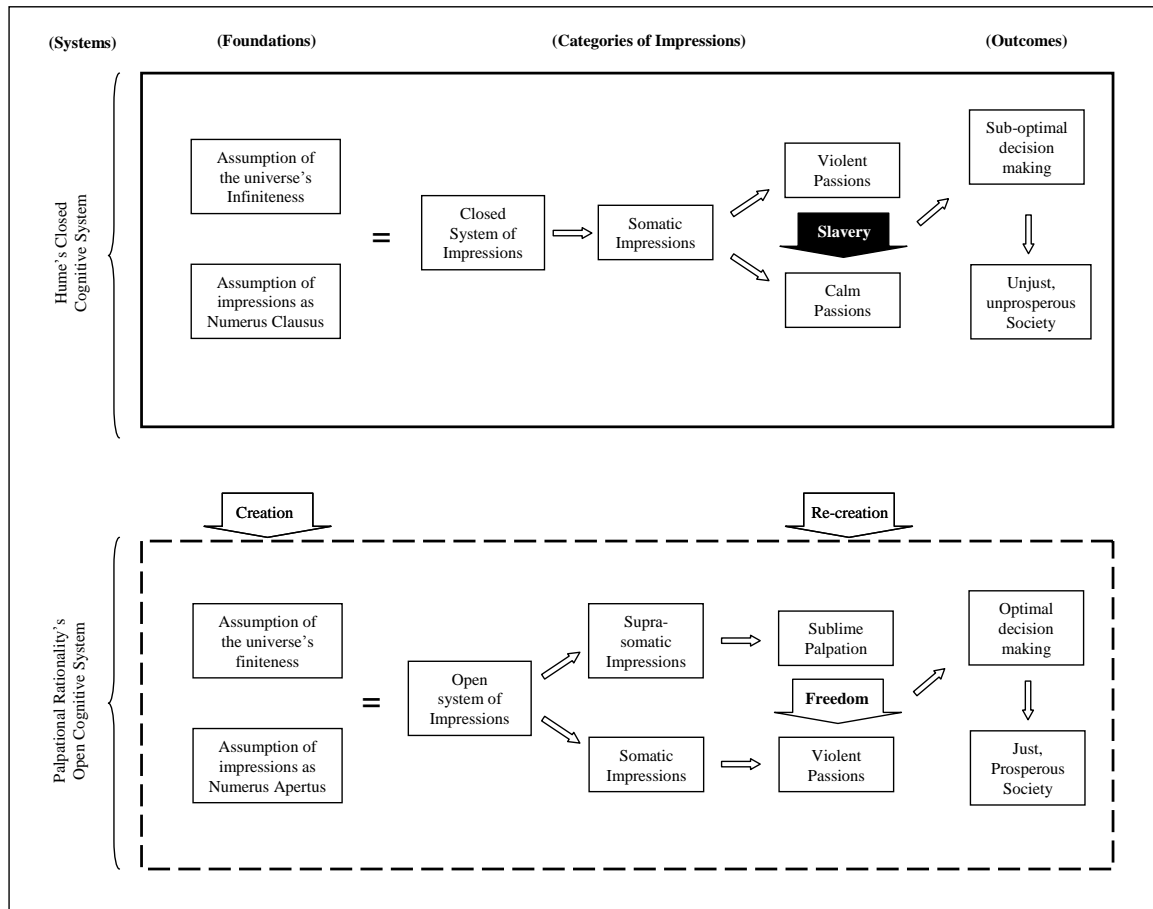


Figure 4. Differences between Categories of Impressions among Cognitive Systems

The definition of belief in Hume's closed system, as a means to magnify impressions perceived of an object inexorably leads to the conclusion that pride and hatred are the strongest of all impressions, as seen in Figure 4. These basic impressions are able to imprint the most intense appearances of objects through comparison to the human self, exercising their mastery over reason. This conclusion results from a system of cognition built upon the assumption of infiniteness that excludes any meta-somatic impression deriving from the supreme self of the necessary Agent. With the exclusion of the Sublime Palpation from any cognitive system, Hume's conclusion remains that the love deriving from comparison to the human self has no power to confront the violent powers of pride and hatred.

Conversely, when interjecting the assumption of finiteness of Palpational Rationality into Hume's template, an open system of emotions seems to follow in order to allow for impressions regarding the Supreme self (Figure 4). As discussed in depth later, recent evidence from natural sciences suggests the finiteness of the universe perceived in its beginning and its limits, and evidence from neurobiological science implies a human capability to perceive meta-somatic impressions. Accordingly, if this supreme Self defines as righteous or good whatever is "pleasant" to Him, in keeping with Hume's terminology, it follows that the supra-somatic nature of the Sublime Palpation marks as "good" the attributes of objects "pleasant" to the supreme Self over the lower marking that results from what is pleasant to the human self.

According to the examination that chapter 3 provides of Augustine's and Calvin's views, the supra-somatic nature of the Sublime Palpation of Christian Freedom suggests a superior marking effect on reasoning and decision making than the somatic reflective impressions derived from the human self (Figure 4). This superior marking effect attributed to the Sublime Palpation does not contradict Hume's treatment of pride as the most violent of all impressions. The Sublime Palpation of Christian Freedom remains a highly vivid supra-somatic impression able to invigorate the mind and move it toward its renewal. It refers to the "feeling of the sublime" of God's love for the human race expressed in Christ's redemptive ministry, as underscored by Augustine and Calvin. To palpate this meta-somatic object of impressions appears to infix in the individual the impression of a Love that has a superior marking effect than the love whose object is either the human self, or that of any other created being.

The cognitive system of Palpational Rationality differs from Hume template's in its limits to a closed system of impressions that include only the form of inferior love whose object is the human self. Rather, the open system of emotions characteristic of Palpational Rationality includes the supra-somatic impressions whose object is the Self of the necessary Being, according to the

unique human capability to perceive these impressions. Equally, Palpational Rationality differs from the view that Weber seems to derive from Hume, which attributes to the somatic emotion of anxiety concerning election the most prominent effect on reasoning and decision making of the Protestant believer.

Additionally to Hume's work, the distinction between the somatic effect of impressions like pride, lusts, anxiety or fear, and the supra-somatic effect that this work describes in the Sublime Palpation of God's love have a seminal exposition in Adam Smith's *Theory of Moral Sentiments*.⁸² In this lesser known treatise of human nature, Smith classifies human passions in three main groups: social, unsocial and selfish passions. On one side of Smith's continuum are located pleasure-seeking feelings, or "Social Passions." Love constitutes for Smith the most elevated type of social passion that forms the main cause of happiness. These social passions promote the sentiment of gratitude in their recipient, whose external expressions take the form of rewards granted to agents for the merit of their loving actions (Smith 2000, 52-54). On the other side of the continuum, Smith locates the "Unsocial Passions," whose experience produce in the agent feelings of pain. The most characteristic expression of the unsocial passions is anger because it poisons happiness in the agent and produces resentment in the recipient (Smith 2000, 44-51).

Smith affirms that love is the only passion able to generate true pleasure and happiness, whose definition he finds in the Christian maxim of the Golden Rule: "Love your neighbor as yourself" (Smith 2000, 243). Smith stresses the second part of the proposition "as yourself," instead of the first part "Love your neighbor," which then becomes the specific understanding of love that the author uses as a yardstick for other manifestations of social passions. From this perspective, Smith's notion of love does not depend on loving one's neighbor, or on merely a love of

⁸² In the context of Hume's cognitive template, Adam Smith developed a classification of moral sentiments that in many respects supported his main *Inquiry on the Causes of the Wealth of Nations*. The version used here of the *Theory of Moral Sentiments* corresponds to the year 2000 edition of the original published in London by Richard Griffin and Co., in 1854.

humankind, but rather in “the love of what is honourable and noble, of the grandeur, and dignity, and superiority of our own characters” (Smith 2000, 194). Consequently, Smith sees the development of the greatness and superiority of human character as the result of the obedience to what he calls “Laws of the Deity,” promulgated by those “vicegerents” that God has set up within human nature (Smith 2000, 234).

The treatment of Love as the highest of all social passions contrasts with Smith’s conception of ambition as the purer manifestation of all “selfish passions,” and as the main corruptor of human sentiments. Smith considers the “admirers” and “worshippers” of wealth and greatness as the “great mob of mankind” (Smith 2000, 85). This condemnation results from the propensity of ambition to promote the disposition to please more than the disposition to serve, given its focus on fashions rather than virtues. The ends that ambition propels to pursue in the souls are polluted and generally obtained through disagreeable means (Smith 2000, 87-89). Thus, Smith recognizes the pervasive effect of ambition and selfishness as corruptors of human sentiments in contrast to the value assigned to the Christian definition of love as the only sentiment able to generate true happiness. The notion of Sublime Palpation emphasizes the importance that Smith gives to the Christian definition of love, while adding a component that remained absent in Smith’s *Theory*. This element refers to the supra-marking effect that this love appears to have when sublimely perceived in relation to the Supreme Self of the first Agent, rather than the self of another human being. Hence, instead of Smith’s emphasis on the Christian rule “Love your neighbor as yourself” (Matthew 22:39) (Smith 2000, 243), Palpational Rationality stresses Christ’s higher rule: “Love each other as I have loved you” (John 15:12).

In sum, the supra-somatic essence of the Sublime Palpation results from the vividness of the Sublime Image of God’s love narrated in the Gospels through the magnification added by the Sublime belief of the Christian Freedom, as indicated in Figure 2. The nature of the Sublime Pal-

pation as a supra-somatic impression differs from the somatic nature of the impressions that constitute Hume's template, as it is also the case of the somatic emotion of anxiety that forms the basis of Weber's Economic Rationalism. In this sense, the Sublime Palpation of Christian Freedom seems to constitute a separate category of impressions deriving from its supra-somatic and reflective nature. This nature suggests its superior marking effect in comparison to the ordinary somatic effect characteristic of reflective and primary impressions like pride, in the case of Hume's system, or anxiety, in the case of Weber's Economic Rationalism.

2.3.2 Critique of Hume's Notion of the "Illusion of Freedom"

The assumption of infiniteness that derives from the notion of an endless series of causation is of central importance to Hume's conception of freedom as an "illusion of liberty" (Hume 1978, 407-412).⁸³ In his view, freedom is a "false sensation" because one cannot be free from the bonds of necessity (Hume 1978, 408). In consequence, Hume considers that even in the case of the most hideous crimes, individuals can only be blamed for acting contrary to the rules of morality or religion. They are not responsible because they are acting out of necessity and lack freedom (Hume 1978, 411). Based on the assumption of finiteness, Hume argues that individuals are not responsible for actions that remain necessary consequences of their motives and circumstances. Given these considerations, actions depend on the necessary causes responsible for those motives and circumstances, within the inexorable series of infinite causation corresponding to Hume's view of a closed universe. Thus, human beings are not free, and freedom is just a false impression that gives the illusion of being able to loosen the necessary chain of causal events. In a universe without a first cause, there seems to be only room for this illusion of freedom because as cause

⁸³ One of Hume's most important aims in his *Treatise of Human Nature* is "to prove that liberty and chance are synonymous" (Hume 1978, 412).

and effect are conjoined in the universe, they also remain in the path that conjoins perception, impression, idea, and action (Figure 4, p. 67).

Hume's notion of liberty bounded by necessity seems to underscore passions as the only motives of the will to regulate action and to sustain his view that "reason is the slave of the passions" (Hume 1978, 409). Given the nature of necessity as "the constant union and conjunction of like objects," or as "the inference of the mind from the one to the other," says Hume, "we can draw inferences concerning human actions, and those inferences are founded on the experience'd union of like actions with motives and circumstances" (Hume 1978, 409). In cases regarding the motives of the will, Hume asserts two principles to explain the dominant effect that he attributes to passions over reason. First, he observes that "reason alone can never be a motive to any action of the will"; second, he asserts that reason "can never oppose passion in the direction of the will" (Hume 1978, 413). Regarding the former principle, passions are sufficient motives of the will due to their essence as either pleasure or pain, for as he says, "'tis from the prospect of pain or pleasure that the aversion or propensity arises towards any object." This moves individuals to avoid or embrace what gives them "uneasiness or satisfaction" (Hume 1978, 414). In Hume's view, away from pain and pleasure the objects themselves do not affect the senses because their connection can never give them any influence. Consequently, Hume concludes that as reason is nothing but the discovery of this connection "it cannot be by its means that the objects are able to affect us" (Hume 1978, 414).

The second principle defining the motives of the will establishes the foundations of Hume's "illusion of freedom" by underscoring that passions are masters over reason, as the violent passions rule over the calm ones. Hume infers this second principle from the first because if reason alone can never produce any action or give rise to any volition, then "the same faculty is as incapable of preventing volition, or disputing the preference with any passion or emotion"

(Hume 1978, 414-415). Subsequently, only passions can control passions, for “nothing can oppose or retard the impulse of passion but a contrary impulse.” From this viewpoint, Hume affirms that “reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them” (Hume 1978, 415). At the core of Hume’s notion of the illusion of freedom is his view that it is almost impossible to attain “strength of mind,” that is, the capability of calm passions to subdue or control the violent. Thus, Hume suggests that violent passions overcome calm ones, and that the opposite, which he calls “strength of mind,” is a virtue difficult to achieve.⁸⁴

In essence, if confined to a system that encompasses only somatic-based passions, one would have to conclude with Hume that reason must be the slave of basic passions like lusts and fears. The role that Hume attributes to emotions in his cognitive system coincides with the form of slavery overcome by the liberating power of the Sublime Palpation of Christian Freedom. This is the distinctive slavery of a human nature that, apart from the liberating effect of Christ’s Law of Liberty, seems to have no other state but that of submission to the primary emotions of lust of the flesh and fear of death. The rarity of “strength of mind” that Hume recognizes in human nature coincides with a closed system characterized by the “illusion of freedom.” It corresponds to a capability that the secondary or weaker passions do not have to subdue the primary and violent ones. Accordingly, as this illusory strength of the mind is in Hume the very capability that determines virtuous actions, it appears that his cognitive system cannot result in virtuous human behavior. In this realization, Hume’s system is congruent with its appreciation of freedom as an illusion. For in its plainest sense, freedom seems to involve a capability absent in any somatic impression to interrupt the enslaving effect of lust and fears.

⁸⁴ Hume notes that “what we call strength of mind, implies the prevalence of the calm passions above the violent; tho’ we may easily observe, there is no man so constantly possess’d of this virtue, as never on any occasion to yield to the solicitations of passion and desire” (Hume 1978, 418).

Hume's cognitive system demotes freedom to the state of individuals able to provide for themselves the greatest sum of pleasure through the accumulation of property and riches. This conclusion derives from an attempt to understand the complexity of human nature through his assumption of the universe's nature and of human emotions as a closed set of impressions. These incongruent assumptions suggest a confusion of freedom with the source of the pleasure, pride and fears that according to Hume causes the slavery of reason. On one hand, Hume's view of the universe leads him to accept a notion of human nature subjected to the necessity of causality and endowed only with an "illusive sense of freedom." On the other hand, Hume's view of emotions as a closed set of impressions identifies the power to produce the highest pleasures for the self as the only object of emotions. If in the universe there is no other self but the human, which is then the only object of whatever causes pleasures, then whatever produces the highest pleasure for that self is also what defines its freedom.⁸⁵ Conversely, the assumptions of finiteness and "numerus apertus" of Palpatational Rationality suggests the existence of an absolutely necessary Being that points to His supreme Self as the superior object of supra-somatic impressions. Consequently, the condition of this absolutely necessary Being as agent of the first cause also gives Him a different position with respect to what the human self may consider the greatest sources of joy and pleasure, as well as the perception of a real "sense of freedom."

The "reality of freedom" that forms the core of Palpatational Rationality involves the interjection of an alternative principle to that of Physical Necessity. According to this alternative principle, the first cause of the finite universe that puts in motion the universal chain of causation also

⁸⁵ Hume's assumption of infiniteness persuaded him that there is no place for any object of impression other than those that correspond to a physical world dominated by necessity. This assumption makes impossible, or at least false, the sensation of freedom and the determination of any virtuous action. As a result, only the natural or somatic-based passions can control other passions, but not reason, because as Hume observes, "reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them" (Hume 1978, 415). The only means to control somatic passions is through other somatic passions. From this vantage point, Hume acknowledges that "nothing can oppose or retard the impulse of passions but a contrary impulse" (Hume 1978, 415). Hume distinguishes between calm and violent passions according to the level of agitation or disorder they produce in the soul. However, the closer proximity of violent passions to the original passions of pleasure and pain makes their power hegemonic or insurmountable with respect to weaker "calm passions."

has the power to intervene in the portion of this series of causations that conjoins perceptions, impressions, ideas, and actions (Figure 4). Most importantly, the same power by which this alternative Principle is able to interrupt the finite causal series dominating human action also renders it able to determine the concatenation of completely new chains of causations influencing intrinsically and extrinsically optimal human actions. Thus, the essence of the Principle of Christian Freedom refers to this power to interrupt and renew the causal series that drive human reason and decision making, which would otherwise be under the enslaving influence of violent passions like, pride, lust, anxiety and fear. Palpatational Rationality modifies the template that Weber seems to derive from Hume's closed system of emotions and foregrounds the effect that the Sublime Palpation of Christian Freedom seems to have on a real "sense of freedom." As described in chapter 1, Inglehart (2008) showed the important macro-level association between this sense of freedom characteristic of countries of Reformed Protestant tradition and higher levels of income per capita. At the micro-level, this dissertation highlights the effect that this sense of freedom can have on the evaluation, selection and execution of choices indispensable to developing and sustaining a just, peaceful, and prosperous society.

In brief, the assumption of infiniteness characteristic of Hume's cognitive system implies the inexorable slavery of reason to basic passions that informs his notion of "illusion of freedom." This view contrasts with the human potential to sense the "reality of freedom" that Palpatational Rationality proposes with its basis on the assumption of finiteness. The essence of the Principle of Christian Freedom as an alternative to Hume's Principle of Necessity comprises the power to set in motion the universal chain of causation and to interrupt it within the connection of impressions, ideas and actions. The new series of causation that can result from this intervention corresponds to the effect that the Sublime Palpation of Christian Freedom seems to exercise on processes of reasoning and decision making influencing economic and political development. Thus, as it is

reflected in the universe, this supra-somatic agency that corresponds to a necessary Being also suggests the power to prompt the cessation of the natural causation that determines the slavery of reason to innate feelings such as pride, lusts, anxiety, and fears. Accordingly, the interaction of the Principle of Christian Freedom with the supra-somatic Sublime Palpation seems able to subdue the otherwise unconquerable power that Hume assigns to violent passions over reason.

2.3.3 *Critique of the Notion of Society as a Means to Freedom*

The final point of comparison between Hume's template, which this dissertation considers as a foundation for Economic Rationalism, and Palpational Rationality corresponds to the understanding of society as a means to freedom. To understand morality as a weaker sentiment poses the problem of its difficulty in determining virtuous actions because it is always subjected to more powerful and violent impressions. This constitutes the main problem that Hume attempted to solve with his conception of virtuous moral motives. Hume suggests that moral distinctions are the matter of sentiments not of reason, and as a result virtuous actions can only derive from virtuous motives. In this sense, Hume observes that "all virtuous actions derive their merit only from virtuous motives, and are consider'd merely as signs of those motives." Consequently, "an action must be virtuous before we can have a regard to its virtue" (Hume 1978, 478). In this context, Hume acknowledges the problem that the most violent passion of pride or self-love poses for the attainment of virtue, for, as he recognizes, "'tis certain, that self-love, when it acts at its liberty, instead of engaging us to honest actions, is the source of all injustice and violence" (Hume 1978, 480). The unique strength of selfishness with regard to the other violent passions results from its proximity to the self as the only object of impressions. Accordingly, Hume remarks that "in our original frame of our mind, our strongest attention is confin'd to ourselves; our next is extended to our relations and acquaintances; and 'tis only the weakest which reaches to strangers and indifferent persons" (Hume 1978, 488). Similar to Weber's reliance on the basic passion of

anxiety, the main conundrum that Hume faces is how to erect a system of moral impressions conducive to a virtuous and peaceful society, while building it on the foundations of basic passions like the lust that remains the source of all injustice and violence.

Hume unsuccessfully appeals to his idea of virtuous motives to address the challenge of finding a force able to counteract the insurmountable effect that selfishness produces on reason. He considers these motives as capable of counteracting the injustice, dishonesty and violence distinctive of pride as the most powerful of all passions. In this context, Hume argues that “no action can be virtuous, or morally good, unless there be in human nature some motive to produce it, distinct from the sense of its morality” (Hume 1978, 479). The failure to present any impression able to counteract within the limits of human nature the violent power of self-love seems to be the weakest point of Hume’s and Weber’s cognitive systems. This constitutes one of the main departures of Palpatational Rationality from their cognitive systems.

Given these considerations, Hume distinguishes four types of motives. The first two refer to the motives of humanity and justice that are artificial in nature, while the other two allude to the natural motives of sympathy and the “sense of morals.” Hume considers the “principle of humanity” as a first artificial moral motive that although “meritorious and laudable” cannot control violent emotions (Hume 1978, 478).⁸⁶ Hume assigns a higher power to control basic emotions to artificial moral motives like justice that result from conventions and agreements. As Hume affirms, “the sense of justice and injustice is not derived from nature, but arises artificially, tho’ necessarily from education, and human conventions” (Hume 1978). In conclusion, Hume asserts that “no action can be laudable or blamable, without some motives or impelling passions, distinct

⁸⁶ According to Hume, the limits of the principle of humanity derive from the principle’s very artificial nature, because “there is no such passion in human minds, as the love of mankind, merely as such, independent of personal qualities, of services, or of relation to ourselves” (Hume 1978, 481). In contrast, Hume asserts that the only attraction innate to human nature is that of the sexes, for as he affirms, “an affection betwixt the sexes is a passion evidently implanted in human nature” (Hume 1978, 481).

from the sense of morals, these distinct passions must have a great influence on that sense. ‘Tis according to their general force in human nature, that we blame or praise” (Hume 1978, 483).

Although artificial motives are limited in their ability to control the insurmountable power of violent passions, Hume considers society as the source of the education and human conventions from which these artificial motives derive. At the core of Hume’s proposition lies the notion that the selfishness of one individual can only be affected by the selfishness of another (Hume 1978, 415). This approach offers society the ability to remedy the noxious effects of violent passions, due to the venue that communities offer to counterbalance violent emotions. Nevertheless, society does not perform this function sufficiently given the very nature of selfishness as the emotion most contrary to constructive interactions within any community. Indeed, Hume acknowledges that “however the circumstances of human nature may render a union necessary...yet there are other particulars in our *natural temper*, and in our *outward circumstances*, which are very incommodious, and are even contrary to the requisite conjunction. Among the former, we may justly esteem our selfishness to be the most considerable” (Hume 1978, 486 italics in the original).

Hume’s view of society as an efficient means to address selfishness relies instead on the convention that takes place among its members to mutually respect private property, and to keep promises as an expression of their self interest. Hume suggests that justice and the obligation to keep promises arise as artificial moral motivations to redirect selfishness or lack of generosity. At the nucleus of this convention lies the realization that “it will be for my interest to leave another in the possession of his goods, *provided* he will act in the same manner with regard to me,” and that in turn, any other member of society “is sensible of a like interest in the regulation of his conduct” (Hume 1978, 490, italics in the original). Hume sees such a convention not only as the

ultimate root of justice, but also of all rights, including those of property.⁸⁷ Conventions are for Hume the source of justice, which he considers the remedy to the distinctively selfish qualities of the human mind in a social context. Thus, Hume believes that “justice takes its rise from human conventions; and these are intended as a remedy to some inconvenience, which proceed from the concurrence of certain qualities of the human mind with the situation of external objects. The qualities of the mind are selfishness and limited generosity: and the situation of external objects is their easy change, join’d to their scarcity in comparison of the wants and desires of men” (Hume 1978, 494). He concludes that precisely by disguising this false morality, the violent passion of selfishness can be obliquely satisfied in society, because “if we observe these rules in our conduct, men will have more indulgence for our secret sentiments, when we discover them in an oblique manner” (Hume 1978, 598).⁸⁸

Thus, Hume considers conventions as the source of artificial moral motives such as justice and the obligation of promises from which human virtue proceed given the capability that these social agreements have to redirect the power of selfishness.⁸⁹ The essence of this solution

⁸⁷ Hume assumes that “after this convention concerning abstinence from the possessions of others, is enter’d into, and every one has acquir’d a stability in his possessions, there immediately arise the ideas of justice and injustice; as also of property, right, and obligation” (Hume 1978, 490-491). Hume emphasizes the relationship between justice and property when affirming that as “a man’s property is some object related to him: This relation is not natural, but moral, and founded on justice.” Thus, concludes Hume, “the origin of justice explains that of property” (Hume 1978, 491).

⁸⁸ The oblique satisfaction of the violent passion of selfishness requires the masking that the appearance of morality provides. As Hume suggests, “at least, it must be own’d that some disguise in this particular is absolutely requisite, and that if we harbour pride in our breasts, we must carry a fair outside, and have the appearance of modesty and mutual deference in all our conduct and behavior.” He recommends disguising the most invigorating passion of pride with the fake appearance of humility that remains in his view an enfeebling sentiment (Hume 1978, 598).

⁸⁹ As arising from social conventions, justice and the obligation of promises have for Hume no intrinsic value but that which derives from the agreement of community members. This results, in turn, from the inculcation of the “Principles of Probity” by instruction and education. Hume’s conception of justice has only an extrinsic value that depends on the universal expectation that each member will behave according to a common sense of self interest. As he explains, “justice establishes itself by a kind of convention or agreement; that is, by a sense of interest, suppos’d to be common to all ... ‘tis only upon the supposition, that others are to imitate my example, that I can be induc’d to embrace that virtue” (Hume 1978, 498). Moreover, Hume asserts the obligation to keep promises, for “a promise wou’d not be intelligible, before human conventions had establish’d It,” and “a man unacquainted with society, could never enter into any engagements with another” (Hume 1978, 516). Hume infers the origin of this obligation from the same source that determines justice, because “this sentiment of morality in the performance of promises arises from the same principles as that in the abstinence from the property of others” (Hume 1978, 523). Therefore, the principles of probity that converge in the respect for the property of another are for Hume the means through which both justice and the obligation are instilled because “there is nothing, which touches us more nearly than our reputation, and nothing on which our

corresponds to a pessimistic understanding of human nature that is in bondage to the most violent passion of selfishness. This conception appears to agree with the Scriptural definition of unreformed human nature, but not with the remedy offered to counteract it. Indeed, Hume concedes that “men being naturally selfish, or endow’d only with a confin’d generosity, they are not easily enduc’d to perform any action for the interest of strangers, except with a view to some reciprocal advantage, which they had no hope of obtaining but by such a performance” (Hume 1978, 519). Given this belief, his solution seems to stand in direct opposition to the view of Palpatonal Rationality, for Hume assumes that the slavery born from the violent passions of selfishness and ingratitude cannot be conquered. In consequence, all that moralists and politicians can hope for “is to give a new direction to those natural passions, and teach us that we can better satisfy our appetites in an oblique and artificial manner, than by their headlong and impetuous motion” (Hume 1978, 521). As such, Hume’s moral system relies on society’s capability to instill the oblique gratification of these unbridled passions, in place of the innate propensity of the individual to seek their straight and unrestricted satisfaction.

The value Hume assigns to society derives from the remedies it offers to the inconveniences of life (Hume 1978, 485). This function of society also forms the core of Adam Smith’s understanding of moral sentiments, as well as the effect that he attributes to them for the development of optimal models of production and capital accumulation.⁹⁰ Accordingly, Hume argues

reputation more depends than our conduct, with relation to the property of others” (Hume 1978, 501). Thus, Hume concludes that the greatest object of instruction that parents have is “to inculcate on their children, from their earliest infancy, the principles of probity, and teach them to regard the observance of those rules, by which society is maintain’d, as worthy and honourable, and their violation as base and infamous” (Hume 1978, 500-501).

⁹⁰ Adam Smith agreed with Hume’s view that self-love is the rector principle that leads individuals to the accumulation of power and wealth. The importance that Hume gives to selfishness as the most violent of all passions remains also for Smith the sentiment that drives the force of the principle of the division of labor as the main factor leading to general opulence (Smith 1976, 17-18). Although the division of labor is the necessary consequence of the propensity of human nature to exchange one thing for another, Smith asserts that what forms its basis is men’s self-love and self-interest. Revealing the significant influence of Hume’s view on the oblique gratification of passions, Smith argues that “man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. ... He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is for their own advantage to do for him what he requires of them” (Smith 1976, 18).

for the remedy of augmentation of production by a conjunction of forces that addresses the inconvenience of singular forces too small to execute any significant work. Likewise, he stresses society's remedy for increases in productivity, which results from overcoming the constraints of being unable to attain perfection in a particular art. Finally, Hume stresses the alternative that society offers in providing safety nets, or mutual succor, in face of the unforeseen.

The view of society as a suitable means to control basic passions derives from Hume's and Smith's assumptions that any form of society has the power to redirect violent impressions. However, the British Protestant model of society adopted by these authors seems to have benefited from the liberating effect on the individual that Palpatational Rationality assigns to the Sublime Palpation of Christian Freedom. The recognition of these distinctive attributes by British society forms the basis of Montesquieu's observation that the English had "progressed the farthest of all peoples of the world in three important things: in piety, in commerce, and in Freedom."⁹¹ The incongruence in Hume's thought appears to be his belief that the conventions that inform society have, per se, the power to redirect selfishness, given the venues that society provides to mutually control selfishness. In this context, he affirms that "there is no passion, therefore, capable of controlling the interested affection, but the very affection itself, by an alteration of its direction" (Hume 1978, 492). Still, social conventions are in essence ideas, which Hume recognizes as unable to overcome the enslaving effect of basic passions, even if these ideas depend on the self-interest of mutual respect of possessions. Given the weaker nature and origin of ideas at the core of social conventions, the enslaved reason cannot overcome the power of violent passions. Hume expressly recognizes this incongruence when noting that "this alteration must necessarily take place upon the least reflection, since 'tis evident that the passion is much better satisfy'd by its restraint, than by its liberty" (Hume 1978, 492). He openly acknowledges that basic emotions

⁹¹ *Esprit des Lois*, Book XX, chapter 7. Cited by Weber (2001, 11).

incapacitate individuals to function with less self-interest in society, although he places a faith that appears to be false in the power of ideas, such as social conventions, to tame violent passions. In this sense, Hume affirms that “human nature being compos’d of two principal parts, which are requisite in all its actions, the affections and the understanding; ‘tis certain, that the blind motions of the former, without the direction of the latter, incapacitate men for society” (Hume 1978, 493). As Smith also recognized, selfishness remains the most violent of all passions, and it cannot be overcome by invoking the weaker ideas that reason produces.⁹² Therefore, it seems that as reason cannot exercise any power over selfishness, it lacks the power to redirect pride, despite Hume’s notion of the beneficial effects of self-restraining social conventions.

The distinctive attributes that Hume and Smith assign to society do not appear to correspond with the essence of any society in general, but rather with the specific nature of the Reformed Free Society that seems to result from the liberating effect of the Sublime Palpation of Christian Freedom. This type of free society assumes a notion of community that each author employs as a means to “redirect” the enslaving effect of human passions, and to tend toward common justice, peace and prosperity instead. From this vista, the remedy of augmentation of production that they attribute to society seems to presuppose the internalization of the Sublime Palpation of Christian Freedom that moves people to join efforts even when there is a noticeable disparity of wealth. The remedy that Hume and Smith assign to society to promote productivity

⁹² In the middle of the continuum that Adam Smith used to classify human passions as social, unsocial and unselfish, he locates what he calls “Selfish Passions” half way between the social and unsocial passions. These selfish passions correspond to an intermediate category of emotions producing pain in the agent under the deception of apparent pleasure (Smith 2000, 55-59). Ambition is the feeling that, according to Smith, most characteristically expresses the nature of the selfish passions. In the case of the agent, the experience of these passions, within the limits of prudence and justice, produces an appearance of pleasure, which is perceived as a fictitious sense of happiness. Such a deceiving happiness is experienced at the high cost of the disturbance of the peace of mind that the agents suffer, given the anxiety that these selfish passions generate. Moreover, when these passions are experienced outside the limits of prudence and justice, they produce pain, whose punishment is experienced by the agents through the remorse of a tormenting conscience. Ambition has unique importance for the consequent development of Smith’s economic views. Indeed, he affirms that when these selfish passions are experienced outside the limits of prudence and justice, they produce a pain in the recipient that punishes the agent through social reprobation and indignation. Nonetheless, whenever these emotions are experienced within the limits of prudence and justice, Smith argues that they become the source of important advances in social and living standards, which are realized through the progress of society (Smith 2000, 121-122).

also appears to take for granted the individual discipline and self-control required for improvement in dexterity suggested as an effect of the Sublime Palpation of Christian Freedom on reasoning and decision making, as examined in detail in chapter 3. Finally, the alternative that society offers in providing safety nets, or mutual succor in face of the unforeseen, also seems to presuppose the effect that the Sublime Palpation of Christian Freedom appears to have on the willingness to take on the burdens of strangers. This spontaneous willingness forms the basis of common safety nets in spite of disparity of possessions. Given these considerations, the main problem in Hume's and Smith's view seems to be the assumption that these remedies are reproducible in any society. Conversely, this dissertation proposes that these remedies are more characteristic of the type of society that seems to result as the collective manifestation of the individual-level liberating effect associated with the Sublime Palpation of Christian Freedom.

The view sustained by Hume that no somatic impression has the power to subdue violent passions is diminished by his assumption that any society has the capacity to redirect the effects that this slavery imposes. Hume advocated this illusive power of society when observing that all that moralists and politicians can pretend to do "is to give a new direction to those natural passions [selfishness and pride], and teach us that we can better satisfy our appetites in an oblique and artificial manner, than by their headlong and impetuous motion" (Hume 1978, 521). But what instruction, reason or idea can convince the individual to overcome the desire for direct gratification of violent appetites instead of adhering to the oblique manner that social conventions suggest? It seems that only an impression of supra-somatic nature can counteract a somatic impression. Hence, the most violent somatic impressions of selfishness and pride can be overcome by the supra-somatic impression, or Sublime Palpation, and it seems only under such control that humans can perceive a real sense of freedom. This is the common foundation upon which the

Reformed free society appears to build the conventions necessary to form and sustain a just, prosperous and peaceful society.

The effect Hume attributes to society for the oblique satisfaction of selfishness requires instruction at an early age on the self-enforceability of mutual agreements (Hume 1978, 489). In this context, perhaps the most convincing evidence revealing the use Hume makes of the Reformed free society that he uses as a model refers to the relevance he assigns to “Principles of Probity.” These principles comprise the essential instruction and education that he encourages from an early age in order to observe the conventions that redirect passions. Following through on these considerations, Hume states that “a man is the more useful, both to himself and to others, the greater degree of probity and honor he is endow’d with; and that those principles have greater force, when custom and education assist interest and reflexion” (Hume 1978, 500). Hume does not discuss the origin or the nature of these fundamental principles; he just assumes they are part and parcel of the parents in the society he puts forth as a model. Thus, Hume assumes a virtuous society, where individuals are continuously taught the advantages of observing conventions due to the prevenient Principle of Probity whose source he overlooks.

Slavery to pride and selfishness seems to result in a social order characterized by its hierarchical or vertical organization, which contrasts sharply with the horizontal nature of a Reformed free society. As pride remains essential to the approbation of mankind in a non-free society, Hume observes that “there are certain deferences and submissions which custom requires of the different ranks of men towards each other....’Tis necessary, therefore, to know our rank and station in the world” (Hume 1978, 598-599). A social order that has for principle the ranking of individuals based on their pride demands a hierarchical society that resembles in every sense the relation between master and slave. The attributes of a society whose principle of organization responds to the supremacy of violent emotions like selfishness results in a society naturally char-

acterized by slow growth, low productivity, poverty, corruption, instability, and the absence of informal safety nets.

Contrarily, a society that reflects the liberating effect of the Principle of Christian Freedom appears to manifest opposite outcomes in at least three instances. First, the ground for inter-relations that results from the common perception of this liberating effect seems to foster voluntary respect for the possessions of each member, even when asymmetry of possessions prevails.⁹³ As examined later, the Sublime Palpation of Christian Freedom appears to form the core of the internalization of the sense of justice characteristic of a Reformed free society. Second, the operation of this Sublime Palpation seems to allow the mind to remain focused and undisturbed by continuous pressure from the violent passions. Weber thought this important cognitive effect to be the basis of high levels of labor productivity, patterns of consumption and investment, and the propensity to save associated with an indirect or residual form of capital accumulation. Finally, the supra-somatic marking effect related to the Sublime Palpation of Christian Freedom appears to heighten the condition of the poor and weak that forms the basis of informal and spontaneous safety nets. This supra-marking effect seems essential to the development of informal channels of wealth distribution that allows for the correction of natural conditions of disparity and asymmetry of possessions, as described in chapter 4.

⁹³ The assumption of symmetrical wealth distribution is an important presupposition in the characteristic elements of the society that Hume considers as efficient means to address the problem of slavery to passions. In this regard, says Hume, “I observe that it will be for my interest to leave another in the possession of his goods, provided he will act in the same manner with regard to me. He is sensible of a like interest in the regulation of his conduct” (Hume 1978, 490, *italics in the original*). It is plain to note that Hume joins the mutual interest of self-restraint in the preexistence of a fair symmetry regarding possessions, a condition uncommon in the human natural state that cannot be efficiently and peacefully enforced. If this symmetry of possessions is then a requisite in order to guarantee mutual cancellation among equal levels of selfishness, this virtuous effect of society difficultly appears among those with different levels of possessions and remains absent of those without possessions. Therefore, it seems more congruent with the notion of human nature described by Hume’s hermetic system to conclude that no institution such as a society, or idea such as the convention of mutual respect of possessions, can redirect or confront the powerful enslaving effect of violent passions. As discussed earlier, what Hume truly sees at the basis of this idea and institution is self-control, or “the power of the mind,” which he acknowledges to be a very rare “virtue” of the human race.

In sum, the assumption of infiniteness that dominated Hume's cognitive system also formed the basis of a moral system without first absolute cause and necessary first Agent. The closed system of emotions resulting from this assumption considers only somatic impressions as objects with a certain external existence. Among these impressions, the passions of lust, pride, anxiety, and fear appear capable to overcome and subdue reason, as well as all other weak passions like love and humility. The only alternative left in an infinite system closed to the intervention of any first cause is the redirection of lust through the check that other members of society exercise, according to the oblique satisfaction of their own selfishness. This forms the core of the balances of pride and selfishness that Hume observes in the conventions and agreements made by society with the hope of alleviating the inconveniences of life. Although society cannot control or subdue these violent passions, Hume assumes that it provides the context for these passions to be "redirected" or "obliquely" satisfied. Given these considerations, morality remains for Hume the external appearance that masks the violence of basic passions of selfishness for the purpose of their gratification within society.

Only in the very last pages of his *Treatise of Human Nature* does Hume confront the implications of his assumption of infiniteness regarding the universal chain of causations and of a closed system of emotions. This confrontation reflects his search for the sources of the "sense of morals" that he acknowledges as resulting from an innate principle in human nature. At the end of his *Treatise*, Hume finally recognizes this principle as much more than a disguising artifact that guarantees social gratification of pride and selfishness. He openly recognizes that "besides all those qualities, which render a person lovely or valuable, there is a certain *je-ne-sçai-quoi* of agreeable and handsome, that concurs to the same effect" (Hume 1978, 612, italics added). Different from the advice that he previously gave to politicians and moralists to promote the redirection or satisfaction of unconquerable violent passions, Hume acknowledges here the authority of

those moralists who “account for all the sentiments of virtue by this sense,” and considers their hypothesis as “very plausible” (Hume 1978, 612). In his final statements, Hume acknowledges the existence of this innate sense of morals required for the proper perception of all virtues. Accordingly, he notes that “it requires very little knowledge of human affairs to perceive, that a sense of morals is a principle inherent in the soul, and one of the most powerful that enters into composition....This observation may be extended to justice, and the other virtues of that kind. Tho’ justice be artificial, the sense of its morality is natural” (Hume 1978, 619). Hence, Hume recognizes the presence of an innate principle in human nature that allows for the perception of the “sense of morals” indispensable to counteract the slavery to passions, as well as to form a just, peaceful and free society.

This recognition forms the basis of the main critique that Palpational Rationality erects against a model of cognition assigning preponderance to the effect that basic emotions like lust and fear exercise on reasoning and decision making. Similarly, this recognition agrees with the modifications that Palpational Rationality offers to Weber’s view of anxiety and Predestination as factors underlying the developmental effect of Protestantism. The alternative foundations of Palpational Rationality regarding the finiteness of the universal chain of causation and openness to the set of emotions seems in line with the human capability to perceive meta-somatic impressions like those that Hume recognized in the “sense of morals.” The Principle that determines the perception of this sense of morals resembles the liberating effect that Palpational Rationality attributes to the Sublime Palpation of Christian Freedom. This liberating effect seems to determine the form of reasoning and decision making at the core of developmental preferences distinctive of a just, peaceful and prosperous society, which forms the essence of the Protestant Ethic of Development.

3 Nature, Roots, and Developmental Outcomes of Palpational Rationality

The modifications of Palpational Rationality to Economic Rationalism stress the effect of the Sublime Palpation of Christian Freedom in contrast to the importance that Weber assigns to anxiety related to Predestination. In line with the importance Hume assigned to beliefs as markers of emotions in decision making, the present chapter evaluates the nature of the Sublime Image at the core of Palpational Rationality. The liberating imprint of the Sublime Image on the human mind forms the essence of the developmental effect that the present dissertation attributes to the Sublime Palpation of Christian Freedom. The liberating nature of this Sublime Palpation is examined according to the roots of Palpational Rationality found in the views of Augustine, Luther, and Calvin. In this context, this chapter examines the role that the approach at the basis of Palpational Rationality appears to have played on the Scientific Revolution in post-Reformation Europe, and on the recent assessment of Palpational Rationality's core assumption of finiteness.

Contrary to the psychological force that Weber assigns to anxiety related to predestination, the liberating effect of the Sublime Palpation of Christian Freedom seems to manifest itself in a form of joy emblematic of higher levels of subjective well-being. With basis in recent empirical macro-level analyses, chapter 1 presented the higher rank that Protestant societies have historically achieved of an "individual sense of freedom" that, in turn, is associated with higher levels of economic development (1997,; Inglehart and Baker 2000). This empirical evidence confirms the association between the assimilation of Protestant beliefs, the expression of values stressing an "individual sense of freedom," and the attainment of increased levels of economic development that forms the core argument of the present dissertation. Yet, one of the most salient findings highlights the effect that the assimilation of the Protestant "sense of freedom" has on increased levels of subjective well-being (SWB) (Inglehart et al. 2008). The present dissertation

suggests that the joy described in these higher levels of subjective well-being is manifested in the optimal evaluation and choice of outcomes that renewed individuals perform in the context of the most complex social and moral situations. This state of subjective well-being substantially differs from the coercive psychological force of any doubt regarding “certitudo salutis,” and is characterized by the deep joy that results from palpating the Sublime Image of God’s love in Christ, as detailed later.

The transformation of reasoning and decision-making capabilities underscored by Palpational Rationality is not primarily characterized by its resulting developmental preferences in the social, civic, and economic realms, but by the experience of this “complete” form of joy and happiness related to freedom from the enslaving effect of innate feelings.⁹⁴ Palpational Rationality’s focus on the joy produced by the Sublime Palpation of Christian Freedom substantially differs from the psychological force determined by predestinarian anxiety characteristic of Economic Rationalism. According to Palpational Rationality, the economic developmental nature of the decision-making process and preferences associated with the Protestant ethic do not appear as main outcomes but only as the accessorial effect of its unique liberating imprint. In this sense, the Protestant Ethic of Development underscores the joy associated with higher levels of subjective well-being that results from the liberating effect of the Sublime Palpation of Christian Freedom on violent innate feelings such as lust, pride, anger, anxiety and fear.

Augustine summarizes the essence of the Christian religion in the understanding of God as the true giver of happiness.⁹⁵ The inseparable outcome conjoined to the liberating effects of the

⁹⁴ Christ describes the liberating effect that results from the joy of experiencing His freedom, when affirming: “If you keep My commandments, you will abide in My love; just as I have kept My Father’s commandments and abide in His love. These things I have spoken to you so that My joy may be in you, and that your joy may be made full. This is My commandment, that you love one another, just as I have loved you” (John 15:10-12). Regarding the liberating essence of His truth, Christ asserts that “If you hold to my teaching, you are really my disciples. Then you will know the truth, and the truth will set you free” (John 8:31-32). In their conjunction, these verses reflect the innermost liberating effect that Palpational Rationality assigns to the Sublime Palpation of Christian Freedom.

⁹⁵ Among the extensive spectrum of gods within Greek theology, Augustine notes that none was consecrated as a provider of happiness. Happiness was considered by the Greeks as a gift from the true God, even though they consecrated

Sublime Image points toward the attainment of happiness, which is here considered as indissolubly united to the Sublime Palpation of Christian Freedom. The realization of this highest human desire can be accomplished only by the true God who provides happiness in the same act in which He provides true freedom, since both outcomes are indissolubly joined. Following Augustine's reasoning, Calvin asserts that Christ's call to remain and persevere in His love determines the liberating effect and complete joy that this dissertation attributes to the palpation of the Sublime Image of God's love for the human race. Calvin asserts that the Lord invites each individual to remain continually united to "that faith which perceives the undeserving love of Christ toward us, and a new conscience and newness of life" (Calvin 1956, 113). The completeness of this joy is, as Calvin affirms, not a state in which the believers will be entirely free from all sadness, but one in which the ground for joy will be greater, "so that no dread, no anxiety, no grief will swallow them up; for those to whom it has been given to glory in Christ will not be prevented, either by life, or by death, or by any distresses, from bidding defiance to sadness"(Calvin 1956, 115).

3.1 Roots of Palpational Rationality

The roots of Palpational Rationality are found in the adoption of Augustine's integral method of inquiry as first assimilated by Luther and Calvin. This method proposed the integral understanding of human nature as an inseparable union of body, heart, mind and soul, which greatly contrasted with the dualistic view of Aristotelian and Cartesian philosophy. In a precursor statement distinctive to the approach of Palpational Rationality, Augustine declared: "I know that I am, so I know this also, that I know. And when I love the two things, I add to them a certain third thing, namely, my love, which is of equal moment" (Augustine 1950, 371). The traditional

as deities many other gifts also attributed to the only God. It is this notion of true happiness that Augustine uses to demonstrate why the Greek and Roman gods were not considered as providers of eternal life, because as he observes "He only who gives true happiness gives eternal life, that is, an endlessly happy life" (Augustine 1950, 205). In this respect, eternal life is no other thing than complete and eternal happiness, in opposition to the other possible destiny of the soul in eternal or never-ending death.

understanding of reasoning in Aristotelian, Scholastic and Cartesian philosophy built upon the separation of existence and knowledge from emotions such as love; treating the first two elements independently from the last. Instead, Augustine considered these states of the being as an indivisible “unum.”⁹⁶ As Augustine affirmed, “to exist is, in nature, pleasant, as well as the human nature loves the knowledge of its existence, and how it spontaneously shrinks from both dying and being deceived” (Augustine 1950, 371-372). The knowledge of one’s existence is perceived by the bodily senses in such a way that one does not judge them by these same senses. Concerning the human capability to perceive what this dissertation calls the Sublime Palpation of Christian Freedom, Augustine noted that “we have another and far superior sense, belonging to the inner man, by which we perceive what things are just, and what unjust.... By it I am assured both that I am, and that I know this; and these two I love, and in the same manner I am assured that I love them.... For he is not called a good man who knows what is good, but who loves it” (Augustine 1950, 372). As examined in the neurobiological evidence discussed in chapter 6, the integral understanding of the complexities of human nature points toward the conjoined consideration of physical, cognitive, and emotional capabilities.

Augustine’s integral perspective suggests the reflection in human nature of the Trinitarian essence of God, from which the image of God’s Supreme self has been reflected into the likeness of the human self (Augustine 1950, 371-372). There seems to be no evidence that human nature ever had a “being” or ontological state that preceded its “thinking” or cognitive state, just as it appears equally baseless to say that human nature first achieves the realization of its “thinking” before being aware of its “being.” Descartes’ (1664) proposition “*cogito ergo sum*” (I think, therefore I am), and the alternative, “*sum ergo cogito*,” (I am, therefore I think) imply incomplete

⁹⁶ According to Augustine, emotion, reason and will are the hallmarks of the single nature of the Trinity in human beings, so they cannot be considered separately but jointly. The opposite view that followed Aristotelian cosmology resulted in a purely rationalistic perspective, sustaining that existence and knowledge could be understood independently of the final end common to both (Augustine 1950, 371-372).

definitions of human nature's complexities. First, these perspectives assume a form of dualism that derives from conceiving human nature's existence and its rational capabilities as two states of different moments. Second, they exclude the all important dimension of feelings and palpations as integrative and distinctive elements of the same human nature. Positions following the dualistic Cartesian view have now been exposed in their intrinsic fallacies by the empirical evidence provided through recent neurobiological discoveries, as explained in chapter 6. Different from the dualistic perspectives, a view that seems more in line with neurobehavioral evidence suggest a complex understanding of human nature (being, thinking and feeling) as Augustine highlighted in his seminal interpretation of human nature from Scriptures (Augustine 1950, 372).

3.1.1 Augustine's View of the Approach Underlying Palpational Rationality

Augustine's seminal formulation of the method at the root of Palpational Rationality assessed the enslaving effect of innate feelings on human reason, as well as the liberating effect that this dissertation assigns to the Sublime Palpation of Christian Freedom. Augustine addressed the enslaving effect of innate feelings through his Scriptural examination of lusts and fears of the flesh; an effect that has been suggested by empirical neurobiological evidence as discussed in chapter 6. The somatic-marking effect of pleasure-seeking feelings corresponds to the Biblical understanding of the lusts of the flesh, while that of pain-averting feelings alludes to the Biblical notion of the fear of death. In like manner, Augustine emphasized the liberating effect that this dissertation gives to the palpation of the Sublime Image of God's love for the human race over the enslaving imprint of basic feelings. Thus, Augustine integrative notion of human nature implies that God's Love through Christ's ministry never separated human nature into mind and body. Instead, it holds that human nature consists in a being, or body, and thinking, or mind, which are parts of the same "unum." Additionally, this unity encompasses the capability to feel

emotions, or heart, as well as the soul, or the capability to palpate the Love of God manifested through Christ's redemptive ministry.⁹⁷

According to Augustine, the soul is the depository of that unique potential of the human race to perceive the manifestations of God's Love, a concept that this dissertation assigns to the notion of the Sublime Image of God's love for the human race. The palpation of this image is only a potentiality in human beings whose actualization constitutes the essence of the liberating effect assigned to the Principle of Christian Freedom. This actualization appears as pivotal for human nature to transcend the utilitarianism related to the instinct of self-preservation, or "homo economicus." Rather, it appears to move the human condition to behave against such instincts and to determine behaviors distinctive of "homo moralis." In this freedom, human action and nature seem influenced and transformed by the marking effect of the meta-somatic Sublime Image of God's love.

Augustine's adoption of the method that forms the root of Palpational Rationality contrasts with the main tenets of Aristotelian philosophy that assigned undisputed supremacy to pure reason. Augustine is among the first classic authors to identify the importance of the emotional dimension in human nature. He affirms that no one is blessed who does not enjoy that which is loved, for even they who love things which ought not to be loved do not count themselves blessed by merely loving, but by enjoying them (Augustine 1950, 253). Augustine observes that the true worship of God is called in Latin "religion," which derives from "religere" or to "re-attach," through which human beings, who have detached themselves and lost hold of God, are "cleansed from all of our stains of sins and evil passions, and are consecrated in His name" (Augustine 1950, 306). Accordingly, the "summum bonum," or highest good of the human race, is no other

⁹⁷ The integration characteristic of Augustine's human nature follows Christ's teaching regarding the constitutive parts that must be equally involved in the act of loving God: "YOU SHALL LOVE THE LORD YOUR GOD WITH ALL YOUR HEART, AND WITH ALL YOUR SOUL, AND WITH ALL YOUR MIND, AND WITH ALL YOUR STRENGTH" (Mark 12:30; Luke 10:27).

than to be united and remain united with God.⁹⁸ For Augustine, this forms the true worship of God, the true religion, the proper piety and service to God: “if any mortal power, then loves us as himself, he must desire that we find our happiness by submitting ourselves to Him, in submission of whom he himself finds happiness” (Augustine 1950, 307).⁹⁹

In a seminal statement that is foundational to this dissertation’s notion of Palpational Rationality, Augustine asserts that the only principle of all things through which the human race can be purified is Christ, the Word. Different from the Platonists, who talked about a plurality of principles, Augustine puts forth a singular Principle that results from the existence of only one God. He affirms that “the Principle is neither the flesh nor the human soul in Christ, but the Word by which all things were made. The flesh, therefore, does not by its own virtue purify, but by virtue of the Word by which it was assumed” (Augustine 1950, 329).¹⁰⁰ Thus, Augustine underscores that the enjoyment of God involves being united to Him through the Word: Christ, who is the principle in which that “summum bonum” finds its existence and origin.

In contrast to the source of the “summum bonum,” Augustine notes that the evils of the soul do not proceed from the body. Humans became like the devil when they willed to live according to themselves and not according to the truth that is only found in God. Humanity was

⁹⁸ The centrality of this unity is plainly expressed in the commandment of the LORD to “abide in My love; just as I have kept My Father’s commandments and abide in His love. These things I have spoken to you so that My joy may be in you, and that your joy may be made full” (John 15: 9-11).

⁹⁹ The “summum bonum” of the renewed individual is to be united to God, for as David also exclaims, “the nearness of God is my good” (Psalm 73:28). This is the context in which Augustine sublimely answers the quest of all philosophers for the end and good that must inform all duties and human endeavors: “whatever virtue we call our own is itself bestowed upon us by His goodness. . . . By this grace of God, wherein He has shown His great compassion toward us, we are both governed by faith in this life, and after this life, are led onwards to the fullest perfection by the vision of immutable truth” (Augustine 1950, 327).

¹⁰⁰ In the understanding of the miracle of the incarnation, Augustine observes that “the grace of God could not have been more graciously commanded to us than thus, that the only Son of God, remaining unchangeable in Himself, should assume humanity, and should give us the hope of His love, by means of the mediation of a human nature, through which we, from the condition of men, might come to Him who was so far off—the immortal from the mortal; the unchangeable from the changeable; the just from the unjust; the blessed from the wretched. And, as He had given us a natural instinct to desire blessedness and immortality, He Himself continuing to be blessed, but assuming mortality, by enduring what we fear, taught us to despise it, that what we long for He might bestow upon us” (Augustine 1950, 336). The perfection of that union takes place when “all that is to be redeemed in us has been redeemed,” but until that final perfection in our union with God takes place, we ought to place our hope in God, “for in hope we have been saved” (Romans 8:24) (Augustine 1950,331).

made upright because it was intended to live according to God, the true source of happiness. Hence, explains Augustine, “in its own kind and degree the flesh is good; but to desert the Creator’s good, and live according to the created good, is not good, whether a man choose to live according to the flesh, or according to the soul, or according to the whole human nature” (Augustine 1950, 446). He claims that “where desire can exist, certainly pain also can exist; for desire frustrated, either by missing what it aims at or losing what it had attained, is turned into pain” (Augustine 1950, 766). Hence, the evils of the soul proceed from the bad will of humans because if it is wrong, then the motions of the soul will be wrong, and blameless or praiseworthy if it is instead right.

For Augustine, the four emotions, desire, fear, joy and sorrow, are nothing else but will. Desire and joy are a “volition of consent of the things we wish” and fear and sadness “a volition of aversion from the things that we do not wish” (Augustine 1950, 447). Given these considerations, Augustine notes that, “good and bad men alike desire, fear, rejoice, but the former in a good, the latter in a bad fashion, according as the will is right or wrong” (Augustine 1950, 451).¹⁰¹ Augustine concludes that “he who resolves to love God, and to love his neighbor as himself, not according to man but according to God, is on account of this love said to be of a good will; and this is in Scriptures more commonly called charity, but it is also, even in the same books, called love” (Augustine 1950, 448).

In brief, Augustine highlights the importance that the present dissertation assigns to the Sublime Palpation of God’s love for the human race, in contrast to the focus that Weber places on anxiety as the basis for the developmental effect of the Protestant Ethic. Underscoring the effect that the palpation of God’s love has on the slavery of innate emotions, Augustine emphasizes that

¹⁰¹ This double meaning is addressed by the Apostle Paul when saying that “the sorrow that is according to the will of God produces a repentance without regret, leading to salvation, but the sorrow of the world produces death” (2 Corinthians 7:10).

“a good life has all these affections right, a bad life has them wrong” (Augustine 1950, 455).¹⁰²

Hence, the liberating effect that the present dissertation attributes to the Sublime Palpation of Christian Freedom coincides with Augustine’s view on the human perception of God’s well-directed love, by which the enslaving effects of innate feelings can be brought under control.

3.1.2 *Luther’s View of the Approach at the Core of Palpational Rationality*

The liberating effect that this dissertation attributes to the Sublime Palpation of Christian Freedom, as meticulously treated by Augustine, seems to also form the basis of Luther’s revolutionary rejection of the Aristotelian philosophical system. Luther challenged the late medieval Scholastic theology in two main ways: first, he exposed the inabilities of syllogistic logic of a-priori argumentation as a means to know the universe. Second, he rejected the use of Aristotle’s ethics as a foundation for theology and for the determination of good actions. Luther considered Aristotle’s moral system as opposing the principle contained in Scriptures, and acclaimed by Augustine, of “justification only by faith.” Further, he rejected many conclusions of the Aristotelian system as contrary to the evidence of the senses, which moved Luther to advocate for a rather empirical approach to study the physical truths of God’s creation. This rigorous method of inquiry appears reflected in the new disposition of reformed Christian scientists to only rely on empirical evidence in order to attain an understanding of the universe. As explained later in this chapter, it is precisely the departure from the Aristotelian tenets of Scholastic theology that points toward the most distinctive forces driving the formidable advances made in science and technology during the next two centuries of “Scientific Revolution.” On these grounds, the present dissertation argues that the integration of Scriptural revelation and empirical experience in the enquiry

¹⁰² Thus, Augustine notes that the citizens of the City of God live after the Spirit, not after the flesh, or according to God, not according to themselves, while the society of the wicked, “who live not according to God but according to man, and who accept the doctrines of men or devils in the worship of a false and contempt of the true divinity, is shaken with those wicked emotions as by disease and disturbances” (Augustine 1950, 456).

of God's nature and the universe formed the basis of the Protestant Reformation and the subsequent Scientific Revolution. As such, the adoption of the Principle of Christian Freedom resulting from the Augustinian influence seems to have substantiated Luther's reaction against Aristotle's philosophical system, and to have preceded the work of reformed scientists who challenged the Aristotelian view of the physical world.

Augustine's *Commentaries of Paul's Letters to the Romans and Galatians*, as well as his own *Letters against Pelagius*, were among the most influential sources for Luther's adoption of the integrative system of inquiry at the basis of Palpatational Rationality.¹⁰³ Augustine's commentary on Romans guided Luther to the understanding of Scriptures from a perspective that was inspirational, sublime, and at the same time empirical. This constitutes an approach that was completely different from the Scholastic reliance on a-priori, rational or logical inquiry. In his interpretation of Romans 3:20,¹⁰⁴ Luther expresses transparently the core of the Principle of Christian Freedom as also understood by Augustine, with emphasis on the distinction that the apostle makes between the works of the Law and the works of faith: "The works of the Law are those, he says, which take place outside of faith and grace and are done at the urging of the Law, which either forces obedience through fear or allures us through the promise of temporal blessings. But the works of faith, he says, are those which are done out of the spirit of liberty and solely for the love of God. And the latter cannot be accomplished except by those who have been justified by

¹⁰³ In 1516 Luther advanced the study on Augustine's commentary on Romans, marking a radical change in his understanding of God's nature. No longer is Luther in continual confrontation with the judging nature of God, as in the case of his severe visitations and "Anfechtungen," or inner disputations. Luther observed that he was "brought to the very depth and abyss of despair, so that I wished I had never been created a man, before I realized how salutary that despair was, and how near to grace" (Luther 1955, v. 33, 190). The understanding of God's nature as implacable judge was then complemented with the other and most defining element of God's image as liberator, according to the grace that He has poured upon human nature through Christ. Consequently, the lectures on the Psalms that Luther gave from 1513 to 1515 that had a focus on humility as the only source of righteousness were radically changed in 1516, when he lectured on the book of Romans. Showing the characteristic freedom-based element of his reformatory theology, Luther turns to underscore the essence of Christ's freedom received from the perception of God's Supreme Self (Brecht 1985, 136).

¹⁰⁴ "Because by the works of the Law no flesh will be justified in His sight; for through the Law comes the knowledge of sin" (Romans 3:20).

faith” (Luther 1955, vol. 25, 234). From Augustine’s work *Contra Julianum*, Luther further sharpens his understanding of the nature of this Freedom in his attack on the main tenets of Scholastic theology, as observed in the realization that “all our good is outside of us, and this good is Christ” (Luther 1955, vol. 25, 267). Thus, in opposition to Aristotle and to the Scholastics who supported the notion that the original sin and mortal sins were removed by means of good works, Luther argues that “in the believer a sinful disposition continued to exist, although it was not imputed” (Brecht 1985, 165).

Luther’s palpational approach to understand Scripture seems to form the basis of his main opposition to the rationalistic method employed by the Scholastics. In his lectures on Psalm 85, Luther emphasizes the method of “listening in faith” that the Lord used to reveal His truth to humanity before the coming of Christ; in comparison to that fuller revelation that is performed “by sight and in reality” (Luther 1955, vol. 11, 159). The “listening in faith,” integrated with the outpouring of grace, constitutes the inner palpation or “utterances of the heart” that directs reason to the true understanding of Scriptures (Luther 2000, vol. 55, 2).¹⁰⁵ In this manner, Luther revives the Augustinian approach to the study of Scriptures that highlights the liberating effect that this dissertation assigns to the Sublime Palpation of Christian Freedom.

Luther’s studies of the *Epistles to the Romans and Galatians* led the Reformer to a new understanding of God’s nature through the knowledge of Christ’s Law of Freedom. Acknowledging the influence of Augustine’s interpretation, Luther declares to have found the greatest understanding of the nature of God, humanity, and of all things that exist. In this novel approach, Luther laid the foundations for the revival of a methodology of studying Scriptures that was in itself

¹⁰⁵ In his lecture on Psalm 41, Luther addresses this integration of both methods as the blessedness of true understanding: “it has often been said that in Scripture ‘understanding’ is not applied to those who have enough thought only for the things they see and feel, for in this respect man is compared to the brutes, but to those who think of spiritual and invisible things, which cannot be done in this life except by faith” (Luther 1955, vol. 10, 190). This integrated method is possible only through the mediation of God’s grace, which is poured upon the lips (Psalm 45:2), and moves them not to express the bare words concerning the merely physical world, but to speak spiritually in a form of speech that is “the utterance of the heart” (Luther 1955, vol. 10, 216).

opposed to the traditionalistic methods of universities that—in his view—had left Scriptures in ruin (Brecht 1985, 141).¹⁰⁶ Thus, Luther receives from Augustine the importance of God’s love as the sublime impression that directs individuals towards right actions, and its absence as the source of sin. As Luther notes regarding Augustine’s central theme in the 29th *Epistle*: “Love is the power by which a person loves what he ought to love... it is never in its fullest degree, so that it could not be further increased, in any man as long as he lives. But as long as it can be increased, what is less than it ought to be, comes from sin” (Luther 1955, vol. 25, 276).

Luther also follows Augustine’s understanding of the necessary intercession of the Spirit to actualize freedom in the mind and will. This is evident in his quoting from the Patriarch’s *De Spiritu et Littera (On the Spirit and the Letter)*, when declaring that the “teaching by which we receive the command to live continently and uprightly is the written code that kills, unless the life-giving Spirit is present” (Luther 1955, vol. 25, 325). Luther came to define a clear formulation of the Doctrine of Freedom that substituted humility as the core of his theology, within the context of an innovative and integrative method of Scriptural examination. He observes that the “so-called moral interpretation of Scripture, which more correctly is the spiritual interpretation, deals with nothing but love and the attitude of the heart, with nothing but the love of righteousness and the hatred of iniquity; that is, when we ought to do something or give up doing something. And we must understand that this must be done or omitted with the whole heart, not with fear of punishment in a lavish manner or because of some puerile desire for comfort, but freely and out of Love for God, because without the love which has been poured out through the Spirit, this is impossible” (Luther 1955, vol. 25, 325). In this manner, Luther categorically rejects the

¹⁰⁶ The deep transformation that Luther underwent in 1516 with his studies and lectures on Romans was fully completed with the culmination of his lecture on Galatians in 1517. These studies drastically changed the dominant theme of his theology from humility to freedom (Brecht 1985, 137). From this new liberating perspective, the humiliation of the sinful is not what separates but what unites the human race to God. As he asserts in his commentary to Romans 4:7, blessed is the one whose sin is covered “that is, the very tinder of sin itself, through the nonimputation of God because of the humility and cry of faith for it” (Luther 1955, vol. 25, 271).

effect of anxiety as factor determining the goodness of life found at the core of Weber's Economic Rationalism. Rather, Luther emphasizes the liberating effect that Palpatational Rationality assigns to the Sublime Palpation of God's love through Christ's liberating ministry, which forms the essence of the Protestant Ethic of Development.

Perhaps one of the most important evidences of Luther's reception of the method at the core of Palpatational Rationality is found in his *Disputatio contra Scholasticam Theologiam* (*Disputation against Scholastic Theology*).¹⁰⁷ This influential work amounts to Luther's public rejection of Aristotle's dominance in theology that was received by the Scholastic tradition in the understanding of the physical world and God's nature.¹⁰⁸ In the *Disputation against Scholastic Theology*, Luther relies on the authority of Augustine's anti-Pelagian writings against scholasticism to bring forth what was also the central argument of his Romans lectures: the denial of human nature to accomplish or even think anything good without grace, and of free will's power to turn itself towards grace.

Luther's focus on Christian Freedom manifests itself in his treatment of the nature of human slavery to sin, and the liberating power from such slavery that he considers only efficacious

¹⁰⁷ The change in the conception of God's nature, through His liberating ministry in Christ, appears to have been the vehicle through which Luther started a revolution in Wittenberg that further influenced the understanding of the physical world in the new sciences. Luther's *Disputation against Scholastic Theology* was at first opposed by his colleagues in Wittenberg, especially by the Scotist Nicholas von Amsdorf, Andreas Bodenstein Karlstadt and Petrus Lupinus (Brecht 1985, 167-168). Nonetheless, thanks to Luther's influence, they progressively converted to a sublime understanding of human nature and freedom, as Amsdorf and Karlstadt were introduced to the reading of Augustine's main writings (Brecht 1985, 168-169). As a result of this conversion, they also came to reject the use of Aristotle's *Logics* and *Ethics* in theology. In the case of Karlstadt, the reading of Augustine allowed him to discover how the scholastic edifice collapsed after being confronted with Augustine's method of interpreting Scriptures. Hence, by mid 1517, Augustine's teachings had already made deep inroads in the university, as Luther acknowledged in a letter to Lang in May 1517: "our theology and St. Augustine are progressing well, and with God's help rule at our university. Aristotle is gradually falling from his throne, and the final doom is only a matter of time" (Brecht 1985, 170-171).

¹⁰⁸ On September 4, 1517, Luther publically defended the ninety-seven theses *Against Scholastic Theology*, which preceded his famous defense of the Ninety-five Theses, or *Disputatio pro declaratione et virtutis indulgentiarum* (*Disputation on the Power and Efficacy of Indulgences*), the most famous of Luther's theses. Luther submitted the *Disputatio pro declaratione et virtutis indulgentiarum* enclosed with his letter to the Archbishop Albrecht of Mainz on October 31, 1517, concerning the indulgences for St. Peter's that were circulated under the archbishop's name. Disputably, Philipp Melanchthon said that Luther posted these theses on the church of All Saints on October 31, 1517 (Brecht 1985, 172, 190, 200).

through God's grace (Luther 1955, vol. 31, 9-15).¹⁰⁹ The general state of human slavery is particularly revealed in the slavery of the will, for "it is false to state that the will can by nature conform to correct precept"; instead, he affirms that "it is peculiar to it that it can only conform to erroneous and not to correct precepts" (6, 15). Accordingly, says Luther, "one must concede that the will is not free to strive toward whatever is declared good" (10). The most serious consequence of this state of slavery of the will, and of the human nature as a whole, is its incapability to love God without God's mediation. Thus, observes Luther, "it is absurd to conclude that erring man can love the creature above all things, therefore also God." Given these considerations, Luther asserts that "since erring man is not able to love the creature, it is impossible for him to love God" (13, 16). Luther states that to love God above all things by nature is a fictitious undertaking, "a chimera," for "no act is done according to nature that is not an act of concupiscence against God," and "every act of concupiscence against God is evil and a fornication of the spirit" (18, 21, 22). As he concludes, "man by nature has neither correct precept nor good will" (34).

Luther's adoption of the integral perspective that forms the basis of Palpational Rationality seems most evident in his understanding that freedom from this state of ultimate slavery is only possible through the perception of God's love through Christ's redemptive ministry. He asserts that "the grace of God is never present in such a way that it is inactive, but it is a living, active, and operative spirit; nor can it through the absolute power of God act so that an act of love may be present without the presence of the grace of God" (Luther 1955, vol. 31, 55). Luther boldly declares that "as a matter of fact, without the grace of God the will produces an act that is perverse and evil" (7). In brief, Luther undermines the *Ethics* and *Logics* serving as pillars of the Aristotelian system by rejecting any power in human nature to liberate itself from such an insur-

¹⁰⁹ For Luther, it is true to say that "man, being a bad tree, can only will and do evil," and that it is false "to state that man's inclination is free to choose between either of two opposites" (4, 5). The natural state of humanity is one of slavery and servitude to sin, for nature "inwardly and necessarily glories and takes pride in every work which is apparently and outwardly good" (37). In consequence, "we are never lords of our actions, but servants," and "there is no moral virtue without either pride or sorrow, that is, without sin" (Luther 1955, vol. 31, 38-39).

mountable slavery. On this account, Luther declares that “we do not become righteous by doing righteous deeds but, having been made righteous, we do righteous deeds” (40).

Regarding *Logics*, Luther’s opposition is the most frontal to the hegemonic pretense of Aristotle’s cognitive system because “in vain does one fashion a logic of faith, a substitution brought about without regard for limit and measure” (Luther 1955, vol. 31, 45, 46). Luther asserts that “no syllogistic form is valid when applied to divine terms” (47).¹¹⁰ He condemns the use of logics in the study of the most sacred doctrines because “if a syllogistic form of reasoning holds in divine matters, then the doctrine of the Trinity is demonstrable and not the object of faith” (49). In diametric opposition to the postulates of Aristotle’s *Ethics* and its integration into the exegesis of Scriptures through *Logics*, Luther proclaims that only the mediation of God’s grace allows human nature to act in a manner that is truly or inwardly friendly, righteous, just and loving to God.¹¹¹ As in the case of Augustine, Luther considers that the righteous acts able to control the lusts of the flesh and the fear of death result only from prevenient grace. Stressing that “God cannot accept man without his justifying grace,” Luther acknowledges that “it is by the grace of God that one does not lust or become enraged,” for “outside the grace of God it is indeed impossible not to become angry or lust, so that not even in grace it is possible to fulfill the law perfectly” (Luther 1955, vol. 31, 56, 67, 65). Here, Luther masterfully describes the essence of the liberating power of Christian Freedom at the core of Palpatational Rationality, for as he concludes, “it is impossible to fulfill the law in any way without the grace of God” (68).

¹¹⁰ Here Luther ventilates his opposition to the views of the Cardinal of Cambrai, Pierre d’Ailly (1350-1420), a French theologian and commentator on the *Sentences of Peter Lombard*, one of the most influential works at the time, which integrated Aristotelian *Logics* into the exegesis of Scriptures.

¹¹¹ Regarding friendly actions, Luther boldly states that “for an act to be meritorious, either the presence of grace is sufficient, or its presence means nothing” (Luther 1955, vol. 31, 54). Subsequently, “an act of friendship is done, not according to nature, but according to prevenient grace,” but “an act of friendship is not the most perfect means for accomplishing that which is in one;” for “it is an act of conversion already perfected, following grace both in time and in nature” (20, 26, 27).

Luther sustains that there is no justice in the deeds of the human race without the preceding liberating work of God's grace. He stresses that the "law and the will are two implacable foes without the grace of God" given that "the law makes sin abound because it irritates and repels the will" (Luther 1955, vol. 31, 71, 74). Without grace, a deed may have the appearance of being just without intrinsically being so, because "every deed of the law without the grace of God appears good outwardly, but inwardly it is sin" (76). Hence, "the will is always averse to, and the hands inclined toward, the law of the Lord without the grace of God," and "the will which is inclined toward the law without the grace of God is so inclined by reason of its own advantage" (77, 78). In a formulation that reveals a seminal notion of what this dissertation calls Palpatational Justice, Luther stresses that the natural condition of human nature to make use of reason for the advancement of one's self-interest provides only an appearance of justice. Accordingly, he observes that "what the law wants, the will never wants, unless it pretends to want it out of fear or love." In a foundational reference to what this dissertation calls Palpatational Freedom, Luther affirms that the freedom perceived through the grace of God "makes justice abound through Jesus Christ because it causes one to be pleased with the law" (72, 75). In this context, Luther emphasizes the Augustinian view that is seminal to this dissertation's notion of Palpatational Rationality that assigns preeminence to the Law of Freedom in Christ in contrast with the appearance of justice that derives from observance of the natural law of self interest. This freedom allows for justice to be outwardly and inwardly observed because "the good law and that which one lives is the love of God, spread abroad in our hearts by the Holy Spirit" (84). Thus, concludes Luther, "grace as a mediator is necessary to reconcile the law with the will" because "the grace of God is given for the purpose of directing the will, lest it err even in loving God" (89, 90).

In this context, Luther underscores that the Law of Freedom in Christ remains the essence of all meritorious acts; that is, acts of inwardly true expression of love toward God. The grace of

God says Luther, “is not given so that good deeds might be induced more frequently and readily, but because without it no act of love is performed” (91). Luther’s understanding of the Principle of Christian Freedom underscores the unique transformative power of God’s Love over human nature that this dissertation assigns to the Sublime Palpation of Christian Freedom. Thus, the greatest manifestation of all loves that this dissertation sees manifested in the Sublime Image of God’s love for the human race would be utterly superfluous, if, as Luther notes, “man is by nature able to do an act of friendship” (92). In line with these considerations, Luther concludes that it is only in this love that we have “our will to conform in every respect to the will of God,” so that we not only “will what God wills” but are also aware of the duty “to will whatever God wills” (96, 97).

In addition to the profound impact Luther’s *Disputation against Scholastic Theology* had in rejecting Aristotelian thought in the study of God’s nature, this work also initiated a departure from Scholastic assumptions regarding the nature of God’s universe, as further manifested in the development of new cosmologies. Luther initiated this departure in a no longer extant commentary on Aristotelian physics, written in 1517, prior to the defense of the *Ninety-Seven Theses against Scholastic Theology*. In this work, Luther appears to have extended to the understating of the physical world his determination to no longer accept Aristotle’s views without critical examination or contradiction (Brecht 1985, 167). Twenty-six years later, in 1543, Nicolaus Copernicus (1473-1543) published *De Revolutionibus Orbium Coelestium* (*On the Revolutions of the Heavenly Spheres*), arguing that the earth is a planet revolving around the sun and rotating on its own axis, against the postulates of mathematical astronomy of Ptolemaic, and Aristotelian cosmology. Thus, the form of inquiry that Luther prompted by repudiating the logical method expounded by Aristotle seems to have opened the door to the development of the new cosmologies developed

by Nicolaus Copernicus, Giordano Bruno (1548-1600), Galileo Galilei (1564-1642), and Johannes Kepler (1571-1630).

Luther's rediscovery of Augustine's interpretation of Scriptures, especially regarding the central importance of the Principle of Christian Freedom, reflects the assimilation of a novel method of inquiry that is foundational to this dissertation's model of Palpational Rationality. As explained next, the broad application of this new model of reasoning and decision making points toward radical transformations in the understating of the nature of God and of the universe. In this regard, the departure from the a-priori method of logical analysis seems to have facilitated the development of a novel method of inquiry that is associated with the dawn of the Scientific Revolution. The departure from the Aristotelian system of *Ethics* and *Logics* also brought forward the first limits to the method of a-priori argumentations that dominated inquiries on the nature of God and of the universe during the Middle Ages. By proceeding in this fashion, Luther reintroduced the Augustinian methodology for the study of Scriptures that served as a vehicle to oppose the Scholastic preeminence given to Aristotle in the understanding of God's nature, and determined the pursuit of a similar rigorous disposition in the examination of the physical world.

3.1.3 Calvin's View of the Approach Foundational to Palpational Rationality

The sublime element in Calvin's view that is seminal to this dissertation's notion of Sublime Palpation of Christian Freedom refers to the conception of piety as a prerequisite for the knowledge of God. For Calvin, the beginning of all ethics requires the knowledge of the self, for "without the knowledge of self there is no knowledge of God," and "without the knowledge of God there is no knowledge of the self" (Calvin 1960, 35, 37). According to Calvin, it is only when willing to deny the self and recognize one's own ignorance, corruption and infirmity that one is able to grasp God's true nature; that is, the light of His Wisdom, purity and righteousness. Nevertheless, such an awareness of one's lowly state is never possible until comparing one's self

with the Supreme Self of God. Piety is required to know the self and to know God, because, as Calvin asserts, piety is “that reverence joined with love of God which the knowledge of His benefits induces” (Calvin 1960, 41). It involves not only the conception that there is a God, creator of the universe, but also the realization of the benefits that one gains by knowing Him in His unique act of redemption.

Calvin shares in the pietistic and ascetic nature that characterizes the Fathers of the Church with his palpational disposition towards the interpretation of Scriptures. Based on the Apostle Paul’s rule that all prophecy must be in accord with the analogy of faith (Romans 16:6), Calvin gives prevalence to the work of faith as a pre-condition for the highest interpretation of Scriptures (Calvin 1960, 13). Such a palpational approach requires first an absolute negation of the self. It involves, as Calvin reminds, the recognition that all are naked, only being clothed by God; empty, only filled by Him; lame, made straight by Him; weak, to be sustained by Him; slaves of sin, to be made free by Him (Calvin 1960, 13). This first step of self-denial comprises the motion to take away all occasion to glorify in the self, either in its own wisdom, strength or riches, so that the only boast may be in the knowledge of the Lord’s superior Self manifested in His kindness, justice and righteousness.¹¹²

The method of Scriptural meditation emphasized by Augustine and Luther appears to be the only means Calvin recognizes as the way to receive any gain from the knowledge of God. Calvin’s notion of piety as reverence joined with love of God can only be induced by the knowledge of His benefits through study and meditation of His Word (Calvin 1960, 94).¹¹³ Calvin recognizes the power of the integral method of inquiry and decision making at the root of Palpational Rationality, which assigns to this palpation by the “soul” the liberating effect that the Sub-

¹¹² The essence of this first step of self-denial is found in the precept of Scriptures commanding that “HE WHO BOASTS IS TO BOAST IN THE LORD” (Jeremiah 9:24, 1 Corinthians 1: 31 and 2 Corinthians 10: 17).

¹¹³ The Knowledge of God that the Father makes possible through His only bright and lively image in Christ forms the essence of Christ’s proclamation: “this is eternal life: that they may know you, the only true God, and Jesus Christ, whom you have sent” (John 17:3).

lime Image produces in the “heart,” or seat of all feelings, and in the “mind,” or seat of all thoughts. In line with the main elements of the model of Palpational Rationality described in chapter 2, Calvin’s central notion of piety recognizes that fixing the Sublime Image in the heart and mind can only take place through faith from the Scriptural narrative of this image in the Bible. Such a sublime understanding of the benefits resulting from the knowledge of the Word is also for Calvin a source of righteousness, as it allows the discerning of all the Spirit’s revelation, and protects against the enslaving effects of innate emotions like lusts and fears. Calvin confesses that this pietistic disposition involves a test that the Holy Spirit is pleased to generate in order to establish His majesty among believers. This palpational understanding of God’s liberating intercession to benefit humankind appears to dominate Calvin’s exposition of the developmental effects that the present thesis attributes to the Protestant Ethic.

3.2 Liberating Nature of Palpational Rationality

Similar to the importance Hume assigns to belief to magnify the marking effect of certain images, the supra-somatic marking that this dissertation attributes to the Sublime Palpation of Christian Freedom seems only possible through belief. According to Luther, without belief in God and in the one He has sent, the mind is unable to understand the liberating truth of God’s love for humankind. Luther sustains that without the intercession of Christ’s Spirit this type of knowledge is inaccessible to human reason. As Calvin also asserts, the sublime essence of this knowledge is self authenticated in Scripture only: “the certainty that it deserves with us, it attains by the testimony of the Spirit. For even if it wins reverence for itself by its own majesty, it seriously affects us only when it is sealed upon our hearts through the Spirit” {Calvin, 1960 #46, 80).¹¹⁴

¹¹⁴ For Calvin, the witness of the Spirit that reveals the true knowledge of God is superior to any of the most laborious exertions of the mind: “the testimony of the Spirit is more excellent than all reason. For as God alone is a fit witness of

The Sublime Image of God's love in Christ refers to the special means by which the supra-somatic nature of the Sublime Palpation of Christian Freedom seems to influence the processes of reasoning and decision making associated with higher levels of subjective well-being. According to Calvin, the knowledge of God requires the inseparable union of the study of the Word with the guidance of the Spirit. Given this mutual bond, Calvin affirms that "the Lord has joined together the certainty of His Word and of His Spirit so that the perfect religion of the Word may abide in our minds when the Spirit, who causes us to contemplate God's face, shines; and that we in turn may embrace the Spirit with no fear of being deceived when we recognize Him in His own image, namely the Word" {Calvin, 1960 #46, 95}. This mutual bond appears realized when, by the guidance of the Spirit, the Word is properly understood by the convergence of Scripture and its all-inclusive reference to the gift of salvation in Christ.

In line with the importance that Hume assigns to narratives in the process of perceiving impressions, the main elements of the Sublime Image at the core of Palpational Rationality derive from the Biblical narrative. This dissertation proposes that the Biblical narrative of Christ's redemptive ministry comprises the most salient source for the reconstruction of the Sublime Image because it constitutes the specific recount of the four acts whose images exercise supra-somatic marking effects on innate feelings.¹¹⁵ The four components of the Sublime Image are grouped according to the specific innate feeling they appear to overcome. The first two components refer to Christ's incarnation and crucifixion as God's human hypostasis.¹¹⁶ These two elements of the

himself in the Word, so also the Word will not find acceptance in men's hearts before it is sealed by the inward testimony of the Spirit"(Calvin 1960).

¹¹⁵ From a biblical perspective, the supra-somatic effect assigned to the Sublime Palpation of Christian Freedom is described in Christ's words, when saying, "If you continue in My word, then you are truly disciples of Mine; and you will know the truth, and the truth will make you free" (John 8: 31-32).

¹¹⁶ The English term "hypostasis" is used in Scriptures when referring to the person of the Son as the essence of God. Christ is "the radiance of His glory and the exact representation of His essence" (Hebrews 1:3). The noun "essence" refers to the Greek ὑπόστασις that forms a verbal substantive of ὑφίσταμαι, although generally understood in the light of the intransitive and middle ὑφίσταμαι. In its middle and passive form, the verb can be translated as "to conjecture," "to agree," "to undertake," or "to offer." This noun coincides with the following meanings that involve independent derivations of the respective verbal form: First, "to stand under (as a support);" second, "to place oneself under

Sublime Image are considered as capable to counteract the powerful feelings of the lusts of the flesh. The resurrection and ascension of Christ comprise the other two components of the Sublime Image seen as able to control the marking effect produced by the fear of death. The common substrate of these four elements consists in the representation of God's Trinitarian nature, which gives dimension and saliency to the four parts of the Sublime Image found in Augustine's view of human nature, as discussed later.

The incarnation is a representation of God's love for humanity in His willingness to perform the substitutive payment required for the redemption of the human race. Since the wage for disobeying God's commandment is death, the redemption from this punishment can be accomplished only by a unique form of human flesh able to take the place reserved for the whole human race.¹¹⁷ The relevance that the incarnation has as the first component of the Sublime Image reflects God's love in making His dwelling among the human race to produce its liberation from innate feelings of the lusts of the flesh. The part of the Sublime Image that represents Christ crucified allows for the realization of the high price paid in flesh for the freedom of the human race. The internalization of this sublime manifestation of God's love suggests a supra-somatic marker able to overcome the effect of innate feelings associated with the lusts of the flesh.¹¹⁸

(concealment);” and third, “to stand off from,” “to deposit oneself as sediment on the ground,” whence the common translation as “to be,” or “to exist.” From these definitions result the meanings of the nouns “support,” “deposit,” “sediment,” as transitive for everything that settles; whence, the philosophical sense of “existence,” or “reality,” generally found in the Latin “*substantia*” for substance. The Greek *ὑποστασις*, or “hypostasis” in its English form, alludes to anything that settles at the bottom; what remains, as the sediment, collection, deposit, or residue of something in whatever form, or the part seen of something because it manifests itself and takes concrete shape (Kittel, Bromiley, and Friedrich 1964, VIII, 572-574). These alternative definitions reveal the nature of this word as a scientific term of early development that influenced its later more philosophic use as “to come into existence,” or as the being that has “attained reality” and “come into existence.” In this specific sense, *ὑποστασις* (hypostasis) differed from *οὐσία* (ousia), or eternal being or primal matter, because hypostasis denotes the quality of the eternal being or ousia who has been manifested and taken concrete shape.

¹¹⁷ Christ is the manifestation of this universally redemptive human flesh, who in order to make the substitutive payment, “became flesh and dwelt among us” (John 1:14).

¹¹⁸ The expression of God's love for the human race manifested in Christ's liberating ministry is found in His own words: “For God so loved the world, that He gave His only begotten Son, that whoever believes in Him shall not perish, but have eternal life” (John 3:16).

The image of Christ crucified shows the punishment corresponding to the violation of God's moral code, which reason seems not able to uphold without the help of the palpation of this Sublime Image. Moreover, the crucifixion provides the realization of God's love, by which He has substituted Himself as the receiver of the capital punishment originally reserved to the human race, as the Judge who has willingly taken the place of punishment reserved to the accused. The image of Christ's crucifixion appears heightened on the mind of individuals at the crucial moment when they feel the joy and peace produced by the forgiveness of their sins. The intensity of this particular emotional experience seems to add to the intrinsic supra-marking nature of the image of the crucifixion itself, which is magnified by the belief in Christ as the crucified human hypostasis of God. Hence, the portion of the Sublime Image of Gods' love that is displayed in the image of the crucifixion is able to perform a powerful marker effect in allowing the mind to overcome the influence of innate pleasure-seeking feelings. In addition to incarnation and crucifixion, Christ's resurrection and ascension constitute the two other components of the Sublime Image that seem able to overcome the marking effect of pain-averting feelings such as the fear of death. Thus, if the resurrection refers to the promise of an eternal life after the physical death of the body, the ascension points toward the type of blessedness that consists in the most distinctive quality of such a promise. The resurrection and the ascension appear to be the components of the Sublime Image capable to produce the supra-somatic marking effect that overcomes the fear of death because they refer to the belief in the power to defeat death that Christ manifested as the fulfillment of His redemptive ministry.¹¹⁹

In the renewal of the human capability to perceive the Sublime Image of God's Love, Calvin acknowledges main attributes that are foundational to Palpational Rationality, as they were also recognized by Augustine and Luther. Augustine observed that the eyes of the mind,

¹¹⁹ The resurrection of Christ substantiates the promise given to all believers to be crowned with the same victory over death, according to His assertion: "because I live, you will live also" (John 14:19).

unless the Lord opens them, remain closed.¹²⁰ In like manner, Calvin established a visible distinction between human reason and spiritual insight, and attributes only to the latter the discernment of God's Kingdom.¹²¹ Indeed, Calvin affirms that it is only within the limits of spiritual insight that human nature can access the knowledge of God, and of His fatherly favor on our behalf, in which the salvation of the believer consists (Calvin 1960, 277).¹²² Thus, concludes the Reformer, "one cannot become wise in God's mysteries except by his gift," and again, "If we confess that we lack what we seek of God, and He by promising it proves our lack of it, no one should now hesitate to confess that he is able to understand God's mysteries only in so far as he is illumined by God's grace. He who attributes any more understanding to himself is all the more blind because he does not recognize his own blindness" (Calvin 1960, 279, 281).

Palpational Rationality builds on the primary realization that the sole mind is unable to attain Christ's liberating knowledge, for its blindness needs first to be healed by the strengthening of one's heart, which results from the palpation of the Sublime Image. Through this healing, the mind can receive the illumination that allows it to perceive Christ's truth because, as Calvin notes, there seems to be no knowledge of Christ without the assurance in the heart of the promise of His redemption and freedom.¹²³ Calvin acknowledges that "our mind has such an inclination to vanity that it can never cleave fast to the truth of God; and it has such dullness that it is always blind to the light of God's truth." Hence, "it will not be enough for the mind to be illuminated by

¹²⁰ Augustine, *On the Merits and Remission of Sins* II. V. 5 (1841), cited by Calvin (1960, 285).

¹²¹ As in the case of Augustine and Luther, Calvin adopts a reverent and humble attitude towards the knowledge of the universe and human rational capabilities. In line with this imprint, Calvin acknowledges that "here, indeed, if anywhere in the secret mysteries of Scripture, we ought to play the philosopher soberly and with great moderation; let us use great caution that neither our thoughts nor our speech go beyond the limits to which the Word of God itself extends. For how can the human mind measure the measureless essence of God according to its own little measure" (Calvin 1960, 146).

¹²² This sublime understanding of God is for Calvin perceived only in the philosophers and geniuses of human reason as "a traveler passing through a field at night who in a momentary lightening flash sees far and wide, but the sight vanishes so swiftly that he is plunged again into darkness of the night before he can take even a step, let alone be directed on his way by his help. ... Human reason, therefore, neither approaches, nor strives toward, nor even takes a straight aim at, this truth: to understand who the true God is or what sort of God He wishes to be toward us" (Calvin 1960, 277).

¹²³ In this sense, the apostle observes that "a natural man does not accept the things of the Spirit of God, for they are foolishness to him; and he cannot understand them, because they are spiritually appraised" (1 Corinthians 2:14).

the Spirit of God unless the heart is also strengthened and supported by his power” (Calvin 1960, 580-581). In a statement that summarizes the sublime nature of the palpation at the core of Palpational Rationality, Calvin concludes that “the Word of God is like the sun, shining upon all those to whom it is proclaimed, but with no effect among the blind. Now, all of us are blind by nature in this respect. Accordingly, it cannot penetrate into our minds unless the Spirit, as the inner teacher, through His illumination makes entry for it” (Calvin 1960, 582).

In sum, Palpational Rationality has its root in the integrative model of Scriptural inquiry characteristic of Augustine’s Trinitarian understanding of human nature. This precursor model emphasized the importance that Palpational Rationality assigns to supra-somatic impressions, or palpations, to counteract the enslaving effect of innate emotions on reason. The essence of this integrative approach forms the basis of Luther’s reactions to the dualistic views espoused by Aristotelian, Scholastic and Cartesian philosophy. It also defines the liberating effect that the present work assigns to the palpation of the Sublime Image of God’s love on the perception, selection and execution of optimal choices in complex situations. As described next, the extension of this integrated method of inquiry to the study of the physical world seems to have formed the core of advances manifested in the Scientific Revolution of Post-Reformation Europe. In this context, the present dissertation assesses the importance that these scientific and technological changes posited to the recent examination of Palpational Rationality’s core assumption of finiteness.

3.3 Approach at the Core of Palpational Rationality and the Scientific Revolution

The integral method of inquiry at the root of Palpational Rationality constituted a reaction against the emphasis that the Aristotelian system placed on *Logics*; particularly, the a-priori ap-

proach to understand the nature and origins of the universe.¹²⁴ This method of inquiry undermined the preeminence given to Aristotelian cosmology regarding the infiniteness of the universe, which Aristotle portrayed in the conception of an infinite time and space characteristic of his *Physics*.¹²⁵ The broad rejection of the Aristotelian system as assimilated by the Scholastics of the Roman Catholic Church became the core of a revolution with unprecedented implications in theology, philosophy and science. Through this rejection, the Reformation reinstituted Augustine's unified method to examine the nature of God, the universe, and humanity. Augustine's integrated method, as rediscovered and applied by the Reformation, forms the origin of Palpatational Rationality's approach that the present dissertation considers essential to the Protestant Ethic of Development.

The Augustinian interpretation of the Principle of Christian Freedom and its practical application into an empirical and demonstrative form of inquiry represented a formidable influence in the development of the integral method that Luther and Calvin applied to theology and philosophy, and that Galileo and Newton extended to the natural sciences. The basis of the Augustinian rules for inquiry into physical truths consists in the prudence Augustine advises for the interpretation of the Bible to avoid committing any proposition on obscure points unsupported by Scriptures. Augustine advises this prudence so as to avoid that when "the truth is more diligently

¹²⁴ In his logical, or a-priori pursuit of categorical causes, Aristotle gives preeminence to final or purposeful causes, which define the animistic or teleological character of his method. In this context, observations are used more as instruments of persuasion of a-priori conclusions than as a means for their critical test (Hetherington 1993, 24-25).

¹²⁵ The text of Aristotle's *Physics* used in this work is taken directly from the translation of the influential Arab-Spanish philosopher Ibn Bājja, or Avempace (?-AD 1138), who also followed Aristotle's view of a potential infinite as observed in motion, time, and in the assumption of an eternal series of causations. In the discussion of the foundational concepts of his *Physics*, Aristotle asserts the potentiality of the infiniteness of the universe based in the infiniteness of time, motion, and the divisibility of matter. In this regard, says Aristotle, "a complete denial of the infinite would mean that time would have a beginning and an end, that magnitudes are not divisible into magnitudes and that number is not infinite. In which way then does the infinite exist? It does not exist actually, but it exists potentially; 'potential' here having a special meaning: it is not the kind of potentiality which will become actual some time, but one whose full actuality will never be reached. The way the infinite exists is like a day, or the Olympic Games, in which one thing is always occurring after the other: in the infinite, one may always take one thing after the other, each of these things being finite. With respect to time, after a stretch of time another one always follows, and the preceding stretch of time ceases to be when the subsequent one arrives. The same holds for the human race. With respect to magnitudes, one may divide them, and continue to divide the divided parts; here what one has already divided persists when one goes on with the division." A little latter, Aristotle also extends the same argument concerning motion, for as he asserts, "time and motion are infinite only in potentiality, i.e., one cannot have a simultaneous conception of all the parts of infinite time and motion" (Avempace 1994, 239, 247).

searched into, this may fall to the ground, and we with it.”¹²⁶ This is the seminal influence that Galileo received for the formulation of an integrative method of inquiry where “we should seek the incontrovertible sense of the Bible with the assistance of demonstrated truth, and not in any way try to force the hand of nature or deny experiences and rigorous proofs in accordance with the mere sound of words that may appeal to our frailty” (Galilei 1957, 206-207).

The aim of Augustine to establish an integral method of inquiry derived from his desire to avoid the damage caused to faith and church when using the Bible to justify the unknown. Augustine was concerned about the damage that could be inflicted to Christianity whenever believers, without a full understanding of the elements of this world, ignorantly argue about them as if matters of Christian doctrine.¹²⁷ Such an exposed ignorance, says Augustine, undermines the greater truth of the Bible concerning the salvation of souls because “when infidels refute any Christian on a matter which they themselves thoroughly understand, they thereby evidence their slight esteem for our Bible. And why should the Bible be believed concerning the resurrection of the dead, the hope of eternal life, and the Kingdom of heaven, when it is considered to be erroneously written as to points which admit of direct demonstration or unquestionable reasoning?” (Galilei 1957, 208, Augustine, *De Genesi ad Litteram*, I, 18-19). Thus, the basis of Augustine’s integrative method aimed to avoid the degradation that the truth of the Christian faith would suffer when forced to accommodate doctrines not corresponding to its pure interpretation, as well as empirically demonstrated truths of the physical world. As in the case of the examina-

¹²⁶ Augustine warns of such interpretations that would force the text of the Bible to accommodate untested propositions regarding the physical world because “then we will be seen to have contended not for the sense of divine Scripture, but for our own ideas by wanting something of ours to be the sense of Scripture when we should rather want the meaning of Scripture to be ours.” Augustine, *De Genesi ad Litteram*, I, 18-19, cited by Galileo (1957, 206).

¹²⁷ Augustine witnessed this type of ignorance in the case of baseless discussions regarding the earth and the heavenly bodies, as well as their properties of motion, rotation and magnitude. Hence, Augustine observed that “it is too absurd, yea, most pernicious and to be avoided at all costs, for an infidel to find a Christian so stupid as to argue these matters as if they were Christian doctrine; he will scarce be able to contain his laughter at seeing error written in the skies, as the proverbs say” (Augustine, *De Genesi ad Litteram*, I, 18-19).

tion of God's nature, this model of reasoning invokes great prudence and restless effort to advance the demonstration and understanding of the truths of the physical world.

The same substantial differences that informed Luther's and Calvin's adoption of this integrative method with respect to the use of the Aristotelian system in theology and philosophy were also present in Galileo's extension of this method to the study of the physical world. The dawn of the modern natural and social sciences coincided with the reaffirmation of a completely different perspective toward the study of the physical universe, the human race, and individual freedom. Different from the assumption of an enclosed infinite system exogenous to any first cause or agency, these methodological roots assert only the infiniteness of the extensive and intensive knowledge of God, of which a portion is accessible to the human mind when the potential to perceive these images is actualized. In the process of knowing the truth of Scriptures and those of the physical world, this method emphasizes the liberating effect of the Principle of Christian Freedom, through which the practice in the Sublime Palpation of the renewed mind enables the perception of the essence of the truth of Scriptures and the physical world. In both forms of inquiries, this integral method of examination emphasizes caution and prudence in the interpretation of underlying principles, urging diligent proofs and demonstrations to avoid the deceiving effect that common impressions of the senses can render when relying on human reason alone.

3.3.1 Palpational Rationality in the Works of Galileo

The rejection of the Aristotelian conception of an infinite universe –decipherable through a syllogistic deductive method— reveals salient similarities between Galileo's and Luther's assimilation of the method at the core of Palpational Rationality. Given their adoption of this alternative system, this dissertation suggests that Luther was for theology and philosophy what Gali-

leo was for the development of modern science and technology.¹²⁸ As in the case of Luther, the basal argument for Galileo's rejection of Aristotelian philosophy is found in the great influence of Augustine, particularly in his interpretation of the Principle of Christian Freedom. This influence is evident in the letter that Galileo wrote in June of 1615 to the great Duchess of Tuscany, Christina of Lorraine, concerning the use of Biblical quotations in matters of science.¹²⁹

Galileo argued that the explanation of the complex physical world in the Bible is only casually presented in order to avoid confusion in the minds of the people. This vista reflects Augustine's liberating view expressed in *De Genesi ad Litteram* (*The Literal Meaning of Genesis*) (Augustine 1982)) that underscores the primary purpose of Scriptures in the right service of God, and the salvation of the souls (Galilei 1957, 182).¹³⁰ Galileo observed that the Bible cannot be rendered in its bare grammatical meaning when alluding to the higher mysteries of physical conclusions because they are announced only in a manner that can accommodate the capacities of

¹²⁸ Starting with their formal training, Luther and Galileo studied Aristotle in their early careers, and both were conduced to reject the Aristotelian philosophical system as adopted by the Roman Catholic Church. Both found the theological justification for their respective positions in the writings of Augustine, and more particularly, in the prominent relevance that Augustine assigned to the Principle of Christian Freedom. The rejection of the Aristotelian method of a-priori inquiry that disdained any detailed proof and examination of its logical argumentation moved Luther and Galileo to advocate for a method of inquiry that distrusted human reason and the superficial observations of the senses. Rather, they replaced this proud faith in human reason by a humble recognition of the limits of human capabilities to know the nature of God and of the physical world.

¹²⁹ The Letter to the Duchess of Tuscany, mother of the Grand Duke Cosimo II, was the detailed argumentation of the defense that Galileo presented in his battle against the Inquisition, which ended in his condemnation in 1633. It corresponds to a corrected version of the original letter that Galileo wrote to his closest pupil, the Dominican monk Benedetto Castelli on December 21, 1613, in which Galileo expressed his opinions on the relationship between science and religion. Galileo sent a corrected version of this letter with further astronomical demonstrations and Biblical quotations to the Holy Office in Rome on February 16, 1615, after the accusations by the Dominican priest Niccolò Lorini, who called for an investigation of the "dangerous and heretical views expressed by the Galileans" (Galilei 1957, 150-152). Although Galileo received an opportunity to reach a compromise with the Church, the letter to the Duchess of Tuscany summarizes his determination to fight the abuses of the Roman Catholic Church from its charges against the Copernican system as inconsistent with the Bible. Most importantly, the letter represents his defense of a new integrative method of inquiry not considered in conflict with the truth of Scriptures; a method that instead proposed the integration of this high truth with the truth revealed by the new sciences of observation and experimentation. The first version of this letter was published in Latin and Italian in 1636, three years after Galileo's condemnation by the Holy Office (Galilei 1957, 171).

¹³⁰ This is the tenor of Augustine's view concerning the inquiry into the form and shape of the heavens, which he saw that Scriptures had forborne to treat "as in no way furthering the student with respect to the blessed life. ... Hence let it be said briefly, touching the form of heaven, that our authors knew the truth but the Holy Spirit did not desire that men should learn things that are useful to no one for salvation. ... Now if the Holy Spirit has purposely neglected to teach us propositions of this sort as irrelevant to the highest goal (that is, to our salvation), how can anyone affirm that it is obligatory to take sides on them, and that one belief is required by faith, while the other side is erroneous?" Augustine, *De Genesi ad Litteram* ii, 9, cited by Galileo (Galilei 1957, 184-185).

common people in subjects that are not of primary importance for the salvation of the soul (Galilei 1957, 184-185).

One of the most important manifestation of the Augustinian influence on Galileo was the assimilation of the Principle of Christian Freedom to be used as the leading principle in an integral form of inquiry. A first manifestation of this Principle is observed in the cautious attitude that led Galileo to avoid the Aristotelian norm of “making positive statements about things obscure and hard to understand by means of reason alone.”¹³¹ The liberating power of the truth of Scriptures that remains un-contradictable by the truths of physics is the key leading principle of Galileo’s inquiry.¹³²

Galileo considers the liberating element of the Principle of Christian Freedom essential to discern truth from falsehood, a basic skill necessary for the advancement of all sciences. In the *Dialogues Concerning the Two Chief World Systems, Ptolemaic and Copernican*, Galileo presents in the views of Salviati his own orientation toward the exhaustive mathematical and empirical demonstration of every argument. From this vantage, Galileo recognizes that “it is vanity to imagine that one can introduce a new philosophy by refuting this or that author. It is necessary first to teach the reform of the human mind and to render it capable of distinguishing truth from falsehood, *which only God can do*” (Galilei 1967, 57, italics added).¹³³ In this manner, Galileo freely describes the essential role that the Principle of Christian Freedom seems to have played

¹³¹ Such a disposition is rooted in Augustine’s advice “not to believe anything inadvisedly on a dubious point, lest in favor to our error we conceive a prejudice against something that truth hereafter may reveal to be not contrary in any way to the sacred books of either the Old or the New Testament.” Augustine, *De Genesi ad Litteram*, ii, cited by Galilei (Galilei 1957, 175-176).

¹³² This view is present in Galileo’s conciliatory position: “I have no doubt that where human reasoning cannot reach – and where consequently we can have no science but only opinion and faith- it is necessary in piety to comply absolutely with the strict sense of Scripture. But as to the other kind, I should think, as I said before, that first we are to make certain of the fact, which will reveal to us the true senses of the Bible, and these will most certainly be found to agree with the proved fact (even though at first the words sounded otherwise), for two truths can never contradict each other. I take this to be an orthodox and indisputable doctrine, and I find it specifically in St. Augustine when he speaks of the shape of the heavens and what we may believe concerning that” (Galilei 1957, 197-198).

¹³³ In the *Dialogues Concerning the Two Chief World Systems, Ptolemaic and Copernican*, Galileo presents his refutations against Aristotelian and Scholastic cosmology through the dialogue of the characters of Salviati and Sagredo. Salviati represents the mathematically demonstrative part of Galileo’s integrative method of inquiry, while Sagredo personifies Galileo’s sublime perception of the underlying principles of the universe’s order (Galilei 1967).

for the advancement of the modern sciences, because a renewed mind that overcomes the slaving influences of violent passions is opened to the discernment of truth from falsehood, a fundamental building block of all experimental sciences. Given the frailty of the human mind that operates under the slavery of innate emotions, Galileo rejects Aristotle's a-priori cognitive system, and finds succor in the strength of the mind that Galileo acknowledges as only possible through God's renewal.

As in the case of the control of the flesh that the renewed mind is able to exercise, the Principle of Christian Freedom is also present in the control of the fear of death, which according to Galileo is another important requisite of the scientific mind. In the *Dialogues*, this freedom from fear forms the views that Galileo assigns to Sagredo, the character representing his own sublime perceptiveness in the refutation of the Aristotelian assumption of infiniteness. From the perspective of a mind sublimely trained in the examination of the truth of Scriptures and of the physical world, Galileo says through the words of Sagredo that "those who so greatly exalt incorruptibility, inalterability, etc. are reduced to talking this way, I believe, by their great desire to go on living, and by the terror they have of death. They do not reflect that if men were immortal, they themselves would never have come into the world" (Galilei 1967, 59). Thus, a renewed mind that is freed from its terror of death can perceive the evidence of a finite universe. In this sublime freedom, the renewed mind is able to perceive the finite nature of the universe that asserts the existence of a necessary absolute Agent, who freely intervenes in the creation of the physical world and in the re-creation of human nature.

The third important manifestation of Galileo's assimilation of Palpatational Rationality refers to the liberating effect of the Sublime Palpation to perceive the underlying essence of the truths of the physical world. As examined before, the Principle of Christian Freedom seems to produce the renewal of the mind and will through a process that involves the assimilation of the

Sublime Image that forms the object of the Sublime Palpation. The perception of this most important palpation exercises the mind in the control of violent passions and trains it to avoid the disruptive effects of innate emotions on the perception of truths of the physical world.

This perceptual capability corresponds to Galileo's sense of the sublime, the distinctive sense of human nature that is also central to Luther's adoption of the method of inquiry at the basis of Palpational Rationality. In line with these considerations, Galileo recognizes that from an extensive viewpoint human understanding is limited in its knowledge of God, but that God has entrusted the human race with the unique capability to know, intensively, some of the propositions regarding His extensive knowledge (Galilei 1967, 103).¹³⁴ Although the infiniteness of God's knowledge greatly contrasts with the limited number of propositions that the human mind is able to understand, Galileo stresses that the human mind is capable of acuteness in perception. This unique human capability allows, in Galileo's view, the intensive understanding of at least some of these propositions. For Galileo, the notion of "intensive understanding" alludes to the human capability to apprehend some of these propositions perfectly, and consequently, of having "as much absolute certainty as nature itself has." The knowledge of the few propositions that the human mind is able to understand represents for Galileo what "equals the Divine in objective certainty, for here it succeeds in understanding necessity, beyond which there can be no greater sureness" (Galilei 1967, 103). By participating in the knowledge of God's truth, humans are able to exercise a unique sublime sense by which the human mind acutely perceives the underlying principles of the laws of nature that allows it to tower over other ordinary minds.¹³⁵

¹³⁴ Galileo also recognizes the differences between God's act of knowing, and that of human nature, for "the way in which God knows the infinite propositions of which we know some few is exceedingly more excellent than ours." Furthermore, he affirms that what takes the human mind much toiling to apprehend is perceived instantly by the mind of God. All propositions that we are able to understand, "which our intellect makes laboriously and step by step, run through the Divine mind like light in an instant; which is the same that everything is always present to it" (Galilei 1967, 103-104).

¹³⁵ Galileo sees in the case of Michelangelo this sense of sublimity manifested in the capability to perceive the perfection of the human body characteristic of the artist's masterpieces. As Galileo inquires, "do we not say that the art of discovering a beautiful statue in a block of marble has elevated the genius of Michelangelo far, far above the ordinary

In the context of Palpational Rationality, the sense of the sublime that allows the apprehension of the supreme truth of Scriptures also allows for this “intensive understanding” of the subordinate truths of the physical world. This was a vehicle that seems to have enabled Galileo to achieve his most influential discoveries, as the result of the Sublime Palpation of fundamental principles plainly exposed, but rarely perceptible to the naked eye. As explained later in this chapter, the recount of the most influential recent sources of refutations to the Aristotelian assumption of infiniteness, both in the realm of the quark structure of matter and the General Theory of Relativity, have their embryonic origins in the discoveries that Galileo puts in the words of Sagredo, the character that personifies Galileo’s training in the Sublime Palpation. Sagredo’s “intensive understanding” corresponds to Galileo’s training in palpating the Sublime Image, which forms the core of the formal proofs and demonstrations that Salviati enounces regarding the intensive understanding of the structure of matter in particles, and the magnetic forces that explain its cohesion. In like manner, the effect that the training in Sublime Palpation has on Sagredo’s perceptions regarding balances, steelyards, tennis players and bowlers, form also the basis of the formalization of influential principles regarding the motion of projectiles. Thus, at the essence of Galileo’s most influential discoveries lie perceptions of this sublime sense, which he recognizes when noting that “were it not for the existence of a superior and better sense than the natural and common sense to join forces with reason, I much question whether I, too, should not have been much more recalcitrant toward the Copernican system than I have been since a clearer light than usual has illuminated me” (Galilei 1967, 328).

minds of other men? Yet this work is nothing but the copying of a single attitude and position of the external and superficial members of one motionless man” (Galilei 1967, 102).

3.3.2 *Palpatonal Rationality in the Works of Isaac Newton*

The method at the basis of Palpatonal Rationality that influenced the beginning of the Scientific Revolution reached its summit in the works of Isaac Newton (1643-1727). Newton is renowned for his pioneering discoveries, ranging from gravity and the laws of motion to the nature of light, optics and calculus. John Locke (1632-1704), a close friend of Newton, acknowledged Newton's scientific acumen within his profound and sublime understanding of Scriptures (Newton 1999a, 2). Echoing Locke's observation, recent historians of science and technology further convened to acknowledge that the life and works of Newton were, as in the case of other renowned Reformed Scientists of the time, a fusion of scientific or empirically based inquiry with a sublime disposition to faithfully meditate upon Scriptures (Funkenstein 1986; Goodman 1973; Hankins 1985).

Calvin's methodic exposition of the integrative method of analysis that Luther reinstituted by drawing upon the Augustinian influence, was for Newton the main source of his method of inquiry in theology and physics.¹³⁶ Newton assimilated such a legacy mainly from the instruction of his Puritan grandparents, who raised him from an early age after the death of his father (Newton 1999a, 10).¹³⁷ Given this upbringing, the most renowned of Newton's biographers underscore the great influence that Calvinistic doctrines had on shaping Newton's unique puritanical outlook (Mandelbrote 1993, 285-286; Westfall 1993, 23-24; White 1999, 49, 149). As a result, Newton revealed from an early age his trust in the superiority of the Lutheran and Calvinistic methods of

¹³⁶ For an examination of Calvin's influence on Newton refer to Westfall (1993,) and Harrison (1978).

¹³⁷ Newton exhibited a form of profound puritanical pietism from an early age. In 1661, he commenced studies at Trinity College, Cambridge, where his early interest in the puritanical implications of practicing a Christian life were already revealed in his book purchases: a copy of the Greek New Testament and John Calvin's *Institute of the Christian Religion* (Newton 1999a, 11). This strong puritanical influence is also manifested in Newton's unique scrupulousness, austerity, discipline and industriousness as revealed in the list of sins that he writes on Whitsunday during the summer of 1662 (Westfall 1993, 23). The heavily annotated copy of Newton's Bible (Harrison 1978, catalogue number 188) further evidences the same deep Calvinist influence that was also characteristic of the Church of England, in its assimilation of the Augustinian based principle of Sola Scriptura reinstituted by Luther.

Scriptural interpretation in opposition to the Aristotelian approach followed by the Scholastics within the Roman Catholic Church.

Newton's rejection of the Aristotelian cognitive system informed his exploration of the correct method to understand Scriptures, as well as his revolutionary outlook on Physics. Colin Maclaurin (1698-1746)¹³⁸ noted that Newton objected to the position of the Catholic philosopher and Mathematician René Descartes for his freedoms regarding the understanding of the nature of God in "describing the formation of the universe without his interposition, and in pretending to deduce from his attributes, consequences that are now known to be false" (Maclaurin 1968, 380).¹³⁹ The roots of Palpatational Rationality that Newton reflected in his prolific Biblical writings and studies of Physics and Mathematics denote a reverent and sublime understanding of God's nature. As Maclaurin noted, this reverence distinguished Newton's "circumspection in speaking of this subject, in discourse as well as in his writings" (Maclaurin 1968, 380).¹⁴⁰

The distinctive method of Scriptural inquiry based on the Principle of Christian Freedom was evident in Newton's understanding of God's nature and the universe's as revealed in *Principia*, the masterpiece of his system of physics and mathematics. This influence was first revealed in Newton's understanding of God's nature, which he openly contrasted with the views of Hobbes and Spinoza. Instead of the confusion of God with nature that these two authors adopted, Newton

¹³⁸ Colin Maclaurin was a Scottish mathematician and philosopher, and the main exponent of Newton's system, especially to European audiences. His main contribution was to expound with clarity and precision the mathematics and Physics of Newton's *Principia*. Due to his appreciation for Maclaurin's exceptional mathematical abilities, Newton established a close academic association with him, even contributing to secure Maclaurin's position as Chair of Mathematics at Edinburg, as well as his later election as fellow of the royal Society in 1719 (Maclaurin 1968, ix, x).

¹³⁹ Maclaurin recounts Newton's rejection of the views of Spinoza and Leibnitz for carrying the doctrine of Absolute Necessity to the "most monstrous heights," surpassing all others both in the weakness of their proofs "as well as the impiety of his doctrines" (Maclaurin 1968, 380).

¹⁴⁰ Converse to common sense, Newton did not consider his revolutionary system of physics and mathematics the summit of his intellectual legacy; rather, this honor he reserved for his writings regarding the application to the transformative historical events of his time, which he approached from the perspective of this integrative method of inquiry focused on the understanding of the revelation of Scripture. Indeed, after the revised publication of the third English edition of *Optics* in 1721, and the completion of the third edition of *Principia* in 1726, Newton returned in his old age to the theological interests that fascinated him during his early manhood (Westfall 1993, 298-299).

referred to God as the only necessary Being, and as the perfect and universal ruler.¹⁴¹ The integration between emotional and sensorial perception of God's revelation is further present in Newton's thought, as in the recognition of God's power to implant in human nature certain "senses" by which it is able to understand God's own nature. According to Newton's point of view, "it may be in his power to bestow upon us other senses of which we have at present no idea; without which it may be impossible for us to know all his works, or to have more adequate ideas of himself" (Maclaurin 1968, 382).¹⁴²

Maclaurin draws attention to Newton's adoption of an integrative system that allows one to palpationally and empirically perceive the revealed nature of God in Scriptures. He echoes Newton's view that "there is no need of nice or subtle reasoning in this matter: a manifest contrivance immediately suggests a contriver. *It strikes us like a sensation*; and artful reasonings against it may puzzle us, but it is without shaking our belief" (Maclaurin 1968, 381, italics added). This form of perception corresponds to the reverberation of Newton's argument suggesting the design and dominion of an intelligent and powerful being, as when affirming that "no person, for example, that knows the principles of optics and the structure of the eye, can believe that it

¹⁴¹ Regarding the nature of God as a necessary Being, Newton affirms that "this most elegant system of the sun, planets, and comets could not have arisen without the design and dominion of an intelligent and powerful being... And so that the systems of the fixed stars will not fall upon one another as a result of their gravity, he has placed them at the immense distances from one another" (Newton 1999b, 940). According to God's nature as a universal ruler, says Newton, "He rules all things, not as the world's soul but as the lord of all. And because of his dominion he is called Lord God Pantokrator, or 'universal ruler.' For 'god' is a relative word and has reference to servants, and godhood is the relationship of God, not over his own body as is supposed by those for whom God is the world soul, but over servants. The supreme God is an eternal, infinite, and absolutely perfect being; but a being, however perfect, without a dominion, is not the Lord God" (Newton 1999b, 940-941). Given this understanding of God's nature as the only necessary, universal and perfect ruler, Newton identifies also His main attributes, because "from true lordship it follows that the true God is living, intelligent, and powerful; from the other perfections, that he is supreme, or supremely perfect." Given Newton's understanding of God as different from the concept of nature with which He is at times confused, Newton observed that "He is not eternity and infinity, but eternal and infinite; he is not duration and space, but he endures and is present... He is omnipresent not on *virtually* but also *substantially*, for action requires substance [lit. for active power "virtus" cannot subsist without substance]" (Newton 1999b, 941, italics in the original).

¹⁴² The refutation of the method at the root of Palpational Rationality against the Aristotelian assumption of infiniteness is most evident in Newton's sublime understanding of the nature of God and His attributes. Maclaurin asserts that for Newton, God is "the supreme and first cause, from whom all other causes derive their whole force and energy, so he thought it most unaccountable to exclude *Him only* out of the universe. It appeared to him more just and reasonable, to suppose that the whole chain of causes, or the several series of them, should centre in Him as their source and fountain; and the whole system appear depending upon Him, the only independent cause" (Maclaurin 1968, 380).

was formed without skill and science....The admirable and beautiful structure of things for final causes, exalt our idea of the contriver: the unity of design shows him to be One” (Maclaurin 1968, 381).

In conformity with the superior human-like Supreme Self of God, Newton asserts one of the most significant conceptions regarding the nature of the Creator and of His creation, which has demolishing consequences to the foundations of the Aristotelian system. Newton conceives God as a free agent who in His liberty has created a finite universe. This view reveals the central importance that Luther’s method had for the theological and scientific inquiries of Newton, also based on Augustine’s interpretation of Christian Freedom.¹⁴³ In *Principia*, Newton expresses this view of a finite and unnecessary universe created from the free agency of the only infinite and necessary Agent. He observes that “all the diversity of created things, each in its place and time, could only have arisen from the ideas and the will of a necessarily existing being” (Newton 1999b, 942). Hence, the apex of the Newtonian system comprises the understanding of God’s nature as free Agent, who in His liberty created a physical world that is both finite and unnecessary.

The palpational understanding guiding Newton’s observations on the nature of the universe further opposed the Aristotelian conception of an infinite universe as determined by an infinite series of causations. Equally relevant for the purposes of the present work, the other transcendental realization of this notion of a finite universe suggests the essence of God’s supreme motion for the creation of the physical world as a result of God’s sublime freedom. Here Maclaurin points to Newton’s view, that God “placed the systems of the fixed stars at various distances from each other, at his pleasure; in the solar system, he formed the planets of such a number, and

¹⁴³ As Maclaurin says regarding his mentor’s perception of this unique attribute of God, “Sir Isaac Newton is particularly careful, always to represent Him as a free Agent; being justly apprehensive of the dangerous consequences of that doctrine which introduces a fatal or absolute necessity presiding over all things. He made the world, not from any necessity determining Him, but when He thought fit: *matter is not infinite or necessary*, but He created as much of it as he thought proper” (Maclaurin 1968, 382, italics added).

disposed them at various distances from the sun, as he pleased” (Maclaurin 1968, 382). God’s nature is perceived as the absolute free Agent who brought the whole universe into existence through the supreme form of love that this dissertation considers at the core of the Sublime Palpation. This is the ultimate substance of the liberating effect of the Principle of Christian Freedom emblematic of Palpational Rationality. The motion expressed in the act of freedom characteristic of God’s creation, is what Newton asserts as transmitted by Maclaurin, when concluding that “in these and other instances, we plainly perceive the vestiges of a wise agent, but acting freely and with perfect liberty” (Maclaurin 1968, 383).

3.4 Recent Evidence Concerning Palpational Rationality’s Assumption of Finiteness

The importance of Galileo’s integrative method of inquiry found in his *Dialogues Concerning Two New Sciences* (Galilei 1963) constitutes the foundations for the recent disproof of the assumption of infiniteness.¹⁴⁴ This refutation was further advanced by the branch of physics derived from Galileo’s understanding of the structure of matters in magnetic particles, as well as by the branch derived from Galileo’s second new science on the motion of bodies. The first science studying the structure and cohesion of particles constitutes a departure from the Aristotelian deduction of the assumption of infiniteness, which was built upon the assumption that heavenly bodies had a different constitution than the earth.¹⁴⁵ This disproof laid the foundations for the modern refutation of the assumption of infiniteness concerning the structure of matter within the modern physics of quarks, or fundamental particles. Galileo’s creative perception reveals his

¹⁴⁴ The *Dialogues Concerning Two New Sciences* (1638) provide a more formal rejection of the main tenets of Aristotelian and Scholastic cosmology through the discussions of Salviati and Sagredo regarding the study of the constitution and motion of bodies. In the *Dialogues*, Galileo laid the foundations for a new science concerning “the resistance which solid bodies offer to fracture;” a discipline mainly focused on the understanding of the structure and causes of particles’ cohesion conforming matter (Galilei 1963, 1, 105). The second new science studies “movimenti locali,” or local movements. For Hawking, the *Dialogues Concerning Two New Sciences* constitutes “the genesis of modern physics” (Hawking 1998, 180).

¹⁴⁵ Aristotle assumed the existence of four main elements in the changeable or corruptible matter of the earth (earth, fire, water and air), in opposition to ether, or the quintessence of the assumed unchangeable and incorruptible celestial bodies (*De Caelo*, I, 3, 270b, 21-25, (Aristotle 1995, 59)).

understanding of the similar properties relating earthly and heavenly bodies as conformed by particles,¹⁴⁶ and the two main forces related to their interactions: gravity and magnetism.¹⁴⁷

Galileo's second science of local motions represents the source of another important refutation of Aristotle's assumption of infiniteness, as derived from the assumed impossibility of combining the vertical motion of earthly bodies with the horizontal motion attributed to heavenly bodies. Such disproof not only laid the foundations for Newtonian physics and the General Theory of the Relativity, but also for the most recent evidence regarding the origin, limits, shape and end of the universe.¹⁴⁸ Indeed, the second important element of Galilean mechanics is the principle of the addition of velocities, which, like many other important principles, Galileo credited first to the incisive creative perceptions of Sagredo. Galileo gives to Sagredo the recognition of this important observation for the Special Theory of Relativity when discussing the change in trajectory of a body after adding to its uniform movement a rotational one. Such palpational un-

¹⁴⁶ Galileo inaugurated with this new science the explanation of the structure of matter by particles interacting as a result of gravitational and magnetic forces. This seminal understanding of matter led to the further analysis of the four particles able to explain the composition of all matter in the universe: the electron, the proton, the neutron, and the photon. It also led to understand two of the four fundamental interacting forces: gravity and electromagnetism. The refutation that Galileo brought to Aristotle's argument concerning the assumption of infiniteness led to the most recent understanding of the twelve elemental particles that so far have been considered as the essential elements of all visible matter in the universe (Chow 2008, 163-167).

¹⁴⁷ In the case of gravity, Galileo rejects the Aristotelian view that what moves a projectile upward is an external and "preternatural" force. Although he recognizes that he does not understand what the principle or force is that moves bodies downward, or "gravity," and the principle or force that makes bodies move upward, or "impressed force," Galileo considered both forces as natural (Galilei 1967, 235). In a revolutionary observation for the modern understanding of the composition of matter, Galileo perceived the existence of a magnetic force present in the particles that keep the earth's cohesion as a solid body. The structure of both celestial and the earthly bodies was the core of the creative perception that Galileo assigns to Sagredo in the *Dialogues*; that is, the property of the core of the earth that he found parallel to the eight-fold increase in the magnetic power of a lodestone enclosed in an armature of iron resembling the magnetic field of the earth (Galilei 1967, 405).

¹⁴⁸ The creative perceptions of Galileo on the observation of the motions of bodies in the balance and the steelyard, as well as in the case of projectiles, allowed him to identify the fundamental principles regarding the motions of earthly bodies. Essentially kinematic, Galileo's science of motions was relevant for the understanding of the kinematic energy of material points of mass of the Special Theory of Relativity, and for the rejection of the hypothesis of the inertial system explaining the inertial behavior of matter, which Einstein considered "the basis for the Theory of General Relativity" (Galilei 1967, xiii).

derstanding also forms the basis of the experiment that Galileo expresses through the words of Sagredo to demonstrate the important principle of the addition of velocity.¹⁴⁹

The perceptions through which the principle of the addition of motions was first apprehended, also greatly influenced the refutation of the Aristotelian notion of the absoluteness of space and time in Einstein's General Theory of Relativity. This Theory constitutes, so far, the most elaborated step in the refutation of the assumption of infiniteness of space and time. Its practical applications have served to support subsequent theories such as those espoused by the Big Bang, which seeks to explain the existence of a singularity at the beginning of the universe. The General Theory of Relativity describes the structure of space as characterized by its small gravitational effect and its non-uniform distribution of matter, which according to Einstein, demonstrates that the universe "will be necessarily finite. In fact, the theory supplies us with a simple connection between the space-expanse of the universe and the average density of matter in it" (Einstein and Lawson 1931, 136-137). One of the most important practical applications of the General Theory of Relativity is the displacement of spectral lines toward the red end of the light spectrum, or "redshift"; a fundamental application of the General Theory of Relativity to the development of the Theory of the Big Bang. The Big Bang Theory constitutes the most recent explanation of the existence of an origin within the conception of a finite universe.¹⁵⁰

¹⁴⁹ Sagredo observed this combination of motions in the "effect achieved by expert tennis players to their own advantage when they deceive their opponents by cutting the ball, as it is called." This is the same combination of motions that he observed in bowlers who by gripping the ball with the hand above it, they confer to the ball a contrary spin upon its release, which makes the ball to stop or to run only a little upon hitting the ground (Galilei 1967, 161).

¹⁵⁰ The redshift effect derived from the General Theory of Relativity is at the core of the Doppler Effect in the microwave background radiation that Penzias and Wilson discovered in 1965 as evidence of an expanding universe. This discovery confirmed the famous theory described by George Gamow in 1948, predicting that radiation in the form of photons should be still around today from the very early stages of the universe (Hawking 1998, 118). The Doppler Effect is the relationship between frequency and the speed of light according to which the low frequency of light waves per second shift towards the red end of the spectrum. This is used to signal that a particular emitting body is moving away from the observer (Hawking 1998, 37-38). Based on this Doppler Effect, and on the theory of George Gamow, according to which the early universe is very hot and dense, Bob Dicke and Jim Peebles argued that the light from the distant parts of the universe would be so greatly redshifted that they would appear to us as microwave radiation. This was the revolutionary discovery of the America Physicists Arno Penzias and Robert Wilson at the Bell Telephone Laboratories in New Jersey, when identifying the microwaves of background radiation.

In this context, modern physics has disproved the notion of an infinite universe self-contained and without boundary, which was considered as “*numerus clausus*” to the intervention of its necessary and absolute Agent. Paradoxically, the same proof of the universe’s finiteness has also demonstrated its nature as “*numerus apertus*,” although exposing the limits of the natural sciences to determine the nature of the universe’s first cause. In both cases the theoretical foundations at the basis of Palpatational Rationality have been methodologically confirmed. Modern physics has refuted the Aristotelian assumption of infiniteness that conduced to misguided conclusions in the understanding of human nature and freedom.

The limits of science to understand the singularities of the beginning and end of a finite universe have highlighted the importance of an integral approach for understanding the truths of the universe.¹⁵¹ This conclusion has been evident in the recent direction of scientists to consider the so-called Weak Anthropic Principle of the nature of the universe, according to which “the conditions necessary for the development of intelligent life will be met only in certain regions that are limited in space and time” (Hawking 1998, 124). Such a Principle takes into consideration the unique conditions that needed to be present in the universe for human life to appear on earth: from the rate of expansion and temperature of the universe to the structure of our galaxy and solar system. As Hawking concludes, all these unique conditions that would permit the flourishing of human life on earth converge in the realization that “it would be very difficult to explain why the universe should have begun in just this way, except as the act of a God who intended to create beings like us” (Hawking 1998, 127).

¹⁵¹ The most depurated theories of science are insufficient to explain the singularities distinctive of the universe’s creation (Big Bang) or the theory concerning its end (Big Crunch) because, as Hawking notes, all laws of science will break down at these two singularities (Hawking 1998, 173). This has unveiled the limits of deterministic models formulated with the ambitious aim to predict the behavior of all matter in the universe. In contrast, integrative anthropic theories have highlighted the Galilean and Newtonian views stressing the freedom of the Creator in making all things to allow for the formation of human life in the universe.

In line with the views of Galileo and Newton, the general conclusion that derives from the study of the singularity at the creation of a finite universe seems to affirm the Supreme Freedom of a Creator whose mode of creation remains inaccessible to the laws of sciences. As seen before, the different theories constructed to reject the Aristotelian assumption of infiniteness, and to establish demonstrations for the finitude of space and time, also break down when approaching the very act of supreme freedom manifested by the absolute necessary Agent. The laws of science do not hold at the beginning of time, and this singularity cannot be ignored by any attempt to construct a unifying theory of physics. Once the deterministic view of a self-contained infinite universe is refuted, then one is left with the evidence of the universe's finiteness, with a beginning in time, and with the inexorable agency of a necessary Being. As Hawking acknowledges, "God chose the initial configuration of the universe for reasons that we cannot hope to understand" (Hawking 1998, 122).

In this context, the method at the root of Palpatational Rationality comprises a mode of inquiry that in its theological, philosophical and scientific integration departs from the compartmentalization of human knowledge nowadays often associated with the pure sciences. Such a compartmentalization is the main challenge that has surfaced in the atomization of science warned by Einstein. As he observed, "the physicist cannot simply surrender to the philosopher the critical contemplation of the theoretical foundations; for, he himself knows best, and feels more surely where the shoe pinches." The integrative nature of human knowledge makes imperative that the method of its acquisition must also be integrative; for as Einstein also acknowledged, "the whole of science is nothing more than a refinement of everyday thinking. It is for this reason that the critical thinking of the physicist cannot possibly be restricted to the examination of the concepts of his own specific field" (Einstein 2007, 401).

As examined in detail above, the great advances of theology, philosophy and science introduced by Luther, Calvin, Galileo and Newton suggest the re-assimilation of an integrative method of inquiry first delineated by Augustine. This method provided a guide for the inquiry of the truth of Scriptures and for demonstrating the propositions of the physical world. The practice of freedom from the deceiving effects of violent passions seems to actualize the capability to perceive the truth of Scriptures, as well as the value and occurrence of the universe's physical outcomes and properties. The resumption of the integrative method that originally conducted to the birth of the modern sciences also appears essential to addressing the demands of the behavioral and social sciences inquiries into the understanding of human nature and its potential for freedom. In the realm of individual behavior associated with institutional and socioeconomic development, the use of such an integrative method seems of pivotal importance in assessing the remote causes that play a fundamental role in the formation of developmental preferences. As examined in the next chapters, this integral method of inquiry forms the basis of Palpational Rationality's multidisciplinary approach to assessing the micro-level behavioral effects that the Sublime Palpation of Christian Freedom has on the formation of developmental preferences.

4 Palpational Rationality and Developmental Preference Formation in Calvin's Protestant Ethic

Following the assimilation of Augustine's method of inquiry by Luther and Calvin detailed in chapter 3, this chapter examines Calvin's views to support the modifications offered by this dissertation to Weber's Economic Rationalism. This section contrasts the critical role that Calvin assigns to Christian Freedom with the relevance that Weber gives to the Doctrine of Predestination. As described in chapter 1, prominent social scientists have expressed a similar view emphasizing Christian Freedom over Predestination as central belief in Calvin's system. With basis on a detailed analysis of Calvin's *Institutes*, the present chapter also assesses the individual developmental preferences associated with the Sublime Palpation of Christian Freedom that seem to affect complex decision-making processes in moral and social situations associated with development. In like manner, this chapter analyzes Calvin's views in order to support the role that this dissertation assigns to the Sublime Palpation of Christian Freedom on the collective manifestation of individual preferences associated with development. This forms the basis of the importance for social, political and economic development that this dissertation attributes to the practice of Palpational Freedom, Justice and Altruism, which individuals seem to perform inside the Reformed Free Church. In like manner, this chapter assesses the developmental effect that the collective practice of these individual preferences appears to have outside the church, and their translation into skills and traits essential for social, political and economic development.

4.1 Calvin's Notion of Christian Freedom and Predestination

The study of the *Institutes* suggests a prominent place to the notion of Christian Freedom instead of Predestination in Calvin's theological system. The first manifestation is found in Calvin's assertion that "unless this freedom be comprehended, neither Christ nor Gospel truth, nor

inner peace of soul, can be rightly known” (Calvin 1960, 834). The palpational nature of this freedom is manifested in the spiritual essence that Calvin attributes to its elements, which he clearly contrasts with the psychological force assigned to doubts regarding election. As Calvin states, “its whole force consists in quieting frightened consciences before God—that are perhaps disturbed and troubled over forgiveness of sins, or anxious whether unfinished works, corrupted by the faults of the flesh, are pleasing to God, or tormented about the use of things indifferent” (Calvin 1960, 840). Hence, the notion of Christian Freedom that Calvin emphasizes at the core of his theological system appears to contrast with any role attributed to doctrines founded on enslaving feelings such as anxiety.

4.1.1 Calvin’s View of Christian Freedom

As detailed in chapter 1, the treatment of Christian Freedom as the central belief of Calvin’s theology is not unique to the present dissertation. Witte points out that prominent thinkers including Jean-Jacques Rousseau, Charles Bourgeaud, and Walter Köhler have affirmed that role (1996, 359-360). Following this same vista, Stevenson presents from a political science perspective similar to this dissertation’s view the critical relevance of Christian Freedom for Calvin’s system (1999). Stevenson demonstrates that Christian Freedom is a central concept in Calvin’s work and the point of intersection of Calvin’s political and theological thought. In like manner, Witte observes that Calvin’s thoughts resulted in profound and lasting contributions to the Western legal and political tradition of religious liberty (1996, 400). Particularly, Witte holds that Calvin furthered in Geneva, Western Europe and North America the cause of liberty of the individual conscience from intrusive canonical laws and clerical controls. According to Witte, Calvin’s views “provided the cornerstone for the constitutional protections of liberty of conscience and free exercise of religion advocated by later Protestants in France, Holland, England, Scotland, and America.” Regarding Calvin’s theory of moral laws and duties, Witte observes that they “inspired

a whole range of natural law and natural rights theories, directed, among other things, to the protection of religious liberty” (Witte 1996, 400). In keeping with the same line of thought of these authors, Douglass affirms that “it is his [Calvin’s] theology of freedom that has proved enduring, giving rise to new generations of ‘freedom fighters’ in the following centuries” (Douglass 1983, 70-71).

Calvin’s notion of Christian Freedom comprises three main manifestations able to counteract the anxiety and psychological force that Weber sees associated with “certitudo salutis.” These three dimensions comprise freedom from the law, freedom of conscience, and freedom in the use of God’s gifts. For Calvin, the first dimension of Christian Freedom alludes to “the conscience of believers, [who] in seeking assurance of their justification before God, should rise above and advance beyond the law, forgetting all law of righteousness” (Calvin 1960, 834).¹⁵² Calvin asserts based on the distinction between the righteousness of the law (which relies on works) and the righteousness of faith (which is apart from deeds) that the “righteousness which is given us through the Gospel has been freed of all conditions of the law...the Gospel promises are free and dependant solely upon God’s mercy” because as it is written “the righteous will live by his faith” (Habakkuk 2:4) (Calvin 1960, 747).¹⁵³ Accordingly, Calvin observes as the first manifestation of Christian Freedom its liberation from the law’s condemnation, which causes anxiety regarding the forgiveness of one’s sins, the favorability of deeds, or the use of worldly things. In the context of Calvin’s views on Christian Freedom, righteousness only derives from faith. This

¹⁵² This alludes to the clear distinction that the apostle Paul brings between the righteousness based on work and on faith, when affirming to possess not a “righteousness of my own derived from the Law, but that which is through faith in Christ, the righteousness which comes from God on the basis of faith” (Philippians 3:8-9).

¹⁵³ According to this threefold perspective, Stevenson emphasizes the means attributed by Calvin to Christian Freedom, which resulted in the liberation of believers from the bondage of sin. Christian Freedom binds believers more closely to God Himself as the source of their strength. Once freed from the penalty of sin, believers are able to joyfully respond to God in gratitude by obeying His commands. Calvin’s view follows the same line of Luther’s perspective presented in his treatise *Two Kinds of Righteousness* (Luther 1955).

perspective forms the core of the same liberating effect that this dissertation attributes to the palpation of the Sublime Image.

Freedom of conscience is the second dimension of Calvin's view on Christian Freedom. In the close connection that he finds between these two first manifestations, Calvin asserts that "consciences observe the law, not as if constrained by the necessity of the law, but that freed from the law's yoke they willingly obey God's will" (Calvin 1960, 836).¹⁵⁴ Thus, Calvin also emphasizes the importance that Christ's Freedom has in liberating the human conscience from all human law and power: "since believers' consciences, having received the privilege of their freedom...have, by Christ's gift attained to this, that they should not be entangled with any snares of observances in those matters in which the Lord has willed them to be free, we conclude that they are released from the power of all men" (Calvin 1960, 846).

The third element in Calvin's notion of Christian Freedom consists in the use that believers make of life's blessings. As Calvin asserts regarding "adiaphora," or outward things that are themselves indifferent, "we are not bound before God by any religious obligation preventing us from sometimes using them and other times not using them, indifferently" (Calvin 1960, 838).¹⁵⁵ This third dimension of Christian Freedom involves making use of God's gifts "for the purpose for which He gave them to us, with no scruple of conscience, no trouble of mind. With such confidence our minds will be at peace with Him, and will recognize His liberality toward us" (Calvin 1960, 840).

¹⁵⁴ In the inner being, the palpational understanding distinctive of this Freedom is manifested in the good conscience before God, for as the apostle indicates, "the goal of our instruction is love from a pure heart and a good conscience and a sincere faith" (1 Timothy 1:5). This is also signified in the example of the apostle Peter, who exhorts all believers "to maintain always a blameless conscience both before God and before men" (Acts 24:16). As in the case of the law's condemnations, the recipients of the Law of Freedom in Christ are also free from any indictment regarding human laws or authorities. The exercise of Christ's Freedom, even in the edification of one's neighbor, cannot contravene the norm of conduct deriving from the palpation of the Sublime Image; in this regard, Peter and the apostles boldly declare the superior essence of this form of freedom when commanding to "obey God rather than men" (Acts 5:29).

¹⁵⁵ This understanding is based on the words of the apostle Paul, for whom all outward things are subjected to the believer's freedom, because "[t]o the pure, all things are pure; but to those who are defiled and unbelieving, nothing is pure, but both their mind and their conscience are defiled" (Titus 1: 15).

In brief, the transformative effect that Calvin assigns to Christian Freedom on individual behavior contrasts with the attempt to assign to Calvin's theological system the supremacy of beliefs other than those in agreement with Christ's Freedom. This is the type of freedom that Calvin sees first manifested with respect to the precepts of the law, and that extends to all forms of slavery characteristic of human nature. It underscores the "freedom of conscience" that characterizes a mind and will that have been renewed through the palpation of the Sublime Image of God's love for the human race. It is this inner state of freedom through which believers experience the superior criterion of the Sublime Palpation that seems to empower them to make optimal decisions in the most complex social and moral situations.

4.1.2 *Calvin's View of Predestination*

As noted in chapter 1, several authors have suggested a non-predestinarian view of Calvin's theology. Among these thinkers, Hall (1966, 19-37), Dantine (1966, 365-377), Armstrong (1969, 41-42, 136-138), Kendall (1976; 1979, 29-38), MacKinnon (1988a), and Thomas (Thomas 2000) regard Theodore Beza, Calvin's successor in Geneva, as responsible for the departure from Calvin's non-predestinarian theology. These authors emphasize Calvin's view that the believer's efforts can avail nothing in the pursuit of righteousness nor can the faithful ever know their state of grace. They consider Beza responsible for turning Calvin's biblical and Christocentric theology into the scholastic Reformed theology of the seventeenth century. They further regard Beza's theology as highly systematized through the re-introduction of Aristotelian deduction, dominated by predestination, burdened with the doctrine of limited atonement, and thus giving rise to unhealthy introspection in the search for marks of personal election.

From a formal perspective, another group of authors have supported the view of Calvin's non-predestinarian theology according to the placement that he gives to the doctrine of predestination in the *Institutes*. Brunner (1950), Duffield (1966), Toon (1967), Torrance (1982), De-

marest (1984), Wallace (1992), Dowey (1994), and Helm (2007) hold that Calvin deliberately conceived the placement of predestination biblically within the doctrine of salvation. Conversely, they argue that Beza reverted to the medieval scholastic device of placing predestination under the doctrines of God and providence (the position in which St. Thomas Aquinas discussed it). According to Brunner, Beza's approach "shows unmistakably that [predestination] is not derived from Christian revelation, but from the process of speculative thought" (Brunner 1950, 345). Duffield seconds this view, recognizing that "by doing so, although he was not alone in this, Beza re-opened the road to speculative determinism which Calvin had attempted to close" (Duffield and Battles 1966, 27).¹⁵⁶ Müller proffers that Calvin placed predestination after the fall of man and in relation to the liberating ministry of God's Salvation in Christ, assuming a model that is in essence Christological. Nevertheless, Müller observes that "nearly all of the extant discussions of the placement of Predestination in the Reformed theologies of the sixteenth and seventeenth centuries have been fundamentally misguided. They have consistently confused placement with definition" (Müller 2005, 208). This explains the aim of this dissertation to advance a direct analysis of Calvin's *Institutes* in order to emphasize instead the critical role that Calvin assigns to Christian Freedom.

Calvin seems to categorically refute the effect that Weber imputes to Predestination as psychological coercion produced by believers' doubt about their election. In the most emphatic terms, the Reformer notes that "Satan has no more grievous or dangerous temptation to dishearten believers than when he unsettles them with doubt about their election, while at the same time he arouses them with a wicked desire to seek it outside the way." In a reference to the impossibility of accessing the depths of God's divine wisdom regarding one's election, Calvin cautions that it amounts to "'seeking outside the way' when a mere man attempts to break into the inner recesses

¹⁵⁶ Duffield (1966, 27) cites as his proof of the point, Beza's *Summa Sive Descriptio Et Distributio Causarum Salutis Electorum, Et Exitu Reproborum* (Beza 1570-1582, I, 170).

of divine wisdom, and tries to penetrate even the highest eternity, in order to find out what decision has been made concerning himself at God's judgment seat." Consequently, the noxious effects resulting from the doubt of one's salvation only emerges in the mind of the believer who walks 'outside the way,' because as Calvin concludes, "he casts himself into the depths of a bottomless whirlpool to be swallowed up; then he buries himself in an abyss of sightless darkness. ... Now, what revelation you have of your election? This thought, if it has impressed itself upon him, either continually strikes him in his misery with harsh torments or utterly overwhelms him" (Calvin 1960, 968-969). According to Calvin, the only alternative given to the believer to understand predestination with a safe, calm, and even pleasant progress is "inside the way." He holds that "just as those engulf themselves in a deadly abyss who, to make their election more certain, investigate God's eternal plan apart from His Word, so those who rightly and duly examine it as it is contained in His Word reap the inestimable fruit of comfort." Hence, Calvin stresses that the only mode of inquiry is "to begin with God's call, and to end with it" (Calvin 1960, 969).

Seeking "inside the way" alludes to the palpational understanding in which believers receive the assurance of the promise of election according to Christ's Law of Freedom. Calvin's exhortation to seek only "inside the way and through the gate" the state of one's salvation contrasts with the anxious approach involved in Weber's "certitudo salutis." Calvin's vista comprises the understanding of one's salvation through the palpation of God's Love in Christ alone.¹⁵⁷ As God has chosen the elect not in themselves but in Christ, says Calvin, "Christ, then, is the mirror wherein we must, and without self-deception may, contemplate our own election. For since it is into His body the Father has destined those to be engrafted whom He has willed from eternity to be His own, that He may hold as sons all whom He acknowledges to be among His members, we

¹⁵⁷ The sublime understanding of Christ as the only way and gate to attain this promise of everlasting life is evident in His words, when proclaiming: "I am the way, and the truth, and the life; no one comes to the Father but through Me" (John 14:6); and elsewhere, "I am the gate; whoever enters through me will be saved" (John 10:9).

have a sufficiently clear and firm testimony that we have been inscribed in the book of life [Revelation 21:27] if we are in communion with Christ” (Calvin 1960, 970). Calvin notes that the Lord has given to the elect that sure communion with Himself through the appropriation of the promises He has given them in Christ. Whoever hears Christ’s word, and believes the Father who sent Him, “has eternal life, and does not come into judgment, but has passed out of death into life” (John 5:24) (Calvin 1960, 971). Therefore, concludes Calvin, “it is His will that we be content with His promises, and not inquire elsewhere whether He will be disposed to hear us. This prudence will free us from many traps if we know how to apply to a right use what has been rightly written” (Calvin 1960, 971).¹⁵⁸

In sum, Calvin sustains a view that appears opposite to the effects Weber assumed in the adoption of the Doctrine of Predestination as the source underlying the developmental effect attributed to the Protestant Ethic. For Calvin, assurances of one’s salvation are found only in the promises of the Scriptures, not in an individual’s deeds or works. In this sense, Calvin observes that the elect “are out of danger of falling away because the Son of God, asking that their godliness be kept constant, did not suffer a refusal” (Calvin 1960, 975). From this vista, Calvin affirms that “our hope extends into the future, even beyond death, and that nothing is more contrary to its nature than to doubting what will happen to us” (Calvin 1960, 974). The elect “possess the sure and unbroken truth of the promises, so that one cannot speak of any disagreement between God’s eternal election and the testimony of His grace that He offers to believers” (Calvin 1960, 985). Therefore, different from the anxious faith that Weber ascribes to the Protestant believer, Calvin’s

¹⁵⁸ Calvin further rejects any form of anxiety in the believers regarding election, for in the Word they find also Christ’s promises regarding perseverance. He notes that the promises Christ has given to the believers free them from any anxiety (Calvin 1960, 972). For instance, Calvin finds the main expressions of these promises in Christ’s words, when saying, “[a]ll that the Father gives Me will come to Me, and the one who comes to Me I will certainly not cast out... This is the will of Him who sent Me, that of all that He has given Me I lose nothing, but raise it up on the last day” (John 6:37,39). This is the same tenor of Christ’s promise, when proclaiming that “My sheep hear My voice, and I know them, and they follow Me; and I give eternal life to them, and they will never perish; and no one will snatch them out of My hand. My Father, who has given them to Me, is greater than all; and no one is able to snatch them out of the Father’s hand” (John 10:27-29).

view of Predestination proffers the diametrically opposite profile. It renders an industrious faith that rests calmly only on Christ's immovable promises concerning the rewards, fruits and perseverance of the believer's faith. This is the tenor of Calvin's summarizing statement, when saying that "predestination, rightly understood, brings no shaking of faith but rather its best confirmation" (Calvin 1960, 976).

4.2 Individual Manifestations of the Decision-Making Process Resulting from the Sublime Palpation of Christian Freedom

The individual developmental effects that this dissertation attributes to the Protestant Ethic depart from the role Weber assigns to Calvin's understanding of Predestination. Different from Weber's notion of Economic Rationalism, Palpational Rationality underscores a model of reasoning and decision making that, in Calvin's view, is "more of the heart than of the brain, and more of the disposition than of the understanding." As Calvin stresses, no one can duly know it "without at the same time apprehending the sanctification of the Spirit" (Calvin 1960, 552). The sublime essence of the image of God's love and its unique liberating effect on the individual's mind appear to form the core of Calvin's pietistic understanding of the notion of Christian Freedom.¹⁵⁹ From this vista, Calvin asserts that "when we call faith 'knowledge' we do not mean comprehension of the sort that is commonly concerned with those things which fall under human sense and perception. For faith is so far above sense that man's mind has to go beyond and rise above itself in order to attain it. Even where the mind has attained, it does not comprehend what it feels. But while it is persuaded of what it does not grasp, by the very certainty of its persuasion it understands more than if it perceived anything human by its own capacity" (Calvin 1960, 559).

¹⁵⁹ This sublime essence is explicit in the core of the apostle's prayer for the gentiles: "to be strengthened with power through His Spirit in the inner man, so that Christ may dwell in your hearts through faith; and that you, being rooted and grounded in love, may be able to comprehend with all the saints what is the breadth and length and height and depth, and to know the love of Christ which surpasses knowledge, that you may be filled up to all the fullness of God" (Ephesians 3:16-19).

Calvin recognizes the relevance that Palpational Rationality attributes to the liberating effect of the Sublime Palpation as a means to counteract the slavery of innate feelings over reason. He acknowledges that the freedom of human nature is revealed in the capacity to contain the lusts and fears of the flesh, but this capacity is only obtained by God's grace. The sealed heart is able to stand the weakness of the mind when confronted with the attacks of the flesh: "the Word of God is not received by faith if it flits about in the top of the brain, but when it takes root in the depth of the heart that it may be an invincible defense to withstand and drive off all the stratagems of temptation" (Calvin 1960, 583). Calvin notes that "the Spirit accordingly serves as a seal, to seal up in our hearts those very promises the certainty of which it has previously impressed upon our minds; and takes the place of a guarantee to confirm and establish them" (Calvin 1960, 584). Given these considerations, Calvin concludes that "far removed from perfection, we must move steadily forward, and though entangled in vices, daily fight against them. From this it also follows that we must also shake off sloth and carelessness, and watch with intent minds lest, unaware, we be overwhelmed by the stratagems of our flesh" (Calvin 1960, 607).

The following section summarizes the manifestations of Palpational Rationality in the context of key individual preferences resulting from the liberating effect of Christian Freedom as deduced from Calvin's *Institutes*. First, the importance of a liberating, sober and trusting Christian faith is emphasized as the basis for the formation of individual preferences in contrast with the psychologically coercive substratum that Weber assigns to the belief of Predestination. Second, the assimilation of the approach of Palpational Rationality is detailed as the core of preferences based on the constant practice of optimal reasoning and decision making. Finally, the different venues of interaction concerning these two types of preferences are examined to determine a third type of preference related to the optimal use of worldly resources, which seems to foster economic behavior generally associated with capital accumulation.

4.2.1 *Calvin's View of Self-Denial and of Bearing One's Cross*

Calvin asserts the preeminence of behavioral effects resulting from perceiving God's love through Christ's liberating ministry as manifested in two main outcomes: self-denial and bearing one's own cross. In agreement with the core notion of Palpatational Rationality, Christian Freedom seems to form for Calvin the main factor shaping the innermost transformation of human nature. This renewal tends to manifest itself in liberating individuals from the slavery of inner feelings by adopting a criterion for decision making that relies upon the palpation of the Sublime Image. Self denial and the bearing of one's own cross constitute for Calvin the beginning of the Christian moral life.¹⁶⁰ Indeed, Calvin asserts that self-denial and bearing of the cross form the two foundational pillars of the moral Christian life because "it is not of slight importance for you to be cleansed of your blind love of self that you may be made more nearly aware of your incapacity; to feel your own incapacity that you may learn to distrust yourself; to distrust yourself that you may transfer your trust to God; to rest with a trustful heart in God that, relying upon His help, you may persevere unconquered to the end; to take your stand in His grace that you may comprehend the truth of His promises; to have unquestioned certainty of His promises that your hope may thereby be strengthened" (Calvin 1960, 704).

According to Calvin, self-denial is the first step toward achieving liberation in Christ.¹⁶¹ Believers seem to find the strength to achieve self-denial through the liberating effect of the Sublime Palpation because in its supra-somatic marking effect they can be detached from the most violent selfish feelings. This marking-effect appears critical to actualize the capabilities, gifts and

¹⁶⁰ Self-denial and bearing of the cross are the two effects circumscribed in the Lord's maxim, when describing the essence of what it means to follow Him: "If anyone wishes to come after Me, he must deny himself, and take up his cross and follow Me" (Matthew 16:24).

¹⁶¹ Self-denial has important implications not only for the relationship of the believers with God, but also with their neighbors; for they are called to "[d]o nothing from selfishness or empty conceit, but with humility of mind regard one another as more important than yourselves" (Philippians 2:3). This is the sense in which the apostle Paul exhorts to be "devoted to one another in brotherly love; give preference to one another in honor" (Romans 12:10).

talents of believers, and to render futile any boasting in the self.¹⁶² Calvin observes that in the absence of this palpational form of freedom, even the gentleness displayed when everything is sweet and pleasant is only a reflection of the innate tendency of individuals to flatter themselves, and bear a kind of kingdom in their breast. Claiming as their own what pleases them, they tend to censure the character and moral of others. Given these considerations, the moral behavior on which Hume saw resting the social norms or conventions guaranteeing peace and prosperity appears to amount only to illusive self-complacency because as Calvin states, “you will never attain true gentleness except by one path: a heart imbued with lowliness and with reverence for others” (Calvin 1960, 694).

The first effect that the Sublime Palpation seems to produce on the formation of individual and collective developmental preferences points toward the renewal of the inward being, which transcends the mere appearance of human actions and focuses on the innermost nature of their motives and intentions. According to Calvin, “it is that we remember not to consider men’s evil intention but to look upon the image of God in them which cancels and effaces their transgressions, and with its beauty and dignity allures us to love and embrace them” (Calvin 1960, 697). In this context, self-denial points toward the first manifestation of the liberating effect of the Sublime Image because, thereby, believers neither desire, nor hope, nor contemplate, any other way of prospering than by the Lord’s blessing. As Calvin further reminds, “that blessing follows only him who thinks purely and acts rightly, thus it calls back from crooked thoughts and wicked actions all those who seek it. Then will a bridle be put on us that we may not burn with an immoderate desire to grow rich or ambitiously pant after honors” (Calvin 1960, 699). In these words, Calvin recognizes the innermost form of freedom first manifested in the denial of the self as the

¹⁶² This is at the basis of Paul’s inquiry, when asking, “who regards you as superior? What do you have that you did not receive? And if you did receive it, why do you boast as if you had not received it?” (1 Corinthians 4:7).

necessary first step towards achieving the renewed behaviors and preferences that this dissertation assigns to the Protestant Ethic of Development.

The bearing of the cross refers to the behavioral expressions of the liberating effect that the Sublime Palpation seems to produce when constantly exercised as optimal criterion for decision making.¹⁶³ According to the constant marking effect of the Sublime Palpation on the evaluation, choice and execution of optimal outcomes, believers can develop preferences externally manifested in their unique discipline and obedience. These external manifestations seem to follow the same norm of action characteristic of Christ's freedom, which resulted from the motion of His unique Love for the human race. Hence, when individuals follow in their decisions and actions the same marking effect that Christ's Sublime Love determined in His own liberating ministry, they bear a cross of their own. In Calvin's view, the bearing of one's own cross refers to the individuals' inner struggle "between their natural sense, which flees and dreads what it feels adverse to itself, and their disposition to godliness, which even through these difficulties presses toward obedience to the divine will" (Calvin 1960, 710).

4.2.2 *Industrious and Stewardly Preferences*

Industrious preferences form the core of the unique outcomes that authors like Adam Smith and Max Weber assigned to the Protestant Ethic, which they evidenced in the increased levels of labor productivity and capital accumulation distinctive of Protestants. Following the view of Baxter, Weber defines the Protestant conception of the division of labor that resulted from the view of a psychologically coercive faith as the main factor enabling the quantitative and qualitative improvement in production (Weber 2001, 107). Weber affirms that the Protestant Asceticism added to the ancient conception of faithful labor constituted "the force which was alone

¹⁶³ The apostle Paul observes that individuals are disciplined through the bearing of the cross "so that we will not be condemned along with the world" (1 Corinthians 11:31).

decisive for its effectiveness: the psychological sanction of it through the conception of this labour as a calling” (Weber, [1930] 2001, 121). In this context, Weber further holds that “the emphasis on the ascetic importance of a fixed calling provided an ethical justification of the modern specialized division of labour,” which in turn was influential for “the development of a capitalistic way of life” (Weber 2001, 109-111). Thus, the division of labor that Adam Smith understood as the “greatest improvement in the productive powers of labour” (Smith, [1776] 1976, 7) remained for Weber ethically justified, and psychologically sanctioned, by the feeling of anxiety forwarded by the belief of predestination. Weber assigned central importance to the effect that the Protestant Ethic has on economic behavior, specifically on labor productivity, as the main factor spurring capital accumulation and as the critical element underlying the Spirit of Capitalism. In *Gesammelte Aufsätze zur Religionssoziologie*, Weber wrote of the distinctive beliefs of world religions citing isolatable elements responsible for the formation of work ethics. Nevertheless, he held that none resulted in the development of advanced industrialized economies as those related to the Protestant tradition (Weber 1988).

Conversely, the present dissertation maintains that the distinctive element of the Protestant Ethic relies on the liberating effect of the Sublime Palpation on human reason. On this ground, the Principle of Christian Freedom does not seem to work through any form of psychological coercion, but, rather, through a complete transformation of rational capabilities. As a result, believers are open to a form of understanding that surpasses the constraints of the innate power to choose, which is set in the self. This renewal appears to manifest itself in the actualization and promotion of innovative and productive capabilities resulting in the economic effects generally associated with the Protestant Ethic. Accordingly, the notion of the division of labor central to Adam Smith’s thoughts in *The Wealth of Nations* appears to constitute only an effect of the palpation of Christ’s Freedom, not its cause. Weber intuits the directionality of this relation-

ship when noting that a calling is the exercise of the believers in “ascetic virtue,” and the proof of their state of grace through their consciousness, which “cannot be regarded as a reflex of economic conditions” (Weber 2001, 207 and footnote 36, p. 237). Weber tangentially approaches here the larger scope of the effect the Principle of Christian Freedom seems to have on decision making and preference formation. This is a perspective generally absent in Adam Smith’s treatment of the division of labor as an essential factor for capital accumulation, but of central importance for the formation of developmental preferences according to Palpatational Rationality.

The ensuing accumulation of capital resulting from the integration of industrious preferences differs from Weber’s conception of labor as a means for acquisition. The fruitfulness that belief in Christian Freedom tends to produce in the individual has as its aim not the accumulation of capital, but the fulfillment of service to God, church and society, according to the optimal disposition of endowed talents and gifts. This view refers to a notion of service not as an end in itself, but as a means for the believers’ fruitfulness resulting from the liberating effect of Christ’s Freedom. This liberating effect seems to explain Weber’s observations regarding Protestants’ higher rates of labor productivity and invention, as well as higher levels of saving, investment and philanthropy. Calling and predestination are concepts that represent only in allegorical terms the deeper forces through which the Christian Freedom affects individual behavior. Instead of the psychological force that derives from the need of individuals to display signs of their “*certitudo salutis*,” these deeper forces seem to reveal the effect of the Christian Freedom on decision making processes and on the formation of preferences considered critical for development.

This dissertation shares the importance that Weber assigns to the Protestant ethic on developmental outcomes, but it departs from Weber’s position concerning the means and processes through which this relationship takes place. From the liberating effect of palpating Christ’s Freedom, renewed individuals seem to acquire knowledge of the self and of the talents received for

the performance of their service to God, which tend to deeply influence their sense of stewardship in the management of physical resources. The liberation of their mind from the slavery of innate feelings enables believers to devote undivided attention and concentration to the performance of their activities resulting in higher levels of productivity and dexterity. The combination of stewardship of entrusted resources with higher levels of productivity characteristic of their self-control, suggests a propensity toward asset accumulation, which constitutes an indirect or accessorial outcome from the liberating effect of palpating the Sublime Image.

The same free character indirectly reflected in capital accumulation seems also expressed in preferences that make a restrained and stewardly use of the conveniences of life. Calvin asserts that there is an intrinsic good employment for each thing that restrains and limits its uses. The first limiting quality present in the good nature of things derives from the undeletable stamp of God; while the second refers to the absolute value that each outcome has according to God's perspective. Hence, the rule of Scripture to regulate the use of earthly things is for Calvin a plain revelation that all things are entrusted to humanity to be used with the clear understanding that each will render account of them (Calvin 1960, 723).¹⁶⁴ Calvin relies on this understanding of the intrinsic limits of life's conveniences in order to avoid the extremes of both strictness and laxity in the use of worldly things. He argues that there is an intrinsic good use for each thing that is in accord with the goodness that God has bestowed upon it. Calvin observes that "the use of God's gifts is not wrongly directed when it is referred to that end to which the Author himself created and destined them for us, since He created them for our good, not for our ruin" (Calvin 1960, 720). The liberating effect that appears manifested in the formation of integral industrious preferences is complemented by the determination of traits expressing restraints and limits in the use of

¹⁶⁴ This echoes the apostle Paul's view when exhorting "those who buy, as though they did not possess; and those who use the world, as though they did not make full use of it; for the form of this world is passing away" (1 Corinthians 7:30-31).

earthly benefits that derive from their intrinsic good nature. Palpational Rationality suggests that the renewed mind perceives these limits as a result of the integral liberating effect of the Sublime Image, both on the control of fearful and lustful feelings that pervert the good use of things, and in the actualization of the potential to progressively perceive the good use of earthly means.

4.2.3 Formation of Preferences Associated with Optimal Decision Making

The liberating effect of the Sublime Palpation on the distortive effect of innate feelings enables the progressive perception of the value and occurrence of outcomes indispensable for evaluating, selecting, and executing choices in complex social and moral situations. The first manifestation of this freedom refers to a mind that has been liberated from the enslaving effect of violent innate passions, and that is entrusted with the power to correct the distortions that these feelings produce on the subjective perception of choices. A second manifestation of this liberating effect is associated with the progressive actualization of the individual's potential to transcend the ordinary and relative dimension of outcomes and events. As described in the previous chapter, this actualized potential appears associated with a productive and highly creative mind. In this context, Palpational Rationality holds that whenever the mind is liberated from the constant struggle against the lusts of the flesh and the fear of death, it is progressively actualized in its innate capability to perceive both the truth of the Scriptures and of the physical world. Finally, the imprint of the Sublime Image appears to boost the mental focus and short-term memory required for the formation of individual preferences conducive to technological and scientific advances. As examined in detail in chapter 6, the marking effect of the Sublime Palpation on these mental operations seems essential for the optimal perception, evaluation, selection, and execution of choices at the core of the formation of innovative and creative preferences.¹⁶⁵ The increase in produc-

¹⁶⁵ As chapter 6 explains based on Damasio's view, somatic markers are feelings about the body states that make certain images more salient than others during decision making; in this manner, they assist the process of sifting through

tivity and dexterity that these operational effects seem to generate on the individual's productivity relate to the higher level of skill and innovation that Hume and Smith assumed as necessary outcomes of social interactions and conventions. Conversely, the unique attributes that Hume and Smith believed to be characteristic of any society suggest instead the distinctive elements of Protestant communities whose palpational freedom they took for granted in the understanding of their comparatively higher levels of institutional and economic development.

In sum, the division of labor seems to reflect the economic dimension of production deriving from these liberating, corrective, and integral effects, for it is in itself a result of the innovative character of a mind that can be transformed as a result of the Sublime Palpation of Christian Freedom. As an effect, the division of labor can produce improvements in production if performed by agents with a renewed mind, by which they are able to increase outcome, and to improve efficient methods of production. This suggests that labor productivity is not in itself a physical phenomenon, as measured by the increase of output in a period, but a state associated with the freedom of the mind and will, which enables individuals to continuously improve their use of time, skills and resources. This appears to be the underlying element that remained hidden in the Baden Statistics at the core of Weber's study, as well as Smith's inquiry into the nature and causes of the wealth of nations. Smith intuited the importance that this disposition of the mind had on increased production and capital accumulation, although, like Hume, he attributed it to the social conventions manifested in the division of labor. In contrast, the evidence of neurobiology suggests that these conventions are effective if resulting from the spontaneous interactions of minds previously set free from the enslaving imprint of selfish feelings, which social conventions are too weak to overcome.

all possible options by selectively highlighting certain images over others. Somatic markers correspond to biological mechanisms that covertly or overtly aid the pre-selection of options, rather than applying reason to all possible choices. They facilitate the complex processes of social and moral decision making because as Damasio observes, "biological drives and the automated somatic-marker mechanism that relies on them are essential for some rational behaviors, especially in the personal and social dimensions" (Damasio 2005, 173-189, 192).

4.3 Collective Manifestations of the Decision-Making Process Resulting from the Sublime Palpation of Christian Freedom

The individual liberating effect of the Sublime Palpation of Christian Freedom appears manifested in the agential role of a horizontally organized congregation that collectively reflects the renewed preferences of its members. As free individuals reveal these renewed preferences within the Reformed Free Church, these preferences in turn seem to affect the role that the church plays as agent of the liberating effect attributed to the Sublime Palpation of Christian Freedom.¹⁶⁶ Given this, the characteristic elements of the Reformed Free Church appear to result from the manifestation of collective preferences derived from the liberating effect of the Sublime Palpation. The following section surveys Calvin's outlook regarding the three main agential roles that the church seems to perform on the practice of the palpational understanding of freedom, justice and altruism. In examining the formation of developmental collective preferences, the present dissertation considers these agential roles of the Reformed Free Church as closely associated with the higher levels of subjective well-being and prosperity empirically evidenced by countries of Protestant inheritance, as detailed in chapter 1.

The first manifestation of collective developmental preferences determined by the Sublime Palpation corresponds to the unique horizontal structure of the Reformed Free Church.¹⁶⁷

This distinctive form of ecclesiastical organization emphasizes the individual preferences of a

¹⁶⁶ As explained in chapter 1, the notion of Reformed Free Church used in the present work refers to the essence of the Protestant Church as a return to the non-hierarchical, horizontal and local essence of the early Christian Church. Essentially, this notion refers to the form of congregation that ensued after Calvin's influence. It is characterized by individuals who have benefitted from the cognitive and volitional changes produced by the Calvinist understanding of the Principle of Christian Freedom. This concept underscores the aggregate causal effects described by Palpational Rationality in the determination of horizontal, pluralistic and non-hierarchical forms of ecclesiastic and social organizations characteristic of Calvin's Protestantism. It also follows the form of ecclesiastic government ensuing from Calvin's reaction against the centralized structure of the Papacy, and the monarchy, as well as his defense of the freedom of conscience.

¹⁶⁷ Regarding the collective manifestations of this freedom that produces renewal at the innermost level of each individual, Douglass cites Calvin's view that "this restoration or new creation of freedom in the kingdom of Christ, the Christian church, anticipates the final recreation of all things at the end of time. So the church must be reformed according to a biblical vision of this kingdom of freedom. Calvin affirms Augustine's use of Paul's words: 'Now where the Spirit of the Lord is, there is Freedom' (II Corinthians 3:17)" (Douglass 1983, 75).

vigilant faith against excesses and abuses of power. The most important collective preference of the believer that is renewed in Christ's Freedom refers to their common execution of the mission to preserve the purity of doctrine in the interpretation of Scriptures.¹⁶⁸ The pure teaching of the Gospel is essential for the church because on it rests the liberating understanding of the Sublime Image of God's love for the human race, as detailed in chapter 3. The main element that in its organization signals the existence of Christ's Free Church is the pure teaching of the Gospel, through which the Sublime Image of God's love is instilled in the mind of the believer.

As an aggregated manifestation of its liberating effect, the palpation of the Sublime Image appears to cement and perpetuate the unity of the church as pillar of the truth.¹⁶⁹ Cyprian observes that the separation of the church from sound and pure doctrine is the first cause of its division and demise: "heresies and schisms arise because men return not to the Source of truth, seek not the Head, keep not the teaching of the Heavenly Master."¹⁷⁰ As in the case of its freedom, the communion and unity of the church also seem to depend on the purity of the palpation of the Sublime Image, for as Calvin notes, "this communion is held together by two bonds, agreement in sound doctrine and brotherly love...whenever church unity is commended to us, this is required: that while our minds agree in Christ, our wills should also be joined with mutual benevolence in Christ. ... Apart from the Lord's Word there is not an agreement of believers but a faction of wicked men" (Calvin 1960, 1046-1047).

According to Calvin, the Lord entrusted the church with two main functions whose execution requires a balance between the universality and order that appear most characteristic of the Reformed Free Church. The preservation of the purity of doctrine that corresponds to all mem-

¹⁶⁸ In the fulfillment of this high office, the apostle Paul refers to the assembly of the free as "the household of God, which is the church of the living God, the pillar and support of the truth" (1 Timothy 3:15).

¹⁶⁹ The apostle Paul calls all believers "to be of the same mind with one another according to Christ Jesus" (Romans 15:5). He states somewhere else, that there is "one body and one Spirit, just as also you were called in one hope of your calling; one Lord, one faith, one baptism, one God and Father of all who is over all and through all and in all" (Ephesians 4:5).

¹⁷⁰ Cyprian, *On the Unity of the Catholic Church*, v. 3 (1841), cited by Calvin (1960, 1047).

bers of the church is performed within the congregation under the oversight of elders democratically elected. Likewise, the function of healing that all members of the congregation are called to fulfill among the poor, weak, and needy is also performed, for the purposes of order, under the oversight of democratically elected deacons. As examined next with basis on Calvin's views, the Reformed Free Church seems endowed with a horizontal organization that tend to guarantee the execution of the universal command entrusted to all its members to preserve the purity of doctrine, and to provide for the needs of the poor. This combination between universal discharge and orderly oversight appears critical for preserving the free fulfillment of these functions while securing the freedom of believers, and of the congregation, from tyrannical abuses of authority.

The preferences for discharging the function of Scriptural interpretation suggest the core of the distinctive nature of the Reformed Free Church that prevents centralization of power resulting in tyranny. It is not by power that the overseers govern in the church but by the honor and glory that has been restituted to them through Christ's unique act of liberation. Thus, referring to Peter's honorific ascendance among the apostles, Calvin comments that "the apostles generally yielded this to Peter, that he should speak in the congregation and, as it were, precede the rest of the discussion, exhortation and admonition [Acts 2:14; 4:8; 15:7]; but we read nothing at all about power"(Calvin 1960, 1107). Likewise, referring to the importance that the Roman See held even during Gregory's time, Calvin notes "that the Roman See was greater than in previous ages. And yet it differed greatly from an unbridled domination in which one man could command others according to his pleasure" (Calvin 1960, 1131). In consequence, Calvin reminds that the hierarchical preeminence of the bishop over the elders was not established either in concordance with Scriptures or the practice of the early Christian Church, but only according to the custom of power centralization that became prevalent in the Roman Empire. As Calvin asserts "afterward, to remove the seeds of dissention, all oversight was committed to one person" (Calvin 1960). In this

manner, says Calvin, “some called the government thus constituted a ‘hierarchy,’ an improper term (it seems to me), certainly one unused in the Scripture” (Calvin 1960, 1072). Conversely, Calvin observes in the horizontal organization of the church, and the universal fulfillment of its main missions, the reflection of Christ’s liberating work as the true essence of its free nature. Calvin holds that the church of God is truly present wherever the Word of God is purely preached, and the sacraments administered according to Christ’s institution (Calvin 1960, 1023).¹⁷¹

In conclusion, the collective manifestations of individual preferences for a synergic, consensual and plural fulfillment of the ministry of the Word seems reflected in the administration of the sacraments found in the palpational understanding of the horizontal structure of the Reformed Free Church. According to Calvin, the same authority is shared by those lawful assemblies that have been set up in accordance with local needs (Calvin 1960, 1024). Within the horizontal structure of the Reformed Free Church, believers collectively practice decision-making processes and preferences resulting from the Sublime Palpation of Christian Freedom. In turn, such processes and preferences seem to influence the structure and function of the Reformed Free Church as a School of Christian Freedom. In this sense, although dispersed among different nations and endured throughout different ages, the universal Church is united by the bonds of the same faith, the sublime knowledge of God’s salvation, and the truth of the divine doctrine.

The other important collective manifestation of the decision-making process resulting from the Sublime Palpation of Christian Freedom refers to social and institutional preferences developed within the Reformed Free Church. These collective manifestations refer to the agential role that this church seems to fulfill as a School of Freedom, specifically concerning the model of

¹⁷¹ Calvin’s view is founded on the understanding of the apostle Paul, when stressing that Christ’ church refers to “God’s people and members of God’s household, built on the foundation of the apostles and prophets, with Christ Jesus Himself as the chief cornerstone” (Ephesians 2:20).

reasoning and decision making found at the core of Palpational Rationality and its impact on complex social and moral choices. In like manner, the church appears to discharge an essential developmental role through the collective manifestations of decision-making processes and preferences that result from a palpational understanding of justice and altruism.

4.3.1 *The Free Church as School of Palpational Freedom*

The church in its free and horizontal form is inseparably united to the transforming power of the Principle of Christian Freedom. As the assembly of those who have been freed, it plays in turn an agential role for the liberating effect attributed to the Sublime Palpation of Christian Freedom. Accordingly, Cyprian notes that “you cannot have God for your Father unless you have the church for your Mother.”¹⁷² The distinctive integration that the church enjoys with Christ as agent of His liberation is also recognized by Calvin, when asserting that “it is not sufficient, indeed, for us to comprehend in mind and thought the multitude of the elect, unless we consider the unity of the church as that into which we are convinced we have been truly engrafted. For no hope of future inheritance remains to us unless we have been united with all other members under Christ, our Head” (Calvin 1960).

The church performs its agential function as School of Freedom through its intermediation in edifying and equipping believers according to the renewed good use of their power to choose.¹⁷³ This is the sense in which Calvin reminds that “among the many excellent gifts with which God has adorned the human race, it is a singular privilege that He deigns to consecrate to Himself the mouths and tongues of men in order that His voice may resound in them” (Calvin 1960, 1018). The agential nature of this role emphasizes the instrumental nature of the church’s

¹⁷² Cyprian, *On the Unity of the Catholic Church*, vi (Greenslade 1956, 127), cited by Calvin (1960, 1012).

¹⁷³ This agential role forms the basis of Paul’s words, when saying that the Lord “gave some as apostles, and some as prophets, and some as evangelists, and some as pastors and teachers, for the equipping of the saints for the work of service, to the building up of the body of Christ; until we all attain to the unity of the faith, and of the knowledge of the Son of God, to a mature man, to the measure of the stature which belongs to the fullness of Christ” (Ephesians 4:11-13).

intermediation with regard to this liberating imprint that uniquely originates from Christ's Law of Freedom, for as Calvin further notes, "we ought to remember those statements in which God, ascribing to Himself illumination of mind and renewal of the heart, warns that it is sacrilege for man to claim any part of either for himself" (Calvin 1960, 1021). Hence, Christ has ordained to perform His unique work of transformation of the human heart, mind and will through the instrumental role given to each renewed individual. In this capacity, believers share the elements of the Sublime Image of God's Love, and grow together in the practice of its liberating effects. The collective dispensation of this high function assigned to each member of the Free Church signifies the nature of this congregation as a School of Palpational Freedom.

4.3.1.1 Preferences for Mutual Accountability and Tolerance

The first agential role the Free Church plays as School of Palpational Freedom refers to the collective setting it provides for believers to perceive the Sublime Image. Regarding the importance of this setting, Calvin observes that "many are led either by pride, dislike, or rivalry to the conviction that they can profit enough from private reading and meditation, hence they despise public assemblies and deem preaching superfluous. But, since they do their utmost to sever or break the sacred bond of unity, no one escapes the just penalty of this unholy separation without bewitching himself with pestilent errors and foulest delusions" (Calvin 1960, 1018). A critical collective manifestation of the decision-making process resulting from the Sublime Palpation implies preferences for mutual support and accountability in order to avoid error in the understanding of Christ's liberating ministry. In the context of the free congregation individuals palpate the supra-marking effect of this freedom according to Christ's promise that whenever two or more gather in His name, His presence will be in their midst (Matthew 18:20). Hence, through the presence in which a multitude is harmonized into the unity of Christ's body, individuals tend to

collectively manifest the form of palpational understanding of the Scriptures that reduces error in their interpretations, and purges superstition and tyranny from their midst.

The church further fulfills its role as School of Palpational Freedom through the collective manifestations of a unique sense of tolerance that results from the palpational understanding that, as a congregation, it is comprised by the reprobate and the elect.¹⁷⁴ This palpational understanding of patience and tolerance is recognized by Calvin, when observing that “according to God’s secret predestination (as Augustine says), ‘many sheep are without, and many wolves are within.’ For He knows and has marked those who know neither Him nor themselves. Of those who openly wear His badge, His eyes alone see the ones who are unfeignedly holy and will persevere to the very end [Matthew 24: 13]—the ultimate point of salvation” (Calvin 1960, 1022).¹⁷⁵ The church performs its liberating agency by fomenting the practice of the believers’ liberty in love, patience, humility and tolerance. On one hand, the Lord has willed for the elect and reprobate to grow together in the church. On the other, He has kept hidden in His unsearchable Will the knowledge of their election, giving to believers only the assurance in faith that emanates from the promise of His salvation. In the collective practice of their mutual tolerance, individuals seem to consolidate the Reformed Free Church’s unique unity, in which its members learn to remain vigilant from any undermining attempts, but also to tolerate those differences in which this unity is not compromised.¹⁷⁶ Thus, as the members of the Reformed Free Church collectively manifest

¹⁷⁴ The Lord unveiled this apparent paradox in the Parable of the Tares among Wheat, in the command that the Master gives to His servants not to gather the weeds from among the wheat “for while you are gathering up the tares, you may uproot the wheat with them” (Mathew 13:27-30, 40-41). In this manner, the Lord has willed that within the church both the elect and the reprobate would coexist, whom He will separate at the last day of the promised judgment.

¹⁷⁵ Augustine, *John’s Gospel*, xlv. 12 (1841), cited by Calvin (1960, 1022).

¹⁷⁶ This unique vigilant and tolerant unity among believers is a true mark of their freedom in Christ, which He has solemnly asked of the Father in His high priestly prayer, when saying, “[t]he glory which You have given Me I have given to them, that they may be one, just as We are one; I in them and You in Me, that they may be perfected in unity” (John 17:22-23). The same type of unity is echoed in the apostle’s plea to the church in Corinth, when saying, “I exhort you, brethren, by the name of our Lord Jesus Christ, that you all agree and that there be no divisions among you, but that you be made complete in the same mind and in the same judgment” (1 Corinthians 1:10). In like manner, the distinctive mark of this vigilant and tolerant unity is also manifested in the exhortation of the apostle Paul to the Ephesians, when asking them “to walk in a manner worthy of the calling with which you have been called, with all humility

the palpational understanding of Christ's freedom, they are also called to mature in this understanding through patience and tolerance by preserving the pure perception of the Sublime Image. In this context, they seem able avoid divisions of the congregation and preserve its peace and unity.¹⁷⁷

4.3.1.2 Preferences for Controlled Government

The training in Palpational Freedom consolidates the collective manifestation of essential preferences for holding accountable members and overseers of the church in the execution of its main functions. This contrasts with the lack of mutual accountability that seems characteristic of hierarchical forms of church organization. Calvin emphasizes the importance of these preferences in the context of the erosion resulting from the institution of the Papacy within the Roman Catholic Church. The original scriptural principle followed by the early church to have both elders and church members participating in the election of overseers progressively devolved within the Roman Catholic Church into an indirect form of election. In this system, elders exercised only a counterbalancing function to avoid excesses and disorder among the people. The abandonment of the universal responsibility to hold accountable the fulfillment of the church's function seems to have facilitated encroachments against the church's freedom that the Reformation vehemently opposed. In categorical terms, Calvin imputes to this cause the corruption that progressively erupted among overseers, as well as the rampant hatred and division within the church's members. In Calvin's view, such divisions resulted from the failure of overseers to discharge their function as teachers of Christ's freedom because "the Word of God was not being heeded among tumults and factions of the people" (Calvin 1960, 1086). This is the same disregard that Gregory I lamented,

and gentleness, with patience, showing tolerance for one another in love, being diligent to preserve the unity of the Spirit in the bond of peace" (Ephesians 4:1-3).

¹⁷⁷ Although the integration of Calvin's view of Christian Freedom within the church did not inoculate the Reformed Free Church against dissent and schism, Witte notes that it rendered this form of ecclesiastic organization "remarkably salient over three centuries in numerous countries and cultures" (Witte 1996, 402)

when confessing: “we forsake the ministry of preaching; and to add to our punishment, we are called ‘bishops; who have the name of an honorable office, not its power.’”¹⁷⁸ Hence, the collective manifestations of the decision-making process of the Sublime Palpation seem to influence the distinctive organization of the Reformed Free Church. In this regard, the collective manifestation of preferences for mutual accountability in the dispensation of the church’s main function contrasts with the abuses and division that became predominant within the hierarchical form of organization of the Roman Catholic Church.¹⁷⁹

Calvin seems to associate neglect of biblical teaching with deficiencies in the practice of freedom that resulted in collective preferences promoting tyranny within the Roman Catholic Church, especially concerning the election of overseers. Calvin holds that when “the people began to be more negligent in holding elections, and cast that responsibility upon the presbyters as not applying to themselves, the latter abused this opportunity to usurp a tyranny for themselves which they after confirmed by issuing new canons”(Calvin 1960, 1087). Calvin describes how the canon of the Council of Chalcedon that prescribed no ordination free of pastoral obligation, and assigned to any ordained a place for the exercise of this office, was progressively interpreted as requiring “a title as meaning an income sufficient of their support.”¹⁸⁰ This deviation from the original function of the overseer, and the lack of counterbalance by the assembly, led to the great abuses that Calvin described as distinctive of the Roman Church, especially regarding simony in the collation of benefices (Calvin 1960, 1090-1094).¹⁸¹ In the absence of the due counterbalance

¹⁷⁸ Gregory I, *Homilies on the Gospels I*, MPL (Migne and Pearson 1965, 76 1130, 1146) cited by Calvin (1960, 1096).

¹⁷⁹ Similar to the horizontal and non-hierarchical nature that this dissertation assigns to the Reformed Free Church, Witte holds that Calvin’s “theory of the Congregationalist church polity broke the power of synodical and episcopal centralization, and eventually was used to support concepts of confessional pluralism. Witte states that Calvin’s “theory of a coequal and cooperative clergy and magistracy provided a strong foundation for later constitutional protections.” In line with the mirroring effect on society that this dissertation attributes to the Reformed Free Church’s assimilation of Christian Freedom, Witte maintains that Calvin’s “theory of the moral responsibilities of both church and state to the community lies at the heart of modern theories of social pluralism and civic republicanism” (Witte 1996, 400).

¹⁸⁰ Council of Chalcedon (451) canon vi, NPNF (Fulton and Schaff 1872, 178), cited by Calvin (1960, 1088).

¹⁸¹ Benefices, from the medieval Latin “beneficium” for “favor or promotion” referred to an ecclesiastical office to which the revenue from an endowment (generally land) is attached, which later was extended to signify a feudal state in

of power resulting from the practice of this Palpational Freedom, overseers became easy prey of innate selfish feelings; leading to a self-seeking use of their delegated powers in which the whole congregation was tyrannized. The struggle against the tyrannical means that Calvin condemned in the Papacy formed the core of his fight to disown this form of organization of the church as non-conforming to Scriptures and to the practice of the early church. In this opposition is found the argument to repeal encroachments of the Papacy and the means to preserve the freedom of the church.

In Calvin's views, the Freedom Christ bestows upon believers is the greatest good that they are called to preserve from both the wars fought within and without. The inner battle refers to the continuous attack from fleshly lusts and fears, while the outer struggle alludes to attempts by factions of the church or society to tyrannize and reduce the Christian Freedom to slavery.¹⁸² According to the palpational understanding of the Christian Freedom, the obedience owed to God's magistrates finds its limit in the restraint that God's calling imposes on them to make use of their gift to rule for the good of the people. This obedience also demands the active vigilance of all believers whenever rulers unjustly impose decrees contravening the Lord's supreme moral law. This forms the basis of Peter's exhortation: "fear God, honor the king" (1 Peter 2:17). As Calvin teaches in his *Commentaries on the Book of Daniel*, "the two commandments are connected together, and cannot be separated from one another. The fear of God ought to precede, that kings may obtain their authority. For if any one begins his reverence of any earthly prince by rejecting that of God, he will act preposterously, since this is a complete perversion of the order

land (*Merriam Webster's Collegiate Dictionary*, 11th edition). Collation was the bestowal of a benefice by a bishop or pope who held the right of collation, a right increasingly claimed by popes during and after the Avignon period (1309-1377) (footnote *Institute* editors, p. 1090). Simony from the Latin "Simonia" is the act of buying or selling a church office or ecclesiastical preferment. The name for this action was coined after Simon Magus, the Samaritan sorcerer who thought that he could purchase God's Gift of the Holy Spirit with money (Acts 8:9-24).

¹⁸² This is the importance that the apostles Paul and Peter assign to the defense of this costly Palpational Freedom, when declaring, "[y]ou were bought with a price; do not become slaves of men" (1 Corinthians 7:23); for as Peter adjuncts, "[w]e must obey God rather than men" (Acts 5:29).

of nature” (Calvin 1948, 382). Thus, Calvin concludes that “such obedience is never to lead us away from obedience to him, to whose will the desires of all kings ought to be subject, to whose decrees all their commands ought to yield, to whose majesty their scepters ought to be submitted” (Calvin 1960, 1520).

Calvin underscores that it is in Christ’s Law of Liberty that the actions of rulers find their ultimate legitimacy. Out of this strict limit, the authority of any ruler is to be resisted, or at least ignored. According to Calvin, there is no disobedience to God, or to rulers serving in His calling, when resisting acts that contravene the fear due only to Him.¹⁸³ In his *Commentary on the Book of Daniel*, Calvin affirms that since “Daniel could not obey the king’s edict without denying God, ...he did not transgress against the king by constantly persevering in the exercise of piety to which he had been accustomed, and by calling on his God three times a-day” (Calvin 1948, 382). Based on Daniel’s unwavering obedience to God, Calvin observes that “earthly princes lay aside all their power when they rise up against God, and are unworthy of being reckoned in the number of mankind. We ought rather utterly to defy than to obey them whenever they are so restive and wish to spoil God of His rights, and as it were, to seize upon His throne and draw Him down from heaven” (Calvin 1948, 382). In words that summarize the central importance Calvin seems to give to the palpation understanding of Christian Freedom for the consolidation and sustainment of a free society and republic, he observes that “the King of Kings, who, when He has opened His sacred mouth, must alone be heard, before all and above all men; next to Him we are subject to those men who are in authority over us, but only in Him. If they command anything against Him, let it go unesteemed” (Calvin 1960, 1520).

¹⁸³ This is recognized in the words of Daniel, when saying to King Darius the Mede: “My God sent His angel and shut the lions’ mouths and they have not harmed me, inasmuch as I was found innocent before Him; and also toward you, O king, I have committed no crime” (Daniel 6: 22-23).

In brief, the collective manifestations of the decision-making process that result from the Sublime Palpation of Christian Freedom seem to equip believers for building stable political institutions, and for preserving their civic freedoms against the tyrannical tendencies of ecclesiastic overseers and political rulers.¹⁸⁴ The mirroring of this training into the realm of civil institutions tends to make individuals prone to support smaller, decentralized, and accountable governments under the offices of overseers popularly elected. As the church is under the headship of Christ, which is manifested in the election of overseers by the members of the congregation, the same form of organization is extended to other forms of civic government. This seems to result in horizontal forms of social and political institutions that consecrate means to preserve individual and collective freedoms characteristic of the organization of the Reformed Free Church. As examined next, this seems also pivotal for the consolidation of preferences for a legal and judicial system designed to better protect against the overpowering encroaches both of government and other forms of social and political organizations. The efficacy of these civic institutions to preserve individual and collective liberties seems associated with preferences that form the collective manifestations of the decision-making process that results from the Sublime Palpation of Christian Freedom.¹⁸⁵ This constitutes the individual-level relationship that the present dissertation proposes as explanation for the macro-level evidence detailed in chapter 1, which demonstrated the associ-

¹⁸⁴ Witte affirms that perhaps the most important contributions of Calvin's notion of Christian Freedom were the assimilation of the rule of law, democratic process, and respect for liberty within the church. From Witte's perspective, Calvin devised "laws that defined the church's doctrines and disciplinary standards, the rights and duties of their officers and parishioners, the procedures for legislation and adjudication." As a result of the intense ecclesiastical exercise of the rule of law, "the church was thereby protected from the intrusions of state law and sinful vicissitudes of their members." Witte emphasizes the respect that Calvin urged for the democratic process within the church: "pastors, elders, teachers, and deacons were to be elected to their offices by the congregation." Regarding the respect for liberty within the church, Witte stresses Calvin's view that "Christian believers were to be free to enter and leave the church, free to partake of the church without fear of bodily coercion and persecution, free to assemble, worship, pray, and partake of the sacraments without fear of political reprisal, free to elect their ministers, elders, deacons, and teachers, free to debate and deliberate matters of faith and discipline, free to pursue discretionary matters of faith, the adiaphora, without undue laws and structures" (Witte 1996, 401).

¹⁸⁵ Witte holds that Calvin's genius is manifested in the integration of cardinal principles within the church: "the rule of law prevented the democratic principle from promoting a faith swayed by fleeting fashions and public opinions. Individual liberty kept both corporate rule and democratic principles from tyrannizing ecclesiastical minorities. Together, these principles allowed the church to strike a unique perpetual balance between law and liberty, structure and spirit, order and innovation, dogma and adiaphora" (Witte 1996, 402).

ation between a “sense of freedom” and higher levels of subjective well-being and socio-economic development characteristic of nations of Protestant inheritance.

4.3.1.3 Preferences for Checks and Balances of Powers

Calvin maintains that to avoid tyranny, Scriptures have ordained that the power the church entrusted to overseers be responsibly exercised under its supremacy and limits. Scriptures define three main powers of church overseers, subsumed under the specific limits established by the Principle of Christian Freedom. These are the powers that Calvin identifies as “either in doctrine or in jurisdiction or in making laws” (Calvin 1960, 1149). Calvin states that “whatever authority and dignity the Spirit and Scripture accords to either priests or prophets, or apostles, or successors of apostles, it is wholly given not to the men personally, but to the ministry to which they have been appointed.” Hence, the understanding of the church’s power renders it “not infinite but subject to the Lord’s Word” (Calvin 1960, 1150, 1152).

4.3.1.3.1 Limits on Doctrinaire Powers

A first important limit to the use of church powers comprises the constraints of elders to contravene, or make additions, to the pure doctrine of Scriptures. The truth found in Christ’s teachings defines the main nature of the church’s pure doctrine in which its powers finds the most specific limits.¹⁸⁶ In this sense, Calvin also acknowledges that “faithful ministers are now not permitted to coin any new doctrine, but that they are simply to cleave to that doctrine to which God has subjected all men without exception.” For as he says later, “God deprives men of the capacity to put forth new doctrine in order that he alone may be our schoolmaster” (Calvin 1960, 1157-1158). Thus, no overseer, either individually or collectively, can abrogate the power or authority to produce new doctrine, but only to teach the Word as it has been fully revealed and

¹⁸⁶ The apostle Paul openly acknowledged these limits even in the case of his high apostolic calling, when saying to the Corinthians, “Not that we lord it over your faith, but are workers with you for your joy” (2 Corinthians 1:23-24).

sealed in Christ. This seems the basis of the form of palpational understanding necessary for the formation of preferences for limited ecclesiastic and civic powers.

A second important institutional preference concerns the distinctive attribute of the Free Church to reject the dogma of infallibility. This preference determines a vigilant attitude of believers expressed against the tyrannical and abusive abrogation of overseers regarding the interpretation of Scriptures.¹⁸⁷ Calvin alerts that “the truth is not always nurtured in the bosom of the pastors, and the wholeness of the church does not depend upon their condition” (Calvin 1960, 1169). Hence, the understanding of the believers’ freedom in the core of the Free Church makes them the most attentive of the abuses of power from within, which as history teaches, have often resulted among congregations where the common duty to preserve the purity of doctrine has been disregarded.

Equally essential for the preservation of freedom in the midst of the polity, Calvin underscores the responsibility that Scriptures assign to each believer to test all interpretations and doctrines emanating from the church’s overseers. This aims to ensure they accord with the measuring rod of Christ’s Word.¹⁸⁸ Calvin urges the same awareness whenever a council issues a decree; asking each one to scrutinize its timing, content, intention, and authorship, but most importantly “to examine by the standard of Scripture what it dealt with—and to do this in such a way that the definition of the council may have its weight and be like a provisional judgment” (Calvin 1960, 1171). In this regard, Calvin affirms that the ultimate source of legitimacy of every decree or action of the church’s authorities rest solely in God’s Word. Concerning the authority of every council, pastor, bishop or overseer, Calvin states that none “can prevent our being taught by the

¹⁸⁷ This is the sense in which Christ warns believers to “[b]eware of the false prophets, who come to you in sheep’s clothing, but inwardly are ravenous wolves” (Matthew 7:15). Accordingly, the apostle warns to remain attentive to false pastors, when commanding to “be on guard for yourselves and for all the flock, among which the Holy Spirit has made you overseers, to shepherd the church of God which He purchased with His own blood” (Acts 20:28-30).

¹⁸⁸ This is found in the exhortation of the apostle John, when saying, “do not believe every spirit, but test the spirits to see whether they are from God, because many false prophets have gone out into the world” (1 John 4:1).

evidence of words and things to test all spirits of all men by the standard of God's Word in order to determine whether or not they are from God" (Calvin 1960, 1176).

Once the renewed preference to guard from the inception of false doctrines is translated into the social and civic arena, it seems to manifest itself in the form of a responsible and homogeneous citizenry that holds accountable the use of power according to its constitution. As a result of this first limit concerning the use of delegated power in the core of the church, an important institutional preference can be mirrored into the realm of civic government, by which citizens become vigilant about any act of power contravening the letter or spirit of their supreme civil law. In this fashion, the same palpational understanding that defines the limits of the church's powers can be civically reflected in the preference of citizens for the supremacy of the constitution as both the source and limit of any governmental power. Thus, the collective manifestation of this preference for the supremacy reserved to the Word of the Lord, as the shield of the church's freedom, appears to have critical institutional consequences when extrapolated to the civil constitution concerning the government of the civil society.

4.3.1.3.2 Limits on Constitutional Powers

The observance of any ecclesiastic constitution seems spontaneously upheld when it mirrors the fundamental principles asserting human freedom, which point toward reflections of the palpational understanding of Christian Freedom within the Free Church. In this context, the Sublime Palpation of Christian Freedom appears to fulfill a critical role as one of the most important limits to the powers of rulers both within and outside the confines of the church. Neither an ecclesiastic nor a civil law can bind the conscience of those who Christ has set free.¹⁸⁹ This form of free conscience constitutes for Calvin "the awareness of divine judgment"; and, a spark of light

¹⁸⁹ This is the sense in which the apostle acknowledges that "there is no authority except from God, and those which exist are established by God" (Romans 13:1).

“higher than all human judgments” (Calvin 1960, 1181, 1183). Consequently, Calvin holds that in this form of sublime liberty all renewed individuals should acknowledge “one King, their deliverer Christ, and should be governed by one law of freedom, the holy Word of the Gospel, if they would retain the grace which they once obtained in Christ” (Calvin 1960, 1180).

Contrarily to any theocratic interpretation that could misguidedly arise from these remarks, Calvin opposes, as perilous and seditious, the view of those who defend the establishment of a theocracy as a model of civil government. In this sense, Calvin notes that “there are some who deny that a commonwealth is duly framed which neglects the political system of Moses, and is ruled by the common law of nations. Let other men consider how perilous and seditious this notion is; it will be enough for me to have proved it false and foolish” (Calvin 1960, 1502). Rather, Calvin emphasizes only the superior criterion of the Sublime Image’s palpation to establish laws better equipped to defend and preserve individual liberties and the freedom of the church. As he reminds, “it is a fact that the law of God which we call the moral law is nothing else than a testimony of natural law and of that conscience which God has engraved upon the minds of men. Consequently, the entire scheme of this equity of which we are now speaking has been prescribed in it. Hence, this equity alone must be the goal and rule and limit of all laws” (Calvin 1960, 1504). Calvin underscores that all human law has its outmost source of legitimacy and firmest support in this criterion for the preservation of the Palpational Freedom, although such a rule may be expressed by a variety of positive laws, even differing from the specific regulations of the Law of Moses. Hence, Calvin concludes that “whatever laws shall be framed to that rule, directed to that goal, bound to that limit, there is no reason why we should disapprove of them, howsoever they may differ from the Jewish law, or among themselves” (Calvin 1960, 1504).

According to its supra-somatic marking effect over the slavery of innate passions, the palpation of the Sublime Image constitutes one of the highest criteria to assess the conformity of

ecclesiastic constitutions to the statuses of the Lord's Word. Calvin sees in the knowledge of Christ as the personification of God's love for the human race the means to achieve the goodness of life: "we should have in His will the perfect rule of all righteousness and holiness, and thus in knowing Him possess the perfect knowledge of the good life." God requires nothing in exchange for this Sublime Love other than obedience, for as Calvin asserts, He alone "has authority over our souls, Him we ought to obey, and upon His will we ought to wait." In this Sublime Palpation of the unique Image of God's Love, Calvin affirms the power of the renewed mind to "be able with ease to distinguish what human constitutions are contrary to the Lord's Word" (Calvin 1960, 1185-1186). Thus, through the supra-somatic effect distinctive of the Sublime Palpation, individuals are able to ponder the conformity of any ecclesiastical constitution to the norm of Scriptures, for only this palpation provides the marking effect and the actualization of the cognitive capabilities necessary for optimally making this complex type of decision.

The hierarchy the Sublime Image has among all criteria of valuation renders ecclesiastic constitutions as mere means not ends in themselves. Constitutions serve only as tools to order the church according to the command received through the apostle that in its midst "all things must be done properly and in an orderly manner" (1 Corinthians 14:40). This palpational understanding that the Free Church foment on ecclesiastic constitutional order is of great importance when extrapolated to the civic life. It recognizes the importance that constitutions have only as ordering means in the context of the polity, according to the highest criterion of the Sublime Image for evaluating their efficacy and legitimacy in the preservation of individual and collective freedoms. The unique attribute that the palpation of the Sublime Image has as standard in evaluating this supreme legitimacy seems to be an emblematic feature of Calvin's view, for as he concludes, "I approve only those human constitutions which are founded upon God's authority drawn from Scripture, and, therefore, wholly divine" (Calvin 1960, 1207).

The constant disposition acquired in the bosom of the Free Church to test all ecclesiastical constitutions according to this criterion of legitimacy appears to contribute to the sanctioning of political constitutions better equipped to preserve individual, social and political freedoms.¹⁹⁰ In this manner, through the function that the church performs as a School of Freedom, citizens consolidate a form of legitimacy that binds and limits the powers of authority in the civil constitution as well. These constraints transcend the mere formal requirements imposed on a positive legal system to guarantee the legitimacy of constitutions as established according to the procedure for their adoption. Rather, it seems to affirm a substantial criterion for upholding the legitimacy of the constitutional text according to the consecration and preservation of the most indispensable manifestations of individual and collective liberties. This is perhaps one of the most important civil extensions of processes resulting from the Sublime Palpation of Christian Freedom that individuals manifest within the Reformed Free Church. As described next, the recognition of a free nature equally manifested among all members of the human race, the guarantees to the right of life and integrity, free expression of ideas, election of authorities, and due process constitute equally important collective manifestations of the liberating effect that the Palpation of Christian Freedom seems to generate within the Reformed Free Church.

4.3.2 *The Free Church as School of Palpational Justice*

The collective and restrained administration of jurisdictional powers as a means to preserve individual and collective freedoms relies on a notion of Palpational Justice that underlies the liberating effect of the Sublime Palpation. The importance accorded to the notion of Palpational Justice within the Protestant Ethic of Development originates from Augustine's views, which contrast with the classical notion of justice distinctive of the Greco-Roman tradition. This

¹⁹⁰ In this regard, Walter Köhler considers Calvin as the "pioneer of the freedom of conscience and human rights" that were granted constitutional ranking after the French Revolution (Köhler 1904, 579).

palpational understanding of justice further influenced the limits that Calvin devised for the administration of jurisdictional powers within the church and the polity. The Free Church fulfills its essential role as a School of Palpational Justice through the collective manifestation of indispensable civic preferences of its members for the edification of a commonwealth aimed to guarantee the preservation of individual and collective freedoms. The present dissertation suggests that these preferences also contribute to the increased levels of prosperity and well-being characteristic of nations of Protestant inheritance, according to the macro-level empirical evidence presented in chapter 1.

4.3.2.1 The Notion of Palpational Justice

The concept of justice characteristic of the Greco-Roman tradition appears unattainable from the perspective of Palpational Rationality without the liberating effect of the Sublime Palpation of Christian Freedom. In general terms, the Greco-Roman notion of justice was summarized by the prominent Roman jurist Domitius Ulpianus (c. AD 170- AD 228), who defined it as “*constans et perpetua voluntas ius suum cuique tribuendi*,” or the “constant and perpetual will to give what is due to each one.”¹⁹¹ The pioneering view of Augustine presented in this dissertation’s concept of Palpational Justice refers to his recognition that justice is an unattainable state for a mind and will that remain enslaved to innate selfish feelings. Augustine recognizes the relevance that Palpational Rationality assigns to the supra-somatic effect of the Sublime Palpation as the only means able to overcome the enslaving effect of innate feelings. In this context, the notion of Palpational Justice refers to the liberating effect of the Sublime Palpation from innate selfish feelings through which the mind and will are renewed to give what is due to each.

¹⁹¹ This classical definition of Justice by the Roman jurist and official Domitius Ulpianus appears in the *Digesta*, or *Pandectae* 1.1.10, published in AD 533 as the second section of the larger compilation of civil law ordered by the Byzantine emperor Justinian I (483-565), also known as *Corpus Juris Civilis* or body of civil law (Krueger et al. 1954).

Augustine affirms this palpational understanding of justice when explaining that without the right service to God there is no practice of justice, in whose absence no republic can exist. Augustine asserts that “where there is not this righteousness whereby the one supreme God rules the obedient city according to His grace, so that it sacrifices to none but to Him, and whereby, in all the citizens of this obedient city, the soul consequently rules the body and reason the vices in the rightful order, so that, as the individual just man, so also the community and people of the just, live by faith, which works by love, that love whereby man loves God as He ought to be loved, and his neighbor as himself—there, I say, there is not an assemblage associated by a common acknowledgment of right, and by a community of interests. But if there is not this, there is not a people, if our definition be true, and therefore there is no republic; for where there is no people there can be no republic” (Augustine 1950, 706).

In the absence of this palpational notion of justice the virtuous form of justice the Romans fervently sought to consecrate in their highest laws appears, according to Augustine, merely illusory. In fact, Augustine affirms that the virtues which such a mind may seem to possess by which “it restrains the body and the vices that it may obtain and keep what it desires, are rather vices than virtues so long as there is no reference to God in the matter. For although some suppose that virtues which have a reference only to themselves, and are desired only on their own account, are yet true and genuine virtues, the fact is that even then they are inflated with pride, and are therefore to be reckoned vices rather than virtues.” Manifesting the palpational form of understanding resulting from Christian Freedom, Augustine affirms: “that which gives life to the flesh is not derived from the flesh, but is above it, so that which gives blessed life to man is not derived from man, but is something above him; and what I say of man is true of every celestial power and virtue whatsoever” (Augustine 1950, 707). The true mark of this righteousness suggests the liberation from sin that Christ performs, and not the perfecting of virtues that are inflat-

ed by pride, for when the apostle says “GOD IS OPPOSED TO THE PROUD, BUT GIVES GRACE TO THE HUMBLE” (James 4:6), Augustine adjuncts that in this consists the righteousness of an individual: “that he submit himself to God, his body to his soul, and his vices, even when they rebel, to his reason, which either defeats or at least resists them; and also that he beg from God grace to do his duty, [“*Gratia meritorum*”] and the pardon of his sins, and that he render to God thanks for all the blessings he receives” (Augustine 1950, 708).

In this context, Augustine expresses the seminal understanding of what this dissertation calls Palpatational Rationality, regarding the liberating effects of the Sublime Image’s palpation on decision-making processes and on the formation of institutional preferences indispensable for development. The individual who is freed from the enslaving influence of innate feelings seems to have the renewed mind through which justice is truly exercised. In this mindset, the right of others can be spontaneously acknowledged and, in consequence, the prosperity of the people (“*Rem Populi*”) can be fully realized. Augustine boldly states that “it is when the soul serves God that it exercises a right control over the body; and in the soul itself the reason must be subjected to God if it is to govern as it ought the passions and other vices. Hence, when a man does not serve God, what justice can we ascribe to him, since in this case his soul cannot exercise a just control over the body, nor his reason over his vices? And if there is no justice in such an individual, certainly there can be none in a community composed by those persons. Here, therefore, there is not that common acknowledgement of right which makes an assemblage of men a people whose affairs we call a republic” (Augustine 1950, 700). In consequence, without the liberating effect that the Sublime Palpation of Christian Freedom seems to produce on the slavery of innate feelings, the human mind appears to lack the disposition to constantly and spontaneously acknowledge the rights of others; without this mindset, there seems to be no foundation for the development and sustainment of a republic.

4.3.2.2 Palpational Justice and the Essence of a Republic

The common acknowledgement of the rights of others is one of the most important collective manifestations of the decision-making process that results from the liberating effect of the Sublime Palpation of Christian Freedom. In Augustine's view, the realization of the concept of a republic as elaborated by Cicero is only possible through the practice of what this dissertation calls Palpational Justice. Indeed, in *De Republica*, Cicero uses Scipio's definition of a republic as "the weal of the people for the people's weal" (Augustine 1950, 699). Deriving from the Latin "Rem Populi," the term "republic" refers to the condition of a sound, healthy or prosperous state; that is, the prosperity, happiness or welfare of a people. Augustine argues that "if this definition be true, there never was a Roman republic, for the people's weal was never attained among Romans." In his inquiry of the distinctive elements of the Roman state, Augustine finds the main deficiencies for the consolidation of a Roman republic in the absence of the true practice of justice. As Augustine points out, the notion of people within Cicero's definition refers to "an assemblage associated by a common acknowledgement of right and by a community of interests. And what he means by a common acknowledgement of right he explains at large, showing that a republic cannot be administered without justice. Where, therefore, there is no true justice there can be no right" (Augustine 1950, 699). Thus, the lack of true justice among Romans appears to have acted as the main impediment against consolidating this institution. Augustine observes that "if the republic is the weal of the people, and there is no people if it be not associated by a common acknowledgement of right, and if there is no right were there is no justice, then most certainly it follows that there is no republic where there is no justice" (Augustine 1950, 699). He considers this principle universally applicable to all nations seeking to establish a prosperous state in their midst, for as he concludes, "what I say of this people [the Romans] and of this republic I must be understood to think and say of the Athenians or any Greek state, of the Egyptians, of the early

Assyrian Babylon, and of every other nation, great or small, which had a public government” (Augustine 1950, 706).

There is an apparent weal and peace that the self-seeking virtues may be able to temporarily generate among certain peoples. Nevertheless, two elements pertaining to the liberating effect of the Sublime Palpation of Christian Freedom separate them from attaining the sustainable and permanent enjoyment of the collective well-being distinctive of a republic. First, they lack the supra-somatic marking effect that allows for justice to be exercised individually, which appears to be the main source for the determination and sustainability of the institutional framework on which a republic rests. Secondly, they lack the direct and mirroring effects that the Free Church can produce on the rest of society through the discharge of its essential role as a School of Palpational Justice. The supra-somatic marking effect allows for the individual exercise of justice necessary for the acknowledgment of right; an element that seems essential to developing and sustaining peaceful and prosperous institutions. The agential role of the church provides to individuals the ground in which to consolidate this constant and perpetual recognition of the rights of others. In the collective setting that the Reformed Free Church provides, they can be exercised in the optimal discharge of their civic responsibilities; becoming the source of institutional behaviors reflected in the civic preferences of the rest of the polity. Thus, without this liberating effect assigned to the Sublime Palpation of Christian Freedom it seems not possible to develop and sustain the institutional framework characteristic of a republic.

In sum, the spontaneous and constant practice of Palpational Justice, as civic preferences resulting from the Sublime Palpation of Christian Freedom, appears at the basis of the state of collective well-being characteristic of a republic. In this practice, the church attains the peaceful conditions in which its members “lead a tranquil and quiet life in all godliness and dignity” (1

Timothy 2:2).¹⁹² The republic may be the highest humanly attainable form of public government because it rests upon this constant and perpetual civic preference that seems possible only in a renewed mind. Through the liberating effect of the Sublime Palpation of Christian Freedom the practice of this form of justice can be consolidated among the congregation of the renewed, and the norm of their behavior can influence the formation of peaceful and prosperous civic preferences among the rest of the members of the societies in which they live.

4.3.2.3 Limits to Jurisdictional Powers

The practice of constraining jurisdictional powers constitutes an important source of institutional preferences collectively manifested within the Reformed Free Church. As in the case of the civil government, the jurisdictional function in the church refers to the administration of justice for the preservation of internal discipline. In this context, another collective manifestation of the decision-making process that results from the Sublime Palpation of Christian Freedom corresponds to the separation between ecclesiastic and civil jurisdictions according to its scriptural foundations.¹⁹³ The Reformed Free Church recognizes that the discharge of the jurisdictional function by the civil authority is above its own authority, and that it lacks, as an institution, any of the prerogatives and immunities characteristic of the civil government. In this regard, Calvin notes that the church's jurisdictional power differs from that of the civil magistrate in that "the church does not have the right of the sword to punish or compel, not the authority to force, not

¹⁹² This is the essence of the command the Lord has given to the church to "[s]eek the welfare of the city where I have sent you into exile, and pray to the LORD on its behalf; for in its welfare you will have welfare" (Jeremiah 29:7).

¹⁹³ The Lord clearly admonishes that "the Kings of the Gentiles lord it over them, and those who have authority over them are called 'Benefactors.'" But it is not this way with you" (Luke 22:25). For the lordship over subjects practiced among Gentiles that makes use of means of force is proscribed among believers, as the apostle Paul observes, when acknowledging that "the weapons of our warfare are not of the flesh, but divinely powerful for the destruction of fortresses" (2 Corinthians 10:4). Ergo, Scripture confines the power of the church to the spiritual essence of its ecclesiastical jurisdiction, from which it lacks the power to use force in order to protect the faith; this power corresponds instead to the civil jurisdiction and is reserved to the civil ruler.

imprisonment, nor the other punishments which the magistrate commonly inflicts” (Calvin 1960, 1215).

Pioneering the modern theory of checks and balances, Calvin defends the necessity of the collective discharge of the jurisdictional function within the government of the church and of the commonwealth. The preferences resulting from the decision-making process that is affected by the Sublime Palpation of Christian Freedom also are manifested in the execution of the jurisdictional function that believers perform within the Reformed Free church. The distinctive discharge of this jurisdictional function relies on the palpational understanding of Scriptures, which assigns to this function, even in the gravest case of excommunication, a shared duty fulfilled by the whole church.¹⁹⁴ In view of this, Calvin acknowledges that the jurisdictional power “applies to the discipline of excommunication which is entrusted to the whole church” (Calvin 1960, 1214). Hence, only collectively do the Scriptures entitle the church to separate from its midst those who have unrepentantly and recurrently disobeyed the Word.

Instead of having their trust set in the delegated power given to the church to bind or loose, Calvin holds that believers are called to set their trust solely in God’s grace, and in the promise to forgive their sins that God has revealed to them through His Son. Calvin states categorically that “absolution is conditional upon the sinner’s trust that God is merciful to him, provided he sincerely seeks expiation in Christ’s sacrifice and be satisfied with the grace offered him. ... The absolution that serves faith is nothing else than the testimony of a pardon taken from the freely given promise of the Gospel” (Calvin 1960, 649). Both believers and leaders of the church are called to rely on the dispensation and authority that can only be found through the palpation of the Sublime Image. The preferences formed as a result of the Sublime Palpation that gives supremacy to the

¹⁹⁴ This understanding derives from the Free Church’s interpretation of the maxim the Lord gave to the apostles when collectively committing them to the exercise of this fundamental power: “If you forgive the sins of any, their sins have been forgiven them; if you retain the sins of any, they have been retained” (John 20:23).

Law of Liberty in Christ render individuals most vigilant of any encroachment of human authority against their palpational freedom. At the same time, it seems to consolidate in them the respect for the rule of law with respect to those laws that do not contravene the essence of this supreme state of the mind and will.¹⁹⁵

The Sublime Palpation of Christian Freedom also seems to profit believers in the formation of key institutional preferences that result from the extrapolation of its liberating imprint on to the plane of civic behavior. It binds the use of power by leaders and it contributes to the development of a sense of guardianship among individuals that holds them accountable for the exercise of civil authority. In addition, by delineating the boundaries defining jurisdictional function, the Sublime Palpation seems to consolidate preferences for fair and due processes according to the guarantees contained in Scriptures.¹⁹⁶ These limits of the jurisdictional function that are collectively manifested at the core of the Reformed Free Church appear as critical to the believers' practice of fundamental checks and balances against tyrannical inclinations of their own overseers. Such preferences appear indispensable to preserve the most inalienable guarantees and freedoms both in the context of the ecclesiastical and civil discharge of jurisdictional functions.

The agential role that the Free Church seems to play in the consolidation of Palpational Justice also appears to contribute to the formation of preferences for a jurisdictional system that gives preeminence to members of the community acting like juries in the administration of justice. It tends to provide a clear understanding of the importance of this duty for the protection of individual and collective freedoms, as well as the significance of guaranteeing access to a fair and

¹⁹⁵ Witte affirms that perhaps one of the most important contributions of Calvin's notion of Christian Freedom was the assimilation of the rule of law. From Witte's perspective, Calvin devised "laws that defined the church's doctrines and disciplinary standards, the rights and duties of their officers and parishioners, the procedures for legislation and adjudication." As a result of the intense ecclesiastical exercise of the rule of law, "the church was thereby protected from the intrusions of state law and sinful vicissitudes of their members" (Witte 1996, 401).

¹⁹⁶ The individual guarantee of a due process within the exercise of the ecclesiastical jurisdiction is mainly found in the norm established by the Lord, when saying, "If your brother sins, go and show him his fault in private; if he listens to you, you have won your brother. But if he does not listen to you, take one or two more with you, so that BY THE MOUTH OF TWO OR THREE WITNESSES EVERY FACT MAY BE CONFIRMED. If he refuses to listen to them, tell it to the church" (Matthew 18: 15-18).

due process to all the members of the community. This consolidates an institutional preference for the collective use of power that emphasizes the role of collegiate bodies for the discharge of essential functions at all levels of ecclesiastic and civil governments. From the most confined authority of townships and School Counsels to the widest powers of a republic's Senate or Supreme Court, the collective manifestations of these processes and preferences seem to consolidate important societal skills for active and responsible participation in social and civic institutions.¹⁹⁷

4.3.3 *The Free Church as School of Palpational Altruism*

In the context of the commission to preach, teach and heal that seems central to the role the church plays in the provision of the poor,¹⁹⁸ individuals tend to collectively manifest essential outcomes of the decision-making process characteristic of the Sublime Palpation of Christian Freedom. In the consolidation of these preferences, the Reformed Free Church seems to fulfill its unique role as the School of Palpational Altruism. The palpational understanding of this altruistic function suggests a practice that in Calvin constitutes the mark of the renewed. Calvin reveals the universality of this function in the view that neither the condition of the needy as stranger, nor their provocations, unjust acts nor even their curses are sufficient reasons to refuse help. In this sense, he sanctions that “whatever man you meet who needs your aid, you have no reason to refuse to help him” (Calvin 1960, 696). Most importantly, Calvin emphasizes that the palpational nature of this form of altruism is only possible through the liberating effect of the Sublime Image, when acknowledging that “there is but one way in which to achieve what is not merely difficult but utterly against human nature: to love those who hate us, to repay their evil deeds with benefits, to return blessings for reproaches [Matthew 5:44]. It is that we remember not to consider

¹⁹⁷ As shown in chapter 1, there is empirical evidence of the positive effects that training within the church has on the formation of essential civic preferences (Brady, Verba, and Schlozman 1995; Jones-Correa and Leal 2001; Schlozman, Verba, and Brady 1995; Verba, Brady, and Schlozman 1995; Verba et al. 1993).

¹⁹⁸ Scriptures relates that “Jesus was going throughout all Galilee, teaching in their synagogues and proclaiming the Gospel of the kingdom, and healing every kind of disease and every kind of sickness among the people” (Matthew 4:23).

men's evil intention but to look upon *the image of God* in them, which cancels and effaces their transgressions, and with its beauty and dignity allures us to love and embrace them" (Calvin 1960, 697, italics added). Thus, the same liberating effect that allows for the practice of Palpational Justice, in recognizing the rights and possessions of others, seems further extended into the universal provision and defense of the fatherless, destitute and poor.

In Calvin's view, performing the duties of love requires an attitude of sincere disposition to love. This calls for each individual to be placed in the situation of the weak, and of their need for assistance, "and pity his ill fortune as if they themselves experienced and bore it, so that they may be impelled by a feeling of mercy and humaneness to go to his aid just as to their own" (Calvin 1960, 697). The palpational understanding of altruism involves for Calvin giving to the weak not out of duty or obligation, but out of love; for in giving and directing goodness toward them, Scripture commands not to think about what each deserve in themselves, but to look at the image of God which exists in everyone. According to Calvin, Scripture "teaches that we are not to consider that men merit of themselves but to look upon *the image of God* in all men, to which we owe all honor and love. However, it is among the members of the household of faith that his same image is more carefully to be noted [Galatians 6:10]" (Calvin 1960, 696, italics added). Thus, the image of God that is perceived through the Sublime Palpation of Christian Freedom can make familiar to the renewed the face of the hungry, thirsty, stranger, naked, sick and prisoner.¹⁹⁹

The understanding of this function of Palpational Altruism as universal to all believers appears to facilitate the efficient role that the Reformed Free Church performs in the spontaneous and informal distribution of resources. In addition to the volunteered skill of church members who aid the fulfillment of the church's agential roles, another important role of the Free Church

¹⁹⁹ In the aid the renewed give to anyone in need, it is the Lord Himself who says: "I was hungry, and you gave Me something to eat; I was thirsty, and you gave Me something to drink; I was a stranger, and you invited Me in; naked, and you clothed Me; I was sick, and you visited Me; I was in prison, and you came to Me" (Matthew 25:35).

as School of Altruism derives from the use of its patrimony.²⁰⁰ Calvin emphasizes that the sharing of tasks among members constitutes a support that “does not have anything gratuitous about it but, rather, to be a payment of that which, due by the law of nature, it would be monstrous to refuse” (Calvin 1960, 698). The liberating effect of Christian Freedom remains the core of this unique palpational understanding of Altruism, for as Calvin reminds, “each man will so consider with himself that in all his greatness he is a debtor to his neighbors, and that he ought in exercising kindness toward them to set no other limit than the end of his resources; these, as widely as they are extended, ought to have their limits set according to the rule of love” (Calvin 1960, 698). Therefore, Calvin concludes that “the lawful use of all benefits consists in a liberal and kindly sharing of them with others. No surer rule and no more valid exhortation to keep it could be devised than when we are taught that all the gifts we possess have been bestowed by God and entrusted to us on condition that they be distributed for our neighbors’ benefit” (Calvin 1960, 695).²⁰¹

In the same manner in which the Sublime Palpation of Christian Freedom seems to instill in social relationships the sense of Palpational Justice by which is given what is due to each, it also appears to engrave a superior sense by which individuals perceive what is due to God. The

²⁰⁰ In this context, tithing and other forms of giving developed within the church suggest collective manifestations of transformed preferences from the selfish natural propensity of individuals by which they are taught to provide for the needs of others (Brooks 2006).

²⁰¹ Based on the testimony of the church fathers, Calvin emphasizes the essential distributive role of the Free Church, which provides enough foundation to stress the view that the church’s patrimony belongs to the poor. Calvin evokes the example of Cyril, who in face of the famine in Jerusalem sold vessels and vestments, and spent the money to relieve the poor. In like manner, Calvin underscores the example of Acacius, bishop of Amida, who in succor of the Persians also facing famine melted the vessels to obtain food, proclaiming: “Our God needs neither plates nor cups, for he neither eats nor drinks.” The testimony of Exuperius, as mentioned by Ambrose, is of particular importance for Calvin’s argument. Exuperius is said to have “carried the Lord’s body in a wicker basket and his blood in a glass vessel, but suffered no poor man to hunger.” Finally, Calvin refers to the model of Ambrose, who, facing accusations by Arians for having broken the sacred vessels to ransom prisoners, memorably declared that “He who sent out the apostles without gold also gathered churches without gold. The church has gold not to keep but to pay out, and to relieve distress...the ornament of the sacraments is the ransom of the prisoners. ... Whatever, then, the church had was for the support of the needy” (Calvin 1960, 1075-1076). Given these considerations, Calvin notes that it is plainly found “in the decrees of the synods and in ancient writers that all that the church possesses, either in lands or in money, is the patrimony of the poor. And so this song is often sung there to bishops and deacons, that they should remember that they are not handling their own goods but those appointed for the need of the poor; and if in bad faith they suppress or waste them, they shall be guilty of blood” (Calvin 1960, 1074).

tithing in which the renewed give to God's body in the church the first fruits of all earthly blessings constitutes the essence of this form of Palpational Altruism. Consequently, Calvin observes that the Lord commanded the first fruits to be brought to Him, which testifies that it was unlawful to accept for any enjoyment of benefits not previously consecrated to Him, as observed in the commandment: "You shall bring the choice first fruits of your soil into the house of the LORD" (Exodus 23:19). Calvin asserts that "if the gifts of God are only thus sanctified to us when we have dedicated them by our hand to the Author Himself, that which does not savor of such dedication is clearly a corrupt abuse" (Calvin 1960, 696). Nevertheless, since human generosity cannot extend to God, the practice of this Palpational Altruism edifies His body, the church, in the fulfillment of its liberating agential roles. Thus, the palpational understanding of altruism by which the church seems able to fulfill its function to provide for the poor and the needy is in Calvin compared to holy sacrifices, so as to correspond now to those requirements of the law, according to the command not to "neglect doing good and sharing, for with such sacrifices God is pleased" (Hebrews 13:16).

Regarding the same order that characterizes the other agential roles of the Free Church, the function characteristic of deacons to care for the poor also shares this palpational nature. Calvin relies on Augustine's authority to affirm the example that in the early church the administration of the alms for the poor "was free and voluntary, since the bishops and deacons were faithful of their own free will, and integrity of conscience and innocence of life stood in place of laws" (Calvin 1960, 1074). Thus, the function of deacons to oversee the response of the church for the provision of the needy constitutes a distinctive element of the horizontal and non-hierarchical form of organization characteristic of the Reformed Free Church. As bishops did not have hierarchical authority over elders, they did not have authority over deacons regarding their oversight of the orderly collection and dispensation of alms for the poor. Thereby, Calvin concludes that "it

was not secular management that they were undertaking, but a spiritual function dedicated to God” (Calvin 1960, 1073).

The palpational notion of altruism that derives from the liberating effect of the Sublime Palpation is manifested in the love and compassion that removes from those actions any stigma. In the core of the church’s agential role as the School of Palpational Altruism, individuals become efficient agents of informal means of wealth distribution, providing an indispensable form of social safety net. This social assistance is discharged in the context of the sublime understanding of God’s love and compassion, which seems to remove both stigma and dependency traits commonly associated with aid given by governmental institutions. Consequently, the church is able to provide a much higher social return from its allocation of resources by fulfilling an essential role as informal means of wealth distribution with a lower level of moral hazard. In moral and economic terms, its intermediation as the School of Palpational Altruism contrasts with the allocation of resources deriving from governmental forms of wealth distribution.

The practice of Palpational Altruism directly and indirectly suggests the formation of institutional preferences necessary for a peaceful and prosperous society. In direct terms, the benefits from the call that each renewed member has to provide for the needy and poor extend beyond the congregation to all the members of the society. The universal fulfillment of this function does not distinguish among the poor because God’s sublime image is reflected in each of them. In this regard, the aid that church members freely volunteer to provide for the needs of the weak and poor also benefit the rest of society.²⁰²

In sum, the practice of Palpational Altruism, Justice, and Freedom constitute collective manifestations of the decision-making process that results from the Sublime Palpation of Chris-

²⁰² This is clearly acknowledged in the memorable words of the apostle James, when reminding that “[p]ure and undefiled religion in the sight of our God and Father is this: to visit orphans and widows in their distress, and to keep oneself unstained by the world” (James 1:27).

tian Freedom. They imply the supra-marking imprint that this palpation produces to mitigate or overcome one's enslavement to innate feelings and its distortions on processes of reasoning and decision making. According to the detailed study of Calvin's *Institutes*, this liberating effect seems to find broader basis in the Reformer's understanding of the belief of Christian Freedom than in the Doctrine of Predestination, as suggested by Weber. Calvin explicitly rejects any anxiety derived from Predestination as a factor determining substantial changes in the behavior of the renewed. In line with the basis of Palpational Rationality, Calvin points instead toward the inner transformations that result from perceiving the essence of Christ's redemptive ministry as revealed in the outcomes of self denial and bearing of one's cross. The innermost effect that the present dissertation attributes to the Sublime Palpation of Christian Freedom follows this vista, which provides the basis for its modifications to Weber's model of Economic Rationalism. It also informs the main aim of this dissertation to formulate a multidisciplinary decision-making model for economic and institutional development. In this context, the next chapter inserts in the modern Theory of Choice the notion of Palpational Rationality at the core of the Protestant Ethic of Development.

5 Alternative Decision-Making Model of Palpational Rationality

The decision-making model of Palpational Rationality detailed in this dissertation aims to integrate the theoretical perspectives of theology and philosophy with evidence drawn from physics, mathematics and statistics. It also seeks to incorporate the understandings of neurobiology, psychology, and sociology as they apply to decision-making processes characteristic of economics, public policy and political science. In this context, Palpational Rationality addresses questions that are normative in nature, as in the case of factors that affect the processes of reasoning and decision making, and descriptive, as the analyses of the effects of beliefs, feelings and preferences on such processes. The integration of this multidisciplinary approach appears as a promising undertaking for the advancement of the modern Theory of Choice, as it specifically influences levels of individual welfare commonly associated with social, institutional and economic development.

The assimilation of similar multidisciplinary approaches under the aegis of the Theory of Choice has opened the architectonics of decision making to deeper level of complexities beyond the scope of computational- and informational-based models. The three main factors that seem to add to these emerging complexities involve: the essential marking effect of feelings, the imprint of innate self-centered preferences on socio-cultural choices, and the impact that the perception of meta-somatic images have on decision making. The centrality of neural markers to the behavioral understanding of Choice Theory has re-introduced the critical influence that feelings can have on reasoning and decision making, as first identified by Hume in the *Treatise of Human Nature* and elucidated in the description provided in chapter 2. In this respect, Palpational Rationality endeavors to provide an integrative and comprehensive perspective of inquiry that joins socially adopted preferences to the essential effect that innate feelings seem to have on decision making. The model of Palpational Rationality expands the scope of the factors interacting in reasoning and

decision making by adding the liberating imprint of meta-somatic images that appear to play a decisive role in marking, ranking and selecting images. In this context of micro-level analysis, the model suggests an explanation for the empirical macro-level outcomes associated with the Protestant understanding of the “sense of freedom” highlighted in chapter 1.

Palpational Rationality adds to the Theory of Choice the crucial subjective dimension associated with the perception of meta-somatic images. It comprises the effect of the supra-somatic image of God’s Love as the liberating effect of Christ’s freedom on decision making and on the formation of preferences necessary for integral development. In this context, the decision-making model of Palpational Rationality offers an alternative to rational choice decision-making models, which have been currently used as a general basis for the design and implementation of public policy, as in the case of models developed to explain expected utility under risk and game theory (Bernoulli 1954; von Neumann and Morgenstern 2004). The model of Palpational Rationality aims to provide a more complete perspective of policy design and implementation by adding to rational choice models the behavioral exceptions to the assumption of strict rationality, and the central role emotions play in decision making. Based on its critiques and observations regarding Rational Choice and Prospect Theory Models, Palpational Rationality emphasizes the effect that the combination of this belief of Christian Freedom and the emotion of Sublime Palpation seem to have on decision making. More specifically, it underscores their effect in counteracting the distortion that basic emotions of pleasure and fear appear to have on the subjective perception of the value and probability of outcomes. According to the main objective of this dissertation, Palpational Rationality points toward a more practical framework for designing and implementing public policies, which aims to better describe complex choices faced by decision makers, particularly in the developing world.

5.1 *Critiques of Decision-Making Models of Choice Theory*

The rationalistic criterion that assigns predominance to conscious reasoning in decision making has been tested in a variety of behavioral experiments in the “Theory of Choice” since the time of Bentham (1748-1832).²⁰³ Nevertheless, the greatest development of Theory of Choice resulted from the ground breaking works of Pareto, Hicks and Allen.²⁰⁴ The core element of this theory is the maximization criterion that is used to rank and choose among alternative outcomes during the process of reasoning and decision making (Edwards 1954, 380-386). Its basic element corresponds to a function that assigns a value to different options weighted by the respective probabilities of their occurrence.²⁰⁵

Different considerations regarding the various forms of representing choices and probabilities within the respective value functions have determined criteria associated with the main manifestations of Rational Choice Theory. The first criterion corresponds to the purely objective representations of both outcomes and probabilities characteristic of “Expected Value Theory.” According to this criterion, the value of a prospect is derived from the objective consideration of the monetary value of each option weighted by the objective probability of its occurrence. In contrast, “Expected Utility Theory,” the second criterion within Rational Choice Theory, involves

²⁰³ The application of such a criterion has become distinctive of formal economic analysis as shown in the influential works of Jevons (1874; 1881; 1886), Walras (1874; 1984; 1993), Menger (1923; 1934; 1979), Marshall (1890), Samuelson (1947; 1951; 1953), and Edgeworth (1932; 1994; 1925).

²⁰⁴ Pareto was the first to abandon interpersonal comparability proper to the notion of cardinal utility, or utility measured on an interval scale (Pareto 1906). Hicks (1939) depurated Edgeworth’s indifference curves from any introspective elements by developing indifference curves that had no reference to the notion of ordinal utility (measured on an ordinal scale). This change in the notion of indifference curves established the ground for subsequent works like those of Samuelson, which derived consumer choice simply from observation, and made these choices expressible in simpler mathematical representation.

²⁰⁵ Pareto’s departure from cardinal utility opened the field of Theory of Choices to Welfare Economics and to the analysis of public policy. According to classical utility theorists, the best policy choice is one that results in the maximization of total utility summed over all the members of society. In contrast, Pareto’s Principle affirms that a choice is more desirable to every other alternative if it leaves all members of the society as well off as they were before, and made at least one person better off (Pareto 1906). Using this principle as his basis, Arrow advanced the development of social welfare functions that also integrate interpersonal comparable utilities (Arrow 1963). Nevertheless, the main limitation of these experimental procedures is manifested in the limits of applying information obtained from individual utilities to the design of large-scale economic policy (Edwards 1954, 389-390).

a subjective representation of the monetary value or “utility” related to each option of a prospect, while retaining an objective representation of its probabilities. Finally, the third criterion incorporates the purely subjective perception of the value of each option or outcome weighted by the subjective perception of the probability of its occurrence, as mainly defined by “Prospect Theory.”

5.1.1 *Model of Objective Value: Expected Value Maximization Theory*

The basic assumption of Expected Value Maximization Theory consists in the view that the valuation of risk is equal among individuals. In consequence, no subjective or psychological factor ought to be taken into consideration, but only the objective values or prices of the outcomes weighted by the also objective representations of their respective probabilities.²⁰⁶ The distinctive element of this criterion seems to be its purely objective scope, according to which “no characteristic of the persons themselves ought to be taken into consideration; only those matters should be weighed carefully that pertain to the terms of the risk” (Bernoulli 1954, 24). The nature of the expected value function is linear, which expresses the proportionality between gain in wealth and increases in values that are its most distinctive attributes. Figure 5 represents the function of changes in values with respect to changes in wealth for an individual at different levels of affluence.²⁰⁷

²⁰⁶ As the Dutch mathematician Daniel Bernoulli (1700-1782) underscored, the main property of this method rested on the assumption that “all gains must be evaluated exclusively in terms of themselves, i.e., on the basis of their intrinsic qualities, and that these gains will always produce a utility directly proportional to the gain” (Bernoulli 1954, 27).

²⁰⁷ The first level of affluence corresponds to the point B where the function intersects the x axis, and where the value that the individual objectively attributes to this original level of wealth is 0. The segment AB quantifies the productive capacity of each individual according to endowed talents. Besides this endowed productive capacity, the first level of the acquired individual’s affluence under consideration corresponds to the point of wealth C, which represents the level of wealth of a relatively poor person. Given the function’s perfect proportionality, the subjective value V_c that an individual perceives is equal to the monetary value of the outcome C. Likewise, the level of total wealth of point E corresponds to the objective value level of V_e proper of a relatively richer person. In this manner, the points of wealth B, C, and E map the points B, G and L in the linear function of value.

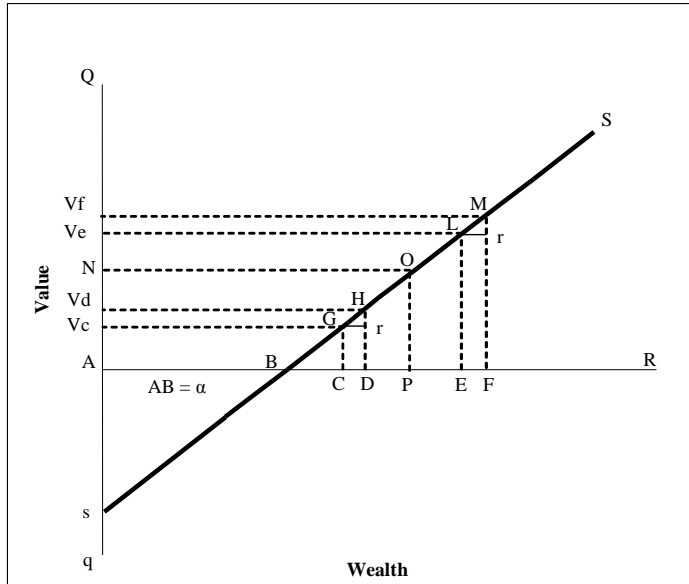


Figure 5. Expected Value Function
(Proportional Property from Bernoulli, 1954)

The function of expected value does not require distinction between total levels of wealth and marginal changes of value because its linear nature renders all increases in wealth proportional to their respective increases in value.²⁰⁸ The general formulation of this function assumes the point s to be the negative value that an individual derives from a level of wealth θ , which is below the point α of productive capacity.²⁰⁹ The expected value function can also be extended to

²⁰⁸ Indeed, the level of total wealth D corresponds to an r level of change with respect to C , which is equal to the r level of change represented by the total wealth F with respect to E . In this manner, the change of wealth r of the segment CD corresponds to the change of utility represented by the segment $VcVd$, while the change of wealth r represented by the segment EF corresponds to same change in value $VeVf$. Thus, at the core of the Expected Value criterion is the notion that there is an equal change in value that is determined by the same change in wealth when considering two different points of total wealth. Furthermore, the first level of absolute affluence under consideration, or AC , is equal to the innate productive capacity AB plus the increase of wealth above such capacity, or BC ; thus, If $AC = x$, then $CD = dx$. On the other hand, CG corresponds to the level of positive value Vc of the first level of wealth C , while DH corresponds to the level of positive utility Vd of the change in wealth from C to D . Accordingly, $CG = y$ is the total utility or value from A to C , and rH is the marginal utility perceived of the change from C to D .

²⁰⁹ If c is the constant value of 1 assigned to the slope of the function with perfect proportionality, then this function can be expressed in the following terms:

$$y = s + (c * x)$$

Equation 5-1. Expected Value Function

consider specific choices of different outcomes according to the probability of their occurrence.²¹⁰

In this regard, the purely objective representation of values and probabilities seems to be the most distinctive element of Expected Value Maximization Theory.²¹¹

Although extensively used in decision making, the Expected Value Criterion confronted two contradictory behavioral cases in which rational individuals consistently manifested different preferences than those predicted by the theory. These contradictory observable behaviors were first described by Bernoulli in the case of the willingness of individuals to purchase lotteries and insurances. These observations prompted Bernoulli to propose that instead of the “maximization of expected value,” individuals make use of a decision making criterion based on “expected utility maximization” (Bernoulli 1954).²¹² In brief, Expected Value Theory assumes the presence of a decision maker who faces no subjective distortion in the perception of the value of outcomes, and who exclusively perceives such value from a partial and relative monetary perspective.

5.1.2 Models of Quasi-Subjective Value: Expected Utility Maximization

According to Bernoulli’s formulation of Expected Utility Maximization “the value of an item must not be based on its price, but rather on the utility it yields” (Bernoulli 1954, 24). At the

²¹⁰ As Bernoulli reasons (1954, 27), if CG, DH, EL and FM designate the values corresponding to the gains of wealth BC, BD, BE and BF; and if m, n, p, q indicate the number of ways in which the gains in wealth can occur, then, the moral expectation of the risky proposition PO can be attained as follows:

$$PO = \frac{m * CG + n * DH + p * EL + q * FM + ...}{m + n + p + q + ...}$$

Equation 5-2. Moral Expectation of a Risky Proposition According to Expected Value Theory

²¹¹ The general formulation of this first objective-value theory orders different prospects through the summation of all the products of the value of each possible outcome x_i by the respective probabilities of their occurrence p_i , as Equation 5-3 shows.

$$OV = p_1x_1 + p_2x_2 + ... + p_nx_n \quad \text{or} \quad EV = \sum p_i * x_i \quad \text{where} \quad p_i = 1$$

Equation 5-3. Objective value: Expected Value Rule

²¹² In the case of lotteries, Bernoulli observed that a poor individual who has received a lottery ticket yielding with equal probability \$0 or \$20,000 will be willing to sell the ticket for \$9,000; a lower price than the expected value of the ticket ($50\% * \$0 + 50\% * \$20,000 = \$10,000$). Under the same circumstances, Bernoulli observed that a rich man will be ill-advised to refuse buying such a ticket. In this case, these preferences represent a violation of the criterion of expected value that assigns no difference to the subjective valuation of probability, and that solely relies on the objective value of gains and losses and their respective probabilities (Bernoulli 1954, 24).

core of Bernoulli's model is the introduction of the subjective notion of utility in place of the objective notion of price as measure of value; consequently, the original criterion of Price-value Maximization is transformed into Expected Utility Maximization. Although the Rule of Expected Utility constitutes an important heuristic means to isolate the risk present in different choices, Bernoulli warns that such a valuation strictly depends on circumstances purely pertinent to individual states.²¹³ Bernoulli's main contribution consists in the notion that people are generally averse to risk, and that this risk aversion usually decreases with increasing wealth. Instead of price, which depends only on the thing itself and is equal for everyone, Bernoulli suggests that the value of an item should be based on the utility that it yields, which is dependent on the particular circumstances of the person making the estimate. This is the rule that is subsumed in the basic criterion of Expected Utility Maximization, according to which "if the utility of each possible profit expectation is multiplied by the number of ways in which it can occur, and we then divide the sum of these products by the total number of possible cases, a mean utility [moral expectation] will be obtained, and the profit which corresponds to this utility will equal the value of the risk in question" (Bernoulli 1954, 24).²¹⁴

²¹³ As Bernoulli observes, "it becomes evident that no valid measurement of the value of a risk can be obtained without consideration being given to its utility, that is to say, the utility of whatever gain accrues to the individual or, conversely, how much profit is required to yield a given utility. However it hardly seems plausible to make any precise generalizations since the utility of an item may change with circumstances" (Bernoulli 1954, 24).

²¹⁴ The criterion of Expected Utility Maximization is erected on three main assumptions regarding the behavior of economic individuals as completely informed, infinitely sensitive, and consciously rational. Such individuals are said to know all the courses of action and their respective outcomes, to have available alternatives corresponding to continuous and differentiable functions, to organize and rank the different courses of action, and to decide on the one that results from a maximization criterion. This last rational attribute requires that the individuals may be able to first express differences between all possible alternatives, and that these preferences be transitive; that is, if they prefer A to B, and B to C, then they should prefer A to C. Second, it requires that the expression of such transitive preferences be attached to a maximization criterion that in the case of riskless choices corresponds to utility maximization (Edwards 1954, 381-382). In formal terms:

$$QV = p_1U(x_1) + p_2U(x_2) + \dots + p_nU(x_n) \quad \text{where } U(x) = \text{subjective value of } x, \text{ or}$$

$$QV = \sum_i p_i * U(x_i) \quad \text{where } p_i = 1.$$

Equation 5-4. Quasi-subjective value: Expected Utility Rule

5.1.2.1 Bernoulli's Version of the Expected Utility Criterion for Risky Choices

According to Bernoulli, one of the main circumstances that decisively affect the subjective perception of prospects is the individual's state of wealth. The state of poverty or of wealth affects the individual's willingness to partake in a prospect involving gains and losses. Moreover, this state of wealth also affects the subjective valuation or utility of prospects, for as Bernoulli observes, "a gain of one thousand ducats is more significant to a pauper than to a rich man though both gain the same amount" (Bernoulli 1954, 24). The proportion of the change of wealth with respect to the levels of total wealth has an important psychological effect on the perception of losses and gains.²¹⁵ Nevertheless, in line with the main argument of the present dissertation, Bernoulli asserts that freedom—in its physical manifestation—is the most important circumstance that substantially affects the subjective perception of probabilities and the value of outcomes.²¹⁶ Physical slavery distorts the perception of the value of outcomes, but such a distortion appears magnified in the case of the moral slavery that Hume properly identifies as characteristic of the unrenewed reason, as detailed in chapter 2.

The main foundation of Bernoulli's criterion of Expected Utility is the inverse relation between accumulated assets and marginal increases in wealth. The main empirical principle behind this criterion is subsumed in his maxim that "the utility resulting from any small increase in wealth will be inversely proportionate to the quantity of goods previously possessed" (Bernoulli 1954, 25). In its most basic form, Bernoulli proposes a criterion that is concerned "only with one individual (in different states of affluence)," which is important in order to isolate the differential effect that various levels of initial wealth have on the same wealth variation (Bernoulli 1954, 26).

²¹⁵ As Bernoulli asserts, "any increase in wealth, no matter how insignificant, will always result in an increase in utility which is inversely proportionate to the quantity of goods already possessed" (Bernoulli 1954, 25).

²¹⁶ Bernoulli observes that physical freedom affects the subjective valuation both of probabilities and outcomes more strongly than the total level of wealth of the individual. He argues that "though a poor man generally obtains more utility than does a rich man from an equal gain, it is nevertheless conceivable, for example, that a rich prisoner who possesses two thousand ducats but needs two thousand ducats more to repurchase his freedom, will place a higher value on a gain of two thousand ducats than does another man who has less money than he" (Bernoulli 1954, 25).

This main property derives from the general common wisdom that “the man who is emotionally less affected by a gain will support a loss with greater patience” (Bernoulli 1954, 26). As described in detail later, Bernoulli’s criterion already intuited the great relevance that specific feelings have as markers in decision making processes. In this context, the main liberating effect of the Sublime Palpation of the Christian Freedom corresponds to the correction of the enslaving effects that can be produced by innate feelings, a liberation that seems accomplished through the supra-somatic marking effect distinctive of the palpation of the Sublime Image of God’s love for the human race, as described in chapters 3 and 4.

5.1.2.1.1 Unique Attributes of Bernoulli’s Utility Function

One of the most distinctive attributes of Bernoulli’s approach may be his pioneering psychological treatment of the value of outcomes according to which individuals evaluate prospects not based on the expectation of their monetary outcomes, but on the expectation of their subjective value.²¹⁷ This attribute corresponds to Bernoulli’s explanation of the puzzling behavior of individuals who are generally averse to risk, and whose levels of risk aversion tend to decrease with increasing wealth. Figure 6 shows that the difference between the utilities that correspond to the change of wealth from *C* to *D* of an individual in a poor state of total wealth is greater than the utility difference corresponding to the changes of wealth from *E* to *F* of the same individual at comparatively higher total levels of affluence.²¹⁸

²¹⁷ The subjective value of an outcome refers to the distortion in the perception of its relative value expressed in monetary terms, which explains the unique shape of the utility curve as a concave function of wealth.

²¹⁸ Figure 6 represents the function of changes in utility with respect to changes in wealth for an individual at different levels of affluence. The first level of affluence at point of wealth *B* intersects the x axis of the function (where the level of utility of the individual is equal to 0). The segment *AB* refers to the quantification of the productive capacity of each individual, for as Bernoulli says, “nobody can be said to possess nothing at all...for the great majority the most valuable portion of their possessions so defined will consist in their productive capacity” (Bernoulli 1954, 25). Besides this original level of wealth comprising the endowed productive capacity, the first level of acquired individual affluence under consideration is point *C*, which here represents the relative poor state of wealth of the individual related to the level *G* of utility. Finally, the last level of total wealth under consideration is *E*, which represents the utility level *L* in the function of the same person but in a relatively richer state. In this manner, the points of wealth *B*, *C*, and *E* map the points *B*, *G* and *L* in the concave utility function.

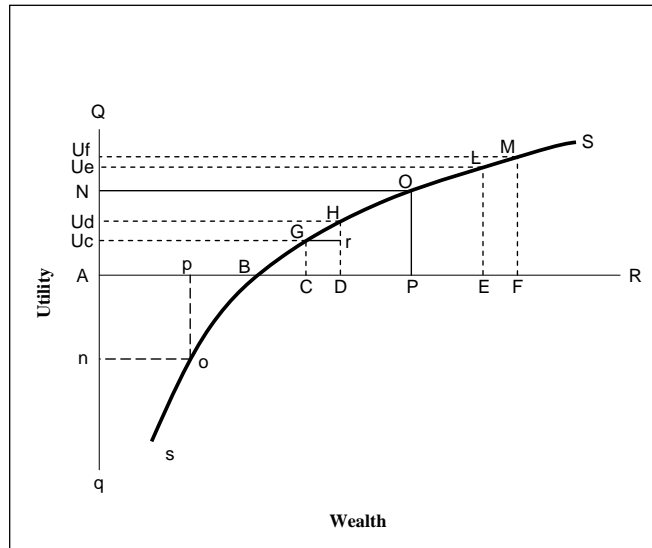


Figure 6. Bernoulli's Expected Utility Function
(Adapted from Bernoulli, 1954, figure p. 26)

Bernoulli combines both total levels of wealth and marginal changes of wealth to represent the change in utility that the latter has on the context of the former, according to the behavior of this concave function.²¹⁹ The changes of wealth corresponding to the respective levels of total affluence are associated with different changes in utility.²²⁰ Thereby, the main attribute of Bernoulli's principle consists in the different change in utility determined by the same change in wealth.²²¹ Consideration of the states of wealth seems essential to justifying the decreasing marginal utility of wealth of Bernoulli's function, as seen in the increasingly concave shape of his

²¹⁹ The point of wealth D corresponds to an r level of change with respect to the second level of affluence C. In like manner, the total point of wealth F refers to the same r level of change but with respect to the third level of affluence at point E. As Bernoulli observes, "If we draw Gr parallel to BR, then rH will represent the infinitesimally small gain in utility to a man whose fortune is AC and who obtains the small gain, CD. This utility, however, should be related not only to the tiny gain CD, to which it is, other things being equal, proportionate, but also to AC, the fortune previously owned to which it is inversely proportionate" (Bernoulli 1954, 27)

²²⁰ In this manner, the same change of wealth r of the segment CD corresponds to the change of utility $UcUd$, while the change of wealth r in EF results in the lesser change in utility $UeUf$.

²²¹ The level of change in wealth r is considered at two different points of total wealth: C, proper of a relatively low or poor level of affluence, and E, characteristic of a wealthier state. Bernoulli's model represents absolute gains or losses as the respective points of affluence levels that are respectively located to the right (C, D, P, E, F) or to the left (p) of the originally endowed productive capacity (x point intersect of B). It also represents the absolute positive and negative utilities respectively located on the y axis (Uc , Ud , N , Ue , Uf) above or below (A), the origin that corresponds to the y point intersect of B.

logarithmic function.²²² Finally, the distinctive concavity of the function also shows the prospect of losses for players in various games.²²³

5.1.2.1.2 Application of the Utility Function to Games of Chance and Insurance

Bernoulli applies the rule to calculate the value of a risky choice to the two main cases that presented contrary behavioral evidence against the rule of Expected Value Theory: games of chance and insurance. In the first case, Bernoulli considers a two-player game where both participants have the same probabilities to win, as in the case of bets on the flipping of a coin. This is a consequence of the concave shape of the function, which in this instance renders even an expected gain that is double the value of the stake having a disutility or negative utility that exceeds the positive utility. The effect of the proportionality between the total wealth of the player and the expected gain in determining the value of a risky proposition becomes even clearer when considering players with different levels of affluence.

The negative values of the risky proposition at different levels of affluence seem to confirm the common wisdom that it is irrational to bet any part of one's wealth, even the smallest portion of it, in a mathematically fair game of chance. As Bernoulli observes, "the imprudence of a gambler will be the greater the larger the part of his fortune which he exposes to a game of chance." This shows that the relative differences in proportions between previously possessed wealth and expected gains and losses appear to be important factors in the mitigation or magnifi-

²²² In order to show this, Bernoulli considers the first level of absolute affluence AC, which is equal to the innate productive capacity AB + BC, the increase of wealth above such capacity. If AC = x , then CD = dx . On the other hand, CG corresponds to the level of positive utility U_c that is proper of the first level of wealth C, while DH corresponds to the level of positive utility U_d of the change in wealth from C to D. Thus, if CG = y , and $rH = dy$, where the productive capacity AB = α , and if b designates a constant, then we have:

$$dy = \frac{b dx}{x} \text{ or } y = b \log \frac{x}{\alpha}$$

Equation 5-5. Bernoulli's Utility Function

²²³ As Bernoulli observes, "this follows from the concavity of curve sBS to BR . For in making the stake, Bp , equal to the expected gain, BP , it is clear that the disutility po which results from a loss will always exceed the expected gain in utility, PO " (Bernoulli 1954, 29).

cation of the value thought to derive from risky choices. The last scenario highlights Bernoulli's belief that "a man who risks his entire fortune acts like a simpleton, however great may be the possible gain" (Bernoulli 1954, 29). Finally, the other important case used by Bernoulli to illustrate his rule of risky choices involves insurance. The proportionality of expected gains and losses with respect to previously possessed wealth seems to confirm the other maxim of common wisdom according to which "it may be reasonable for some individuals to invest in a doubtful enterprise and yet unreasonable for others to do so" (Bernoulli 1954, 29).

5.1.2.2 Von Neumann and Morgenstern's Version of the Expected Utility Criterion for Risky Choices

The modern era of the Theory of Risky Choices started with the influential work of von Neumann and Morgenstern's "Theory of Games and Economic Behavior" (von Neumann and Morgenstern 1944, 2004). This work expanded Bernoulli's model by adding to the criterion of Expected Utility Maximization the ordering of probability combinations corresponding to the occurrence of events.²²⁴ Von Neumann and Morgenstern ascribe behavioral meaningfulness to the concept of expected utility, although many objections could still be brought to the use of such criterion for risky-choice decision making.²²⁵ The main objections to this model refer to the multiplication method used to combine probabilities and values, and to the additive method used to

²²⁴ As Edwards points out, the influential advances of von Neumann and Morgenstern consisted in providing a criterion for risky decision making according to which risky alternatives can be ordered and ranked based on desirability through the maximization of their respective expected utilities, just as riskless alternatives are ranked according to the maximization of their respective utilities (Edwards 1954, 392-393).

²²⁵ Friedman and Savage (1948) developed a function for the utility of income that integrated the observations of Bernoulli and von Neumann and Morgenstern. Friedman and Savage theorized that when confronting risky choices, low income individuals tend to use an expected utility maximization criterion describing a function in which utility rises with income in a convex shape from below a certain income (diminishing marginal utility), concave between that income and some larger income (increasing marginal utility), and convex for all higher incomes (diminishing marginal utility) (Friedman and Savage 1948, 295, 303). The modern development of this criterion has been generally accepted not only as the normative model par excellence of rational choice theory (Keeney and Raiffa 1976), but also as a widely descriptive model for decision making concerning different forms of economic behavior (Arrow 1971). Thus, the influence of this model has received, both from the normative and descriptive point of view, an acclaimed acceptance in the field of Rational Choice Theory as the criterion most generally followed by alleged rational decision makers (Savage 1954).

combine probability-value products. As examined later, this model of risky choices faces further critiques regarding the existence of positive and negative utilities, and even the feasibility of using the maximization of expected utility as a criterion for complex decision-making processes (Edwards 1954, 392-393).

5.1.2.2.1 Unique Formal Properties of the Utility Function

The quantitative model that von Neumann and Morgenstern proposed to analyze complex social phenomena looks mainly to the linear expression of utilities and the strategies employed in games. Regarding linearity, the authors depart from the representation of a never increasing or decreasing function of utilities (monotonic) proper of the indifference curves. Von Neumann and Morgenstern noticed that as in the case of any measurement, utilities must also be based on an immediate sensation that does not need further analysis, and that is perceived in the preference for one object, or aggregate of objects, against others (von Neumann and Morgenstern 2004, 16). The main objection that von Neumann and Morgenstern raise against indifference curves relates to the fact that it is conceivable to allow for cases where individuals are neither able to state which of two alternatives they prefer, nor that they are equally desirable. Hence, they conclude that if all preferences are not comparable, then the indifference curves do not exist, but if comparable at all, then a numerical utility can be devised (von Neumann and Morgenstern 2004, 19-20).²²⁶ As the authors convey, if this numerical representation of utilities exists, then the utility is a number up to a linear transformation instead of the monotonic ones represented through indifference curves (von Neumann and Morgenstern 2004, 25).

²²⁶ The essence of von Neumann and Morgenstern's quantitative notion of utility is inspired in the physical phenomenon of the formation of centers of gravity. Accordingly, they argue that utilities contain a "natural" operation that narrows the system of transformations present in the combination of two utilities with two given alternative probabilities. Equation 5-6 shows the centers of gravity u , v with the respective weights α , $1-\alpha$; or the combination of u , v with the alternative probabilities α , $1-\alpha$:

$$\alpha u + (1 - \alpha)v, \quad (0 < \alpha < 1)$$

Equation 5-6. Structure of the axiomatic treatment of numerical utilities

The criterion of Expected Utility Maximization at the basis of von Neumann and Morgenstern's principle of rational choice comprises four main assumptions: cancellation, transitivity, dominance and invariance. Cancellation refers to the elimination of any option that results in the same outcome because choices should be made only among options that yield different outcomes.²²⁷ The assumption of preference transitivity alludes to the susceptibility of each option to be assigned a value that is not dependant on the value of another option; a necessary and sufficient assumption for the representation of preferences by ordinary utility scales. Here, dominance refers to the core of the decision-making criterion, in which an option or image of factual knowledge that is better than another in one aspect, and at least as good in all other aspects, should be ranked first, and consequently chosen. Finally, invariance is the assumption that different reconstructions of the same factual images, or options, should always yield the same ranking and decision-making outcome.²²⁸ The assumptions of transitivity, dominance and variance are present in most of the models developed within the theory of risky choices.²²⁹ These general assumptions are based on the main axioms of the Expected Utility Criterion that von Neumann and Morgenstern developed in the context of their physics-inspired quantitative representation of subjective valuations (2004, 27-28).

5.1.2.2.2 Application of the Utility Function to Game Theory

Game theory is an extension of Expected Utility Maximization to choices that have a probability of occurrence not determinable or susceptible to generalization.²³⁰ Von Neumann and

²²⁷ As Tversky and Kahneman (1986, 252) point out, this assumption is present in von Neumann and Morgenstern's substitution axiom (1944), the extended sure-thing principle of Savage (1954), and the independence condition of Luce and Krantz (1971).

²²⁸ As Tversky and Kahneman observe (1986, 253), invariance refers to the preference between options that should be independent of their description, which is also treated as the principle of extensionality by Arrow (1982).

²²⁹ See for instance the models developed by Allais (1979), Fishburn (1983), Hagen (1979), Hansson (1975), Luce (1985) Machina (1982), and Quiggin (1982).

²³⁰ Although its origins are already discernable in the works of Borel (1953a; 1953b; 1953c), Game Theory was formally established in 1944 with the work of von Neumann and Morgenstern.

Morgenstern's criterion of decision making based on game strategies is an attempt of mathematization of social behavior in the same manner the authors considered that the science of physics was further advanced by the introduction of formal mathematical reasoning (von Neumann and Morgenstern 2004, 5). As such, game theory constitutes a reaction to the fundamental objection of the inapplicability of mathematics to the fields of economics and social sciences. The main objections referred to the psychological element, and the consequent difficulties of measurability attributed to the social sciences. Drawing from the development of mechanics in the seventeenth century and from the application of mathematics to physics, especially infinitesimal calculus, the authors proposed the development of a similar methodology of mathematical analysis that could be extended to the social sciences (2004, 3). At the basis of this approach is the assumption that the wealth and multiplicity of social phenomena, as well as the complexity of their structure, are at least equal to the elements that inform physics. The authors argued that social phenomena required the development of a new mathematical methodology capable of being used to quantitatively formulate the complexity of social phenomena, in the same manner in which infinitesimal calculus allowed for the quantitative formulation of mechanic physics (2004, 6).²³¹

The three main games of von Neumann and Morgenstern's theory are intended to describe in mathematical terms the complex behaviors of individuals in three primary levels of aggregation of social organizations. The first level corresponds to what they labeled a "Robinson Crusoe Economy," characterized by the control that one individual exercises on all economic variables, when facing an ordinary maximum problem only through the lens of the satisfaction of

²³¹ Game theory has a formulation equivalent to the geometrical-mathematical models characteristic of the physical sciences (von Neumann and Morgenstern 2004, 32). According to von Neumann and Morgenstern game strategy models constitute the solutions and standards of behavior that aim to uncover "the mathematically complete principles which define 'rational behavior' for the participants in a social economy, and to derive from them the general characteristics of that behavior" (2004, 31). As in the case of the models employed in the physical sciences, games are considered as theoretical constructs with a precise, exhaustive and parsimonious definition, susceptible to mathematical treatment that can be used to model economic activity (2004, 33). The authors argued that the procedures used in the mathematical theory of games gained in plausibility given their correspondence with principles of social organizations (2004, 43).

his economic needs.²³² The second form of social organization refers to a “Social Exchange Economy,” which describes the control that two or more individuals have on all economic variables in the context of pseudo-maximum problems.²³³ Finally, the third level of social aggregation corresponds to a “Competitive Economy,” in which the combinative complications of the problem are compounded with every increase in the number of players (2004, 13).

The mathematical principles that aim to define rational behavior for the participants in these three levels of social aggregations coincides with the three types of games comprised in von Neumann and Morgenstern’s theory. The Robinson Crusoe Economy is modeled according to the principles and structure of one-participant games, where the existence of only one player in control of all economic variables, and of a defined maximizable function of satisfactions of needs, guarantee the existence of an optimum choice attainable through Maximization Utility criteria (von Neumann and Morgenstern 2004, 31-33). The Social Exchange economy corresponds to the games played by two participants, which can be either zero-sum or non-zero-sum.²³⁴ In these cases, domination and transitivity are at the basis of ordering solutions to reach an optimum outcome manifested by the dominant option (2004, 38). The final type of games that corresponds to the most complex level of social interactions, or competitive economy, is modeled according to a three-player game, where only equilibrium strategies are possible rather than optimal.²³⁵

²³² The presence of only one individual whose actions do not affect or depend on the will of any other, makes this function fully maximizable (von Neumann and Morgenstern 2004, 10).

²³³ The presence of multiple functions makes it impossible to maximize them all at once; evidence against the possibility of materializing the goal of “the greatest possible good for the greatest possible number” (2004, 11-12).

²³⁴ The former are games where the sum of all payments is zero; containing some universally important traits of all games, and whose derived results form the basis of the general theory of games (2004, 34). Conversely, the non-zero-sum games involve two players where the sum of all payments is variable. This type of game resembles the conditions of bilateral monopolies, where the interdependence of two participants allows for variability in total utility (2004, 35).

²³⁵ One main feature of these games is the feasibility of having cooperation or combination of two players against the third (von Neumann and Morgenstern 2004, 35). Their other distinctive attribute is the absence of an optimum outcome related to a simple imputation because they rely on equilibria among solutions that involve sets of imputations (2004, 39). Solutions involving sets of imputations derive from the possible intransitivity that can take place in these games, which rules out the transitivity-dependant optimum solutions (2004, 38). According to the authors, this set of imputations agrees with the “standard of behavior” observed as the manner in which individuals adjust themselves to the social environment. They refer to the “established order of society” or “accepted standard behavior” that consists of not setting up one rigid system of apportionment, but rather a variety of alternatives; expressing some general principles

The mixed criterion of expected utility maximization developed by von Neumann and Morgenstern presented the original model proposed by Bernoulli but in a context of aspired higher levels of formality, drawing upon the processes of mathematization applied to the natural sciences. It shared the pretension of developing a formal criterion for decision making under risk applicable to all individuals whose fields of choice were ordered (Allais and Hagen 1979, 74). Based on the formal representation of the subjective valuation of outcomes or utilities, this criterion was then considered as suitable to positively describe and predict the norm of behavior of any individual. Resulting from objections to the generalization of human behavior, subsequent versions of this criterion have limited its scope of applicability to the behavior of only “rational individuals,” as well as its use as normative instead of positive or descriptive norm of behavior (Friedman and Savage 1948; Marschak 1950; Samuelson 1953).

5.1.2.3 Limits of the Expected Utility Criterion

In their attempts to apply mathematical constructs to the social sciences, von Neumann and Morgenstern cited the importance that the advent of infinitesimal calculus had for the development of mechanics; however, they seem to have overemphasized the relevance of mathematical reasoning within a vaster integrative method of analysis. Von Neumann and Morgenstern underscored the importance that calculus had for the development of mechanics, particularly in the case of Newton’s works on physics. Nevertheless, they appear to have disregarded the other essential dimensions of Newton’s integrative method of inquiry that lie at the basis of such advances, specifically concerning the notion of a first Agent of the universe’s finite chain of causation, as de-

but nevertheless differing among themselves in many particular respects (2004, 41). In the context of the games that aim to model such complex social interactions, this set of imputations refers to the strategies of the game, which groups the number of solutions dominant to all others within the same set (2004, 40-41).

tailed in chapter 3.²³⁶ If a new model for the study of the more complex phenomena of the social sciences is envisioned, then the richness distinctive of this multi-dimensional scope of inquiry should be embraced. Such a study may require the extension of this form of inquiry to encompass the input of other disciplines in the hope of further illumining the analysis of complex decision-making processes.

On the other hand, the mathematization of social and moral behavior proposed by von Neumann and Morgenstern appears to ignore other important dimensions underlying the great complexity implicit in social and moral decision making. This unique complexity not only comprises the nature of the choices and the manner in which they are presented to the individual, but also the social context in which such options need to be evaluated. Additionally, this inherent complexity includes other important considerations such as the innate preferences that affect the ordering and ranking of such alternatives; the set of adopted preferences characteristic of the cultural setting; and the traits of subjectivity or personal identity that seem also manifested during the process of decision making. Although each of these important dimensions can be quantified or modeled, the alternative proposed by von Neumann and Morgenstern appears to lack the higher level of integrative methodology required to address such complexities.²³⁷ Therefore, a dynamic model that identifies more precisely the specific motions affecting reasoning, decision making and implementation of outcomes may require an integrative method of inquiry that adds other substantial dimensions to the mathematical expression of the phenomena. This seems to include the enriching input provided by theology, philosophy, physics, neurobiology, psychology, sociol-

²³⁶ Chapter 3 discusses a richer manifestation of this integrative method as initiated with Luther's groundbreaking works that critiqued the Aristotelian cosmological system. This original effort was further expanded and deepened through the study of physics pioneered by Galileo, as well as other Reformed Christian Scientists. As discussed therein, the Scientific Revolution and the development of the modern sciences seem to coincide with the development of this integrative method of inquiry whose nature transcends the mere mathematization of physical phenomena

²³⁷ These deficiencies formed the limitations that they recognized in the static nature of their theory, in comparison with a more desirable dynamic approach because—as they openly recognized—“for the real dynamics which integrates the precise motions, usually far away from equilibria, a much deeper knowledge of these dynamic phenomena is required” (von Neumann and Morgenstern 2004, 45).

ogy, economics and political science. A method aiming to derive explanatory models on complex social decision-making processes without such a multidimensional scope appears to greatly constrain the veracity of its observations, as well as the validity of its axioms.

Von Neumann and Morgenstern's stated aim to find mathematically complete principles to define "rational behavior" within a competing economy seems compromised by the relativity of the notion of "standard of behavior" at the core of their "strategy-of-game equilibrium."²³⁸ Accordingly, the rules of behavior abstracted by game theory suggest the need to consider them in reference to the particular society from which they have been adopted.²³⁹ The relative nature of the theory's equilibria corresponding to the standards of a society at a certain point in time may not be reachable, even for the same society in another moment of its history because of dramatic shifts of behavior. This tends to make the previously preconceived principles of social purpose obsolete for the understanding of the new form of "rational" behavior of its members. The search for a model able to characterize the great complexity of social and moral rationality and decision making appears to require the use of an integrative method of inquiry able to provide a multidimensional analysis. Such a method seems not only better positioned to define the main factors involved in the processes of optimal decision making, but also in providing a dynamic perspective of an absolute standard of behavior not subject to cultural, geographic or historical relativity.

Expected Utility Theory relies on the assumption that rational decision makers weigh the utilities of outcomes by their probabilities. This assumption has been methodically undermined by behavioral experiments involving positive and negative prospects, which reveal instead the expression of individual preferences in manners that violate the central tenet of Expected Utility

²³⁸ Even when in equilibrium, the set of imputations corresponding to a society's "standard of behavior" always has a relative nature, as it necessarily concords with von Neumann and Morgenstern concept of "preconceived principles of social purpose" (von Neumann and Morgenstern 2004, 42).

²³⁹ These rules of behaviors are always constrained to the specific standards of behavior that inspire the strategies of games in a particular time of the society's history; magnifying the limits to the universality of such a theory.

Maximization.²⁴⁰ As Kahneman and Tversky have proposed, decisions made under risk can be viewed as a choice between prospects or gambles (Kahneman and Tversky 1979, 263). The main cases of violations of Expected Utility Theory correspond to both positive and negative types of prospects; that is, gambles that involve either gains or losses. In the case of positive prospects, the main two violations have been observed in what is known as the “certainty effect.”²⁴¹ In the case of negative prospects or gambles, the two main cases of Expected Utility Theory violations comprise the reflection²⁴² and isolation²⁴³ effects.

In sum, the observation of Edwards remains that among the main elements of rationality, the most dubious of all seem to refer to the ordering and ranking of preferences due to their implied transitivity; an assumption that appears to be empirically contradicted in several behavioral experiments (Edwards 1954, 403).²⁴⁴ The limited computational capabilities of the decision maker seem to interact with the complexity of task environments to produce “bounded rationality,” where actual decision behavior might not even approximate the behavior predicted by normative decision-making models (March 1978; Nelson and Winter 1982; Simon 1978). The main obser-

²⁴⁰ Different from the view of rational choice, which presumes the existence of a complete order of preferences, preference construction refers to those choices continuously formed or reshaped in the processes of decision making. These constructed preferences result from heuristic strategies that individuals use to rank and select among different factual images. As Slovic points out, these mental strategies show the main attribute of the process of decision making as a highly contingent form of information processing, sensitive to task complexity, time pressure, response mode, framing, reference points, and other contextual factors (Slovic 1995, 369).

²⁴¹ First noted by Maurice Allais in the context of the “Allais Paradox” (Allais 1953), the certainty effect refers to the overweighting of outcomes that individuals show for those considered certain over those that are merely probable; in other words, certainty is preferred to what is merely probable (Kahneman and Tversky 1979, 265). In like manner, the certainty effect is also manifested in gambles or prospects that involve probable versus possible gains, according to which individuals consistently show that in a situation where winning is possible but not probable, they tend to choose the prospects that offer the larger gains (Kahneman and Tversky 1979, 267; Maccrimmon and Larsson 1979).

²⁴² First noted by Markowitz (1952) and further explored by Williams (1966) and Fishburn (1979), the reflection effect refers to a reverse of signs of the outcomes from gains to losses, according to which risk aversion in the positive domain is accompanied by risk seeking in the negative domain (Kahneman and Tversky 1979, 268).

²⁴³ Regarding the isolation effect, Tversky (1972) has found that individuals tend to disregard components proper of choices and focus on the components that most distinguish them in order to simplify those choices. Therefore, in the case of prospects involving gains or losses, individuals express preferences that violate basic tenets of Expected Utility Theory. The instances of violations to this theory and the empirical observations from behavioral studies isolating descriptive mechanisms of decision making constitute the essence of the alternative method of decision making distinctive of Prospect Theory.

²⁴⁴ As Simon (1955) argues, in order to understand positive or descriptive decision behavior, research needs to focus on the perceptual, cognitive, and learning factors that cause human behavior to deviate from the predicted outcomes of normative criteria.

vation of Tversky and Kahneman appears to remain that a theory of rational decision making cannot provide an adequate description of choice behavior because invariance and dominance are normatively essential and descriptively invalid; consequently, imposing the requirement of separation between normative and descriptive models (Tversky and Kahneman 1986). There seems to be a need for more comprehensive descriptive models comprising higher integrative levels of inquiry able to add other important dimensions present in the complexity of reasoning, decision-making and executing processes. This different perspective may involve the descriptive analysis of those factors that influence innate and cultural preferences, constrain human computational capabilities, define the context and framing of options, and incorporate the integral dimension of the decision maker's subjectivity, identity, belief, and level of freedom.

5.1.3 *Models of Subjective Value: Maximization of Subjective Values and Probabilities*

The third branch of Choice Theory criteria comprises models of decision making that involve both the subjective distortion of the perception of an outcome's value and of its occurrence. This third branch was first established through Savage's inclusion of the notion of subjective probability, and Allais' critiques to the neo-Bernoullian model of Utility Maximization proposed by von Neumann and Morgenstern. However, the most prolific advances within these models of decision making seem to have resulted from the critiques that Kahneman and Tversky offer to the model of Expected Utility Maximization within Prospect Theory.²⁴⁵

²⁴⁵ The general formulation of the value function introduced by Bernoulli, which first represented the subjective distortion in the perception of an outcome's value, is complemented by the inclusion of the subjective distortion in the perception of the outcome's occurrence or probability, whose general formulation can be represented in the following terms:

$$SV = S(p_1)U(x_1) + S(p_2)U(x_2) + \dots + S(p_n)U(x_n)$$

where $S(p)$ = subjective value of p , and $U(x)$ = subjective value of x , or

$$SV = \sum_i S(p_i)U(x_i) \quad \text{where} \quad p_i = 1$$

Equation 5-7. Subjective value: Maximization of subjective value weighted by the outcome's probability

5.1.3.1 Allais' Model of Distribution and Dispersion of Psychological Values

Allais' seminal model introduced key critiques to subjective value models based on neo-Bernoullian theories. In this context, he objected to Savage's fifth axiom, which held that the order of preference of two random prospects that have a part in common is left unchanged by any displacement of this part.²⁴⁶ Allais' objection is at the basis of what is generally called the Independence Principle.²⁴⁷ He observed examples in which rational individuals empirically contradicted this principle of independence; for instance, in extreme cases in which the advantages (or drawbacks) of complementarity may have been particularly strong. This is shown in the case of the choice between certain and uncertain gains whose value is high by comparison with the player's fortune (Allais and Hagen 1979, 88). Hence, the critique Allais brought to Savage's subjective value model and the neo-Bernoullian theories was at the basis of an alternative model of subjective value incorporating the effects that the dispersion of psychological values had on the perception of choices made under risk.²⁴⁸

²⁴⁶ The transitional model between the mixed and the purely subjective branches of Choice Theory was first proposed by Savage (1952), who limited the scope of applicability of the formalized expected utility function of von Neumann and Morgenstern only to the normative behavior of "rational individuals." Savage's model deviated from von Neumann and Morgenstern in the consideration of an index for the subjective value of outcomes that differed from their function of cardinal utility. Such a departure was also observed in the works of Friedman (1948), Marschak (1950) and Samuelson (1953). As Allais noted, Savage was the first to introduce the notion of subjective probabilities, although he formally recognized the existence of only objective probabilities (Allais and Hagen 1979, 75). Savage argued that when considering the behavior of a rational individual, it was proper to refer to objective probabilities that were derived from experimentally observed frequencies. In this respect, Savage proposed the existence of an index $B(x)$ different from the cardinal utility $U(x)$ for any rational individual, such that the value v of any risky prospect corresponds to:

$$B(V) = \sum_i p_i B(x_i), \quad \text{where } \sum_i p_i = 1 \quad \text{and } p_i = \text{objective probabilities}$$

Equation 3-8. Savage's formulation of the subjective value function

²⁴⁷ In Allais' view (1979, 76), Savage's index $B(x)$ is supposed to include allowance for the psychological distortion of monetary values, and for the disutility associated with the shape of the probability distribution of psychological values. This explains the departure of Savage from the position of von Neumann and Morgenstern in considering this index equal to the subjective value of possible outcomes or utility. As Allais underscores, if the identity $B(x) = U(x)$ were upheld, then the expected utility function would ignore the dispersion of the psychological values, which would lead to the absurdity of considering as irrational the attitude of a careful individual who attaches weight to this dispersion (Allais and Hagen 1979, 52).

²⁴⁸ As Allais noted, "this concept, which in any event responds to intuition, can be given an operational definition by introducing either the notion of equivalent psychological increments or the notion of minimum perceptible thresholds." The equivalent psychological increments refer to an unequivocal manifestation of an individual's preference for one choice over another "without any hesitation"; as in the case of the "yes" with which almost anyone would respond when asked, "Would you prefer to inherit \$100 million rather than \$10,000?," more strongly than "would you prefer to

Allais proposed a model comprising four fundamental factors: the subjective distortion of monetary values; the weighting of psychological values by probabilities; the subjective distortion of these probabilities; and the subjective distortion of the spread of gains and losses. The first two factors followed the same line of formulation of the quasi-subjective models, which defined the value of a gain in subjective or psychological terms instead of their monetary value, and weighted these values by probabilities. The third and fourth factors constituted Allais' departure from the quasi-subjective models, signifying the consolidation of his model within the subjective value branch of choice theory. As seen before, Savage first proposed this formulation of probabilities but his stated principle of independence confronted the inconsistencies in behavior that Allais demonstrated empirically. Allais observed that this case of distortion of objective probabilities seemed to be generally related to cases of either gains or losses, and to the amounts involved in each situation.²⁴⁹ In general, Allais observed here the general axiom from common wisdom that gamblers may differ from those who are prudent because of the way in which gamblers distort objective probabilities (Allais and Hagen 1979, 48).²⁵⁰

inherit \$10,000 rather than \$1,000?" The notion of minimum perceptible thresholds alludes instead to the unequivocal manifestation of an individual's preference but with respect to specific boundaries to a set of elements. For example, the preference of legislators who allocate, at least in a democracy, the same weight to the minimum threshold values assigned by their constituency, when imposing a progressive income tax (Allais and Hagen 1979, 46).

²⁴⁹ According to these distortions, individuals may overestimate small probabilities of a gain or underestimate small probabilities of a loss; conversely, they may underestimate high probabilities of a small loss, while overestimating small probabilities of large gains or losses alike.

²⁵⁰ To illustrate the combination of the first three factors, Allais considered the simplified scenario of only two outcomes: a gain G and a loss P . If the distortion of the probabilities were independent of G and P , then the subjective value would correspond to:

$$SV = S(p)U(G) + [1 - S(p)] * U(-P)$$

Equation 5-9. Allais' three-factor subjective value function

Thus, in the case of a prudent individual $S(p) > p$, while in the case of a less prudent $p > S(p)$. Additionally, if $S'(p)$ is used to represent the distortion of probabilities in the case of a loss, Allais maintained that a function representing such distortion could be expressed in the following terms:

$$S'(1 - p) = 1 - S(p)$$

Equation 3-10. Allais' function of distortion of objective probabilities

As Figure 7 shows, this relationship states that the curve of the function $S'(p)$ is symmetrical with the curve of the function $S(p)$ with respect to the point C whose coordinates are (0.5, 0.5) (Allais and Hagen 1979, 51).²⁵¹

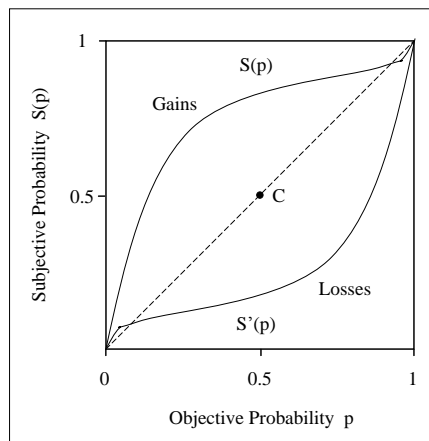


Figure 7. Allais' Function of Objective Probability Distortion
(Adapted from Allais, 1979, figure 6)

The fourth fundamental factor in Allais' model refers to the distribution and dispersion of psychological values, which is mainly related to the pleasure or aversion inherent in taking a risk (Allais and Hagen 1979, 52).²⁵² According to Allais, individuals do not seem to refer to the distribution of objective probabilities, but instead to that function which plots the values of the subjective probability density (Allais and Hagen 1979, 51-52). Figure 8 illustrates the difference between the curves plotting the objective probability density (Part a) versus the subjective density that individuals primarily rely on during decision making (Part b).

²⁵¹ The sharp drops, or apparent discontinuities at the endpoints reflect limitations on the assignation of subjective probability for very low objective probabilities in the case of losses, and very high subjective probabilities in the case of gains related to the distinction between certainty and uncertainty. These two phenomena are illustrated by the property of the functions $S(p)$ and $S'(p)$, which are not well behaved near the aforementioned end points.

²⁵² As Allais noted "the pleasure or aversion attaching to risk-taking constitutes an additional element which modifies the results derived from the pure calculation based on a simple probability weighting (objective or subjective) of the psychological values to be drawn from the different outcomes possible" (Allais and Hagen 1979, 53).

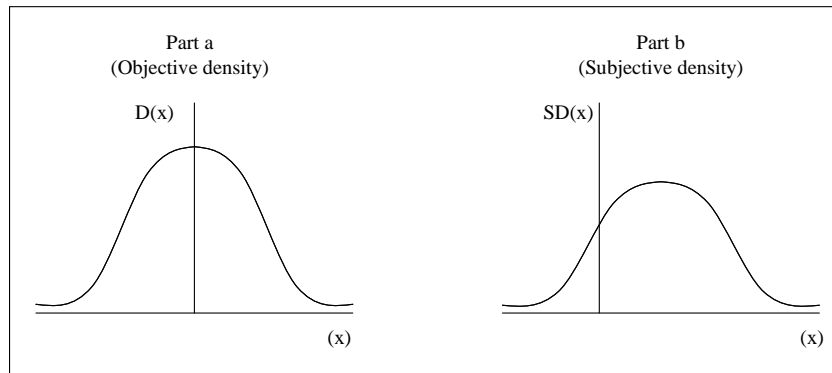


Figure 8. Comparison between Objective and Subjective Probability Densities
(Adapted from Allais, 1979, figures 7 and 8)

Allais holds that the differences in dispersion of the subjective probability distributions seem to reflect the various sets of preferences of individuals with different personalities or identities, as in the case of the preferences distinguishing a prudent individual from an imprudent one.²⁵³ Figure 9 shows the difference in dispersion of the subjective probability distributions, resulting from the expression of preferences of prudent and imprudent individuals.

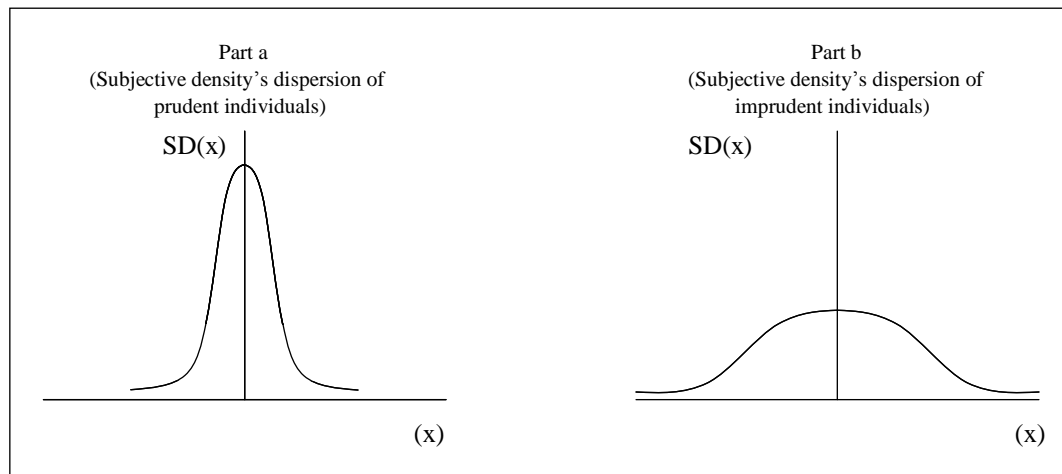


Figure 9. Subjective Density's Dispersion of Prudent and Imprudent Individuals
(Adapted from Allais, 1979, figure 9).

²⁵³ According to Allais, a cautious individual choosing between two random prospects which have Laplace-Gauss distributions of the psychological values, and the same average value, "will select the distribution with the least dispersion." Conversely, if the individuals have a marked preference for risk derived from the pleasure of risk taking, then they will instead choose the distribution with the "greatest dispersion" (Allais and Hagen 1979, 52).

This fourth factor regarding the distribution and dispersion of the probability function corresponds to Allais' critique of the post neo-Bernoullian school of Savage, Friedman, Marschak and Samuelson. According to Savage, et al., the addition to the neo-Bernoullian view of an index $B(g)$ derived from the observation of actual choices that differ from cardinal utility.²⁵⁴ Nonetheless, Allais maintained that "the dispersion of the psychological values about their mean is at least as important a factor as the psychological distortion of monetary values and objective probabilities, so that even in a first approximation, it is necessary to account for the shape of the distribution of psychological values, and in particular of the second-order moments of this distribution" (Allais and Hagen 1979, 69).

Although the large survey of psychological factors that Allais undertook may have rendered his final general equation too broad and inclusive, it opened the door for a new research field of subjective and psychological factors that seem to play fundamental roles in decision making.²⁵⁵ This resulted from his identification of the subjective nature of the probability corresponding to each random choice, as well as the main attributes defining the different types of distortions that individuals make of objective probabilities.²⁵⁶

²⁵⁴ As Allais observed, the view that the index $B(g)$ and cardinal utility were the same needed to be gradually abandoned because there is no support for the thesis that "cardinal utility can be measured by examining empirical data on choices involving risk, a thesis which would imply that real behavior can be suitably portrayed by the neo-Bernoullian formulation." In the rejection of this identity lies Allais' factor regarding the dispersion of psychological values, which would be ignored by such an identity. According to Allais, this "would lead to considering as irrational the attitude of a careful person who attaches weight to this dispersion. Such a position is manifestly untenable" (Allais and Hagen 1979, 75).

²⁵⁵ In addition to the four fundamental factors previously described, Allais also referred to ten secondary factors that integrated his proposed general formula of subjective value. These secondary factors are: the expense of playing, the intrinsic pleasure of the act of playing, the pleasure of winning considered in itself, the minimum perceptible threshold, the interval between the bet and the draw, self justification, relations with others, the existence of some indeterminacy, the nature of the game, and the complexity of reality (Allais and Hagen 1979, 57-60).

²⁵⁶ Based on the conjunction of his fundamental and secondary factors, Allais proposed the following general subjective value function for decisions regarding random prospects:

$$SV = \sum \beta_i S(x_i), \quad \text{where} \quad \sum \beta_i \neq 1$$

Equation 5-11. Allais' general equation of subjective value

In this general equation of subjective value, β_i corresponds to the positive coefficients of the function of all influences affecting the process of choice, such as the distortion of the objective probability by fundamental and secondary factors, as well as the shape and dispersion of the probability distribution (Allais and Hagen 1979, 60-61).

5.1.3.2 Kahneman and Tversky's Prospect Theory

The important observations that Allais brought to the neo-Bernoullian model of choice under risk were furthered with Kahneman and Tversky's development of Prospect Theory. Their model of risky choice not only added the subjective perception of an outcome's occurrence, but also introduced the analysis of the subjective distortion of value from the viewpoint of relative instead of absolute changes in wealth. Prospect Theory constitutes a departure from Bernoulli's pioneering psychological treatment of risk in order to explain why individuals are generally averse to risk, and why this risk aversion decreases with increasing wealth.²⁵⁷ The main difference between the functions of Expected Utility and Prospect Theory seems to lie in the concave decreasing property of Expected Utility's function, different from the property of concavity in the domain of gains, and convexity in the domain of losses distinctive of Prospect Theory's increasing function.

Kahneman and Tversky's definition of Prospect Theory as a criterion for the valuation of choices under risk emphasizes that "the effective carriers of subjective value are changes of wealth rather than ultimate states of wealth." From the viewpoint of introspection and other psychological measurements, these value carriers appear to reflect a convex function of the size of a loss, and a concave function of the size of a gain. In regard to this definition, three distinctive properties of Prospect Theory can be generalized: First, its criterion of decision making as based on gains and losses instead of total wealth; second, its function of value with respect to changes of wealth, which is concave to the origin in the domain of gains, and convex in the domain of losses. Finally, its function's property as steeper with respect to losses than with respect to gains,

²⁵⁷ As seen above, Bernoulli maintains that individuals evaluate prospects not according to the expectation of their monetary outcomes, but instead according to the expectation of the subjective value of these outcomes. Prospect Theory departs from the underlying principles of expected utility by relying on a psychological valuation of risk not according to states of wealth but rather of changes of wealth. Prospect Theory assumes that individuals evaluate outcomes in terms of gains and losses (Kahneman and Tversky 1984, 341-342).

which is generally known as risk aversion. In view of Kahneman and Tversky this “expresses the intuition that a loss of \$X is more aversive than a gain of \$X is attractive” (1984, 342).

The main observations regarding empirical violations of expected utility axioms may correspond to the empirical effects at the basis of the formulation of Prospect Theory. These are observed in the cases of certainty, reflection, probabilistic insurance, and isolation effects. The certainty effect is more characteristic of positive prospects that entail a gain for the individual.²⁵⁸ A corollary of the certainty effect can be observed in the case of the preference of prospects offering probable gains over those granting only possible gains.²⁵⁹ The reflection effect appears to be the main case of empirical contradiction of preference expression in the case of negative prospects, or those that offer a possible loss.²⁶⁰ The third effect involves the contradiction of preferences derived from the assumption of concavity of the utility function, as revealed in the case of probabilistic insurance.²⁶¹ The fourth effect that is grouped within the main tenets of Prospect

²⁵⁸ As described above in the context of the Allais’ Paradox, the certainty effect refers to the marked preference of individuals to choose certain outcomes over probable ones even if the latter offer a lower expected value than the former. Kahneman and Tversky noted that “people overweight outcomes that are considered certain, relative to outcomes which are merely probable” (Kahneman and Tversky 1979, 265).

²⁵⁹ As Kahneman and Tversky showed, between the prospect *a* (45% chance of winning \$6,000) and *b* (90% chance of winning \$3,000), 86% of 66 individuals surveyed preferred *b* over *a*; that is, a preference for the most probable option, even if both prospects offered the exact same expected value of \$2,700 each. On the other hand, between the prospect *c* (0.1 % chance of winning \$6,000) and *d* (0.2% chance of winning \$3,000), 73% of 66 participants preferred prospect *c* over *d*; that is, the prospect with the larger gain despite the fact that both prospects also offered the same expected value of \$6. As Kahneman and Tversky conclude, these results show that in a “situation where winning is possible but not probable, most people choose the prospect that offers the larger gain” (Kahneman and Tversky 1979, 267). Similar confirmatory results of this extension of the certainty effect were also obtained by Maccrimmon and Larsson (1979).

²⁶⁰ This effect was first noted by Markowitz (1952), and subsequently by Williams (1966), and Fishburn and Kochenberger (1979). Considering outcomes where their signs have been reversed from gains to losses, Kahneman and Tversky showed that in the case of a prospect expressed in positive terms, such as *a* (80% chance of winning \$4,000) and *b* (a certain gain of \$3,000), 80% of 95 participants chose *b* over *a*, even if *a* offers an expected value \$200 larger than *b*. On the other hand, if the reflection of those prospects is considered, where the signs of their outcomes have been reversed from gains to losses, as in the case of the option between prospect *c* (80% chance of losing \$4,000) and *d* (a certain loss of \$3,000), 92% of the same 95 participants chose instead prospect *c* over *d*, even if *c* involved an expected value that was \$200 lower than *d*. Kahneman and Tversky obtained similar reflection effects in the case of both probable and possible prospects, indicating that the reflection effect is extendable beyond the case of certain losses to probable and possible ones (Kahneman and Tversky 1979, 268).

²⁶¹ According to Kahneman and Tversky, “probabilistic insurance represents many forms of protective action where one pays a certain cost to reduce the probability of an undesirable event without eliminating it altogether.” In this case, the assumption that the utility of the function for money is concave everywhere does not hold (Kahneman and Tversky 1979, 269-270). In view of Kahneman and Tversky, probabilistic insurance provides empirical evidence against the Bernoullian concave formulation of expected utility, which instead should imply that probabilistic insurance is superior to regular insurance. Indeed, they conveyed that “if at asset position *w* one is just willing to pay a premium *y* to insure a

Theory is the isolation effect. This refers to the empirical evidence of contradictory preferences based on distortions in the perception of particular attributes of one alternative over all others. As Kahneman and Tversky noted, individuals often disregard elements shared by the respective alternatives, and focus on those that distinguish them (1979, 271).

In view of Prospect Theory, the process of decision making comprises the phases of editing and evaluation, by which individuals perform a preliminary analysis of offered prospects, and choose the prospects with the highest value (Kahneman and Tversky 1979, 274). The phase of editing corresponds to a number of operations that are performed on choices either separately or jointly. Regarding choices separately considered, editing involves coding, combination, and segregation.²⁶² Regarding the forms of editing applied to two or more prospects jointly, they involve cancellation, simplification, and detection of dominance.²⁶³ In the evaluation phase, the selection of the prospect offering the highest value takes place according to two scales related to the occurrence and the value of outcomes. The first is the π scale, which associates with each probability p a decision weight $\pi(p)$ that reflects the impact of p on the overall values of the prospect. The second, or v scale, assigns to each outcome x a number $v(x)$ that reflects the subjective value of that outcome as the deviation from a reference point corresponding to current wealth, expressed in terms of gains or losses (Kahneman and Tversky 1979, 275).²⁶⁴

probability p of losing x , then one should definitely be willing to pay a smaller premium ry to reduce the probability of losing x from p to $(1-r)p$, where $0 < r < 1$ " (Kahneman and Tversky 1979, 270).

²⁶² Through coding, the outcomes of prospects are perceived as either gains or losses relative to a reference point, usually the current asset position "in which case gains and losses coincide with the actual amounts that are received or paid." Through combination, the prospects are simplified by combining probabilities associated to different outcomes. Finally, through segregation, the riskless component of certain prospects is segregated from the risky ones (Kahneman and Tversky 1979, 274).

²⁶³ Based on the isolation effect, cancellation occurs when individuals discard components shared by prospects, which leads to inconsistent preferences when the same choice is presented in different forms. Simplification corresponds to the rounding of the probabilities associated to certain outcomes. Finally, the detection of dominance refers to the joint operation of editing, through which individuals scan prospects to detect dominated alternatives that are rejected without further consideration (Kahneman and Tversky 1979, 275).

²⁶⁴ Prospect Theory follows the general formulation of the subjective value of Allais, which in the case of a basic prospect comprising two choices, is expressed in the following formal terms:

$$SV(x, p; x, q) = \pi(p) * v(x) + \pi(q) * v(y), \quad \text{where } \pi(0) = 0, v(0) = 0, \text{ and } \pi(1) = 1$$

Equation 5-12. Prospect Theory's subjective value function

5.1.3.2.1 Properties of Prospect Theory's Value Function $v(x)$

The fundamental element of the value component in Prospect Theory's function of subjective value seems to be the assumption that the carriers of value are changes in wealth rather than absolute levels of wealth.²⁶⁵ Consequently, instead of formulating the decision problem in terms of final assets as is customary in decision analysis, Prospect Theory argues that people usually formulate these choices in terms of gains and losses by the amounts of money obtained or paid when a prospect is played. In this case, the reference point consists in the status quo, or the individual's current assets, instead of final levels of wealth (Kahneman and Tversky 1979, 286). The authors emphasize that "the explicit formulation of final assets is perhaps the most effective procedure for eliminating risk seeking in the domain of losses" (Kahneman and Tversky 1979, 287). Hence, as a result of Prospect Theory's main assumptions and formulations, the location of the reference point as the level of the individual's current assets instead of final assets, and the manner in which choice problems are coded and edited, emerge as critical factors in the analysis of choices under risk (Kahneman and Tversky 1979, 288).

Given this essentially relative form of valuation, Kahneman and Tversky's model defines the main properties of the value function within the general branch of subjective value. The principle underlying the main properties of this value function within this general branch of Choice

In the particular case of strictly positive or strictly negative prospects, individuals' evaluation takes into consideration the riskless component, or minimum gain or loss certain to be obtained or paid, and the risky component or additional gain or loss which is actually at stake. Kahneman and Tversky formalized this type of evaluation in the following manner:

if $p + q = 1$ and either $x > y > 0$ or $x < y < 0$, then

$$SV(x, p; y, q) = v(y) + \pi(p)[v(x) - v(y)]$$

Equation 5-13. Prospect Theory's subjective value function for strictly positive or negative prospects

²⁶⁵ Kahneman and Tversky refer to the findings of Helson (1964) that stimuli are perceived in relation to reference points in order to support their position that the level of current assets is the respective reference point in value-based decisions. Although Kahneman and Tversky assert that their "emphasis on changes as the carriers of value should not be taken to imply that the value of a particular change is independent of initial position," they also affirm that "the preference order of prospects is not greatly altered by small or even moderate variations in asset position." They argue that "the certainty equivalent of the prospect [a 50% chance of winning \$1,000], for example, lies between 300 and 400 for most people, in a wide range of asset positions" (Kahneman and Tversky 1979, 277).

Theory is the salient characteristic of attitudes toward changes in welfare.²⁶⁶ In other words, the aggravation that one experiences in losing a sum of money appears to be greater than the pleasure associated with gaining the same amount. Based on these general premises, Kahneman and Tversky proposed a subjective-value function that is defined on deviations from the reference point: generally concave for gains and commonly convex for losses, while steeper for losses than for gains, as Part B of Figure 10 shows.²⁶⁷

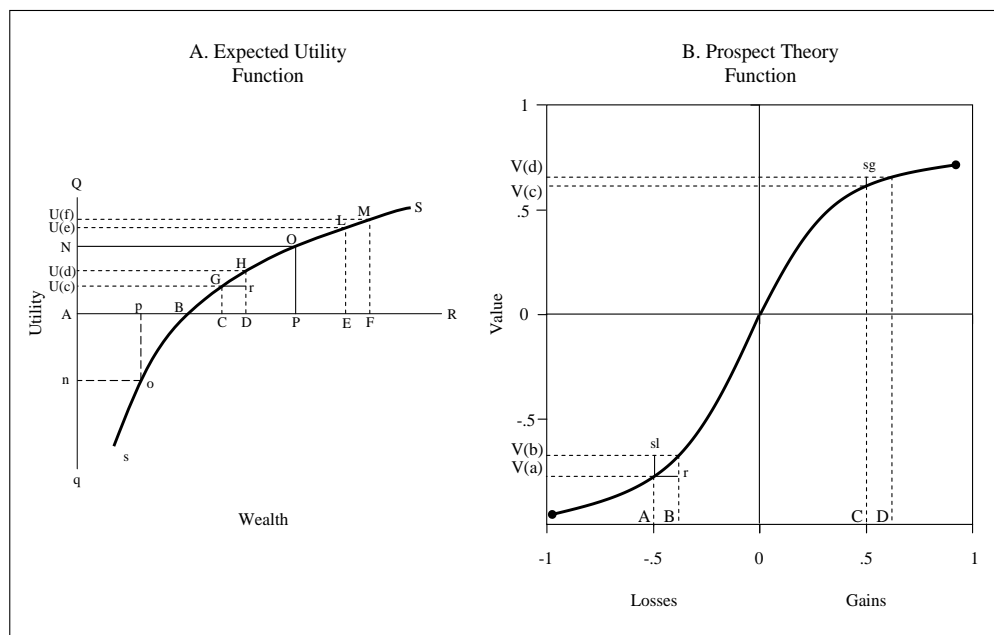


Figure 10. Comparison between Expected Utility and Prospect Theory on the Subjective Value of Outcomes

(Adapted from Bernoulli, 1954, figure in p. 26, and Kahneman and Tversky, 1984, figure 1).

Part B of Figure 10 shows the function of Prospect Theory for the value of outcomes, which has a shape that is convex and steeper in the domain of losses while concave and shallower

²⁶⁶ This attribute was first observed by Galanter and Pliner (1974), according to whom losses loom larger than gains.

²⁶⁷ This subjective function differs from the purely logarithmic function that Bernoulli assigned to the subjective value of outcomes or utility, incorporating for the domain of the losses the distinctive element of steep convexity (Figure 10 A).

in the domain of gains.²⁶⁸ Although Prospect Theory is mainly concerned with monetary outcomes, Kahneman and Tversky suggest that it is also applicable to choices involving other attributes. Kahneman and Tversky point out that this theory can also be extended to attributes such as the quality of life or the number of lives that could be lost or saved as a consequence of a policy decision (Kahneman and Tversky 1979, 288).

5.1.3.2.2 Properties of Prospect Theory's Weighting Function $\pi(p)$

The decision weight $\pi(p)$ that multiplies the value of the outcome $v(x)$ signifies a factor inferred from choices between prospects, in the same manner in which subjective probabilities are inferred. Nevertheless, Kahneman and Tversky assert that these decision weights differ from probabilities in the sense that they do not obey the probability axioms; consequently, they should not be interpreted as a measure of degree or belief. According to the authors, decision weights are always likely to be smaller than the probability assigned to an outcome, and only coincide with such a probability if the expectation principle holds. Thus, Kahneman and Tversky conclude that “decision weights measure the impact of events on the desirability of prospects, and not merely the perceived likelihood of these events” (Kahneman and Tversky 1979, 280).

One of the most salient properties of the weighting function depicts its nature as an increasingly normalized function of an outcome's probability, with the following properties: subadditivity for small probabilities, subcertainty for all probabilities, and subproportionality.²⁶⁹ As

²⁶⁸ This phenomenon is readily observed by comparing the differences between the segments sg and sl in Figure 10B. Sg expresses the difference between $V(d)$ and $V(c)$ or the difference in subjective value that an individual derives from a gain C to D . In contrast, sl is the larger segment expressing the difference between the levels of subjective value $V(a)$ and $V(b)$, or the difference in subjective value that an individual derives from a loss B to A , which is the exact amount r of the gain from C to D .

²⁶⁹ The normalized increasing property of the weighting function $\pi(p)$ reflects its increasing nature with $\pi(0)=0$ and $\pi(1)=1$. This represents a normalized scale so that $\pi(p)$ is the ratio of the weight associated with the probability p to the weight associated with the certain event. The property of subadditivity for small probabilities means that for small values of p , $\pi(rp) > r\pi(p)$ for $0 < r < 1$. As the authors argue, this is related to the tendency to overweight very low probabilities so that $\pi(p) > p$ for low probabilities (Kahneman and Tversky 1979, 280-281). The property of subcertainty for all probabilities $0 < p < 1$ corresponds to $\pi(p) + \pi(1-p) < 1$. Based on Allais' observations regarding the certainty effect, this property “reflects an essential element of people's attitudes to uncertain events, namely that the sum of the weights

Figure 11 shows, these properties are reflected in the distinctive shape of the hypothetical representation of the weighting function $\pi(p)$, which is relatively shallow in the open interval and changes abruptly near the end-points, where $\pi(0)=0$ and $\pi(1)=1$.²⁷⁰

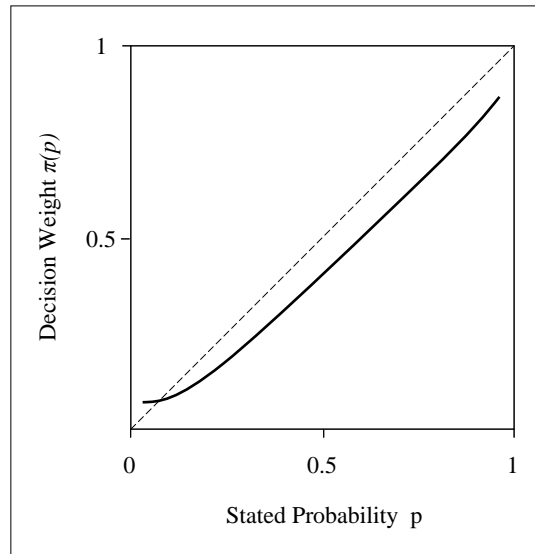


Figure 11. Prospect Theory's Hypothetical Weighting Function
(Adapted from Kahneman and Tversky, 1979, figure 4)

Although Prospect Theory mainly refers to a weighting function that is based on a stated probability, it can also be extended to the typical situation of choice, where the probabilities of outcomes are not explicitly given. As Kahneman and Tversky affirm, in these situations the decision weights must be attached to particular events rather than to stated probabilities, but they are expected to exhibit the essential properties ascribed to the weighting function (Kahneman and Tversky 1979, 288). In this context, the authors acknowledge that the decision weight associated

associated with complementary events is typically less than the weight associated with the certain event" (Kahneman and Tversky 1979, 282). Finally, the subproportionality of the weighting function $\pi(p)$ imposes considerable constraints on its shape, and only holds if $\log \pi$ is a convex function of $\log p$. This means that if π is a monotone and continuous function over $(0,1)$ (a small change in the independent variable p produces only a small change in the value of the function $\pi(p)$), then if $\pi(p) > p$ and subproportionality holds, then $\pi(rp) > r\pi(p)$, for $0 < r < 1$.

²⁷⁰ According to Kahneman and Tversky, the sharp drops, or apparent discontinuities of π at the endpoints, reflect limitations on the assignation of decision weights to certain events; for there are cases in which such a weight is so small that it is not attachable at all. In the view of the authors, this phenomenon is manifested in the categorical distinction between certainty and uncertainty that is expressed in the obvious property of the function $\pi(p)$, which is not well behaved near the end points (Kahneman and Tversky 1979, 282-283).

with an event, which primarily depends on the likelihood of that event could be subject to major biases; for instance, in cases of ambiguity and vagueness (Kahneman and Tversky 1979, 289).

5.1.3.2.3 Limitations of Prospect Theory's Model

Prospect Theory had its dawn during the late sixties with the extension of the principles of information technology and computation to the Theory of Choice. It is a theory that was formulated to provide an alternative view to the process of decision making, taking into account the constraints and limitations of focus and working memory that the human brain has for processing information. Prospect Theory has the advantage of addressing some of the challenges that environmental factors can pose to the process of ranking and choosing from a variety of complex options.²⁷¹

The main innovation in the formulation of subjective valuation proposed by Prospect Theory seems to be the introduction of a point of reference that focuses on changes in wealth instead of final states of wealth. Conversely, Bernoulli noted that the proportional changes of wealth with respect to total wealth have an important psychological effect on the perception of losses and gains, as well as on the subjective perception of probabilities and changes in utility. This factor appears to be overlooked by Prospect Theory because Kahneman assumes that individuals generally make decisions based on “changes of wealth” rather than “ultimate states of wealth” (Kahneman and Tversky 1984, 341-342). As explained later, this dissertation suggests that the advantage of Prospect Theory to identify the property of steeper convexity of the value

²⁷¹ Prospect Theory focuses on the computation and information processing challenges of decision making that, as detailed in the following neurobiological section, seem to play an important role in how different brain cortical regions process factual knowledge. Precisely one of the important aspects concerning the role of somatic markers in decision processes suggests the boosting effect that they seem to have both on attention and on working memory; thus, greatly contributing to sorting and ranking among alternative choices. Although an important effect, boosting of attention and working memory appear contingent on the main marking effect attributed to somatic markers, which seems to be an essential component in the process of organization and choice-selection of complex decision making.

function on the domain of losses can also be expressed with the normalization of the Bernoullian function.²⁷²

The inconveniences caused by the abandonment of the Bernoullian integration of absolute and relative wealth states (in favor of only relative states) appear evident in the limitations of the effect assigned to probabilistic insurances. In this case, Prospect Theory seems to misrepresent Bernoulli's model of expected utility assuming that the concavity in the utility function would necessary entail a preference for probabilistic insurance. This seems to contradict the empirical evidence of individuals who largely reject such types of limited reduction of the probability of a loss.²⁷³ Instead, it implies that both the decision of the one who buys, and the one who offers coverage for losses, may strictly depend on their absolute levels of wealth. Another factor that seems overlooked by Prospect Theory, and that appears to play a primary role in decision making under risk, is the price paid for entering into the prospect.²⁷⁴ This omission suggest a weak element in Kahneman and Tversky's argument concerning the existence of contradictory empirical evidence on outcomes otherwise determined by the Bernoullian model of a concave utility function (Kahneman and Tversky 1979, 270).

Kahneman and Tversky's assumption that the carriers of value are changes in wealth (rather than absolute levels of affluence) seems to provide an incomplete representation of the point of reference that individuals appear to use in the subjective valuation of risky prospects (Kahneman and Tversky 1979, 277). A complete representation may involve the proportion of change of wealth that the prospect represents with respect to absolute levels of wealth before the decision is

²⁷² Rather than assigning domains for losses and gains in the value function, the normalization of Bernoulli's curve can take into consideration the prospect's absolute wealth and its cost, while also allowing for the expression of the relative wealth effect.

²⁷³ As explained above, the Bernoullian model in its very specific application to choices regarding insurance is inseparable from the consideration of the absolute states of wealth that are disregarded in the model of Prospect Theory. The underlying principle of the application of expected utility to insurance is based on the norm of general wisdom that it seems not advantageous for everybody to insure against losses or to offer coverage for them (Bernoulli 1954, 29).

²⁷⁴ The level of the premium charged by the insurer is usually absent in Prospect Theory's justification of a larger expected value in the case of probabilistic insurance versus full insurance (Kahneman and Tversky 1979, 269-270).

made. This proportion seems to be one of the main points of reference intuitively considered by individuals in their subjective valuations. In addition, the costs involved in participating in a decision-making process and their proportionality with respect to the individuals' levels of wealth appear to also act as key components to the more complex points of references that they take into consideration when evaluating risky prospects.²⁷⁵ In this manner, Prospect Theory is said to be erected on a foundation that could involve an oversimplification of the more complex processes of subjective valuation of outcomes, which should not only involve the consideration of each prospect in relative, absolute, and proportional levels of wealth, but also incorporate these three intuitive forms of valuation into the consideration of the costs involved in a specific decision-making process.

Given their apparent disregard for the cost of prospects, Kahneman and Tversky do not seem to provide conclusive evidence to discard these effects on overall subjective valuations. Instead they appear to assume that given the magnification of the isolation effect, individuals tend to separate their consideration of riskless and risky prospects. This may have led Kahneman and Tversky to suggest that "people are unlikely to perform the operation of subtracting the cost from the outcomes in deciding whether to buy a gamble." Rather, they argue that individuals evaluate the gamble and its costs separately, and decide to purchase the gamble if the combined value is positive.²⁷⁶ Therefore, without further consideration, Kahneman and Tversky conclude that "people are expected to exhibit more risk seeking in deciding whether to accept a fair gamble than in deciding whether to purchase a gamble for a fair price" (Kahneman and Tversky 1979, 288).

Finally, regarding the weighting function within Prospect Theory, the authors recognize that it does not correspond to the notion of subjective probability, which signifies a departure

²⁷⁵ This last element is generally absent in experiments that proponents of Prospect Theory conduct with subjects participating in their surveys (Kahneman and Tversky 1979, 268-271).

²⁷⁶ For instance, a gamble offering a 1% chance to win \$1,000 will be purchased for a price of \$10 if $\pi(0.01)v(\$1,000) + v(\$10) > 0$ (Kahneman and Tversky 1979, 288).

from Allais' formulation of the subjective distortion of an outcome's probability (Kahneman and Tversky 1979, 280).²⁷⁷ Prospect Theory uses decision weights, which in view of Kahneman and Tversky "measure the impact of events on the desirability of prospects, and not merely the perceived likelihood of these events" (Kahneman and Tversky 1979, 280). In this sense, the decision weight assigns a weight on the subjective value of outcomes that does not necessarily correspond to the perception of its probability. Given the formulation of the subjective distortion of the probability in similar terms to the formulation of the utility, Allais' model seems to offer a better approach to considering the distortive effect of subjective perceptions on the evaluation of outcomes. These observations regarding Prospect Theory within the context of Allais' model of distribution and dispersion of psychological values form the basis of Palpatational Rationality's integral model of decision making as discussed in the following section.

5.2 Alternative Decision-Making Model of Palpatational Rationality

One of the most important advances in the theory of the subjective value of decisions made under risk seems to derive from the recognition that complex moral and social decisions are dominated by the subjective valuation of different choices, which appear to be weighted by an equally subjective valuation of their respective probabilities. This departure from the original model of objective valuation may be in line with current neurobehavioral findings that highlight the existence of somatic markers associated both with innate and culturally acquired preferences, as will be detailed in the next chapter. At the basis of this integration is the realization that somatic markers can play a distinctive role in the process of ordering and ranking choices.²⁷⁸

²⁷⁷ The advantage of Allais' approach to the probabilistic element of the subjective function seems to lie in using the same measurement to express value and probability with respect to the subjective distortion in the individual's perception of outcomes. Indeed, it can be said that utility is to value what the subjective probability is to the objective probability of an outcome.

²⁷⁸ As seen above, such a marking effect appears manifested at the core of the notion of psychological value that Allais assigned both to the case of equivalent psychological increments and minimum perceptible thresholds. According to Allais and Hagen, this notion of psychological value has an "intuitive" nature manifested in the expression "without

The preceding discussion highlighted the specific attributes of prudent individuals versus less prudent ones. This emerges from the subjective value that both types of individuals appear to assign to outcomes and their respective weighting probabilities. In the case of the valuation of outcomes, prudent individuals seem to exhibit the distinctive element of low curvature of their utility functions. In the case of the weighting of probabilities, prudent individuals tend to have smaller distortions of the objective probabilities involved in each risky choice. These effects point toward the outcomes that the Sublime Palpation of Christian Freedom seems capable to determine through renewed preferences resulting from the liberating effect of the Sublime Image's palpation. The essence of this liberating effect alludes to the supra-marking effect that the Sublime Palpation seems to have on progressively overcoming the somatic-marking effect of innate feelings. In this manner, the higher the somatic effect of the innate preferences, the higher the curvature of the utility function and the distortion of the objective probabilities associated with risky choices. On the other hand, the higher the supra-somatic marking effect, the flatter the curvature of the utility function and the smaller the distortion of objective probabilities.

The moral expectation associated with decision making under risky choices has as a criterion the maximization of the expected utility that is weighed according to personal circumstances of each individual.²⁷⁹ The value subjectively assigned to different images of factual knowledge reconstructed during decision-making processes seems to depend on the state of the individual with respect to specific circumstances, among which freedom appears to be of paramount im-

hesitation" of the preference of one option over all others (Allais and Hagen 1979, 46). According to the neurobehavioral evidence discussed in chapter 6, the criteria that seem needed to rank and create an order among all possible alternatives can be provided by somatic markers, "which express at any given time, the cumulative preferences we have both received and acquired" (Damasio 2005, 199).

²⁷⁹ As detailed in chapter 2, one of the most important individual states associated with optimal decisions in complex social and moral situations seems to correspond to the level of personal freedom from the marking effect and preferences determined by innate self-centered and self-preserving feelings.

portance.²⁸⁰ In this manner, the standard of freedom associated with the Sublime Palpation of Christian Freedom seems to constitute a central benchmark for defining the utility appended to the values of different options. In line with the importance that Bernoulli attributes to physical freedom as a standard of measurement to determine moral and social decisions, this palpational understanding of Christian Freedom suggests an even higher standard than the individual states of wealth employed by Expected Utility Maximization or the changes in wealth characteristic of Prospect Theory.²⁸¹

5.2.1 *Corrective Effect on the Subjective Perception of an Outcome's Value*

The formulation that Prospect Theory proposes for the function depicting the subjective distortion of an outcome's value represents points in the function where the same absolute change of wealth (either as a loss or as a gain) is related to the same level of change in value.²⁸² Nevertheless, when moving away from the origin both in direction of gains and losses, it seems possible to find in Prospect Theory's function two segments for which the same absolute change, either in terms of a loss or a gain, determines the same absolute change in value. This result appears to contradict the observation of the underlying principle that individuals experience greater aggravation in loosing a sum of money than the pleasure they experience by gaining the same amount. As Figure 12B, shows, the same r change from C to D in the domain of gains associated with the change s from $V(c)$ to $V(d)$ reports the same level of change in value from $V(e)$ to $V(f)$, when the same absolute level of change r is considered in the domain of losses between E and F .

²⁸⁰ As described in chapters 3 and 4, the assimilation of the Sublime Image of God's love for the human race and the Sublime Palpation of Christian Freedom seem to affect decision-making processes and preferences that appear to conform to a state of freedom influencing the subjective value individuals assign to alternative choices.

²⁸¹ As mentioned previously, Bernoulli argues that "a rich prisoner who possesses two thousand ducats but needs two thousand ducats more to repurchase his freedom, will place a higher value on a gain of two thousand ducats than does another man who has less money than he" (Bernoulli 1954, 25).

²⁸² As seen before, the underlying principle of Prospect Theory's function is the general observation that individuals experience greater aggravation in loosing a sum of money than pleasure in gaining the same amount (Kahneman and Tversky 1979, 286-288).

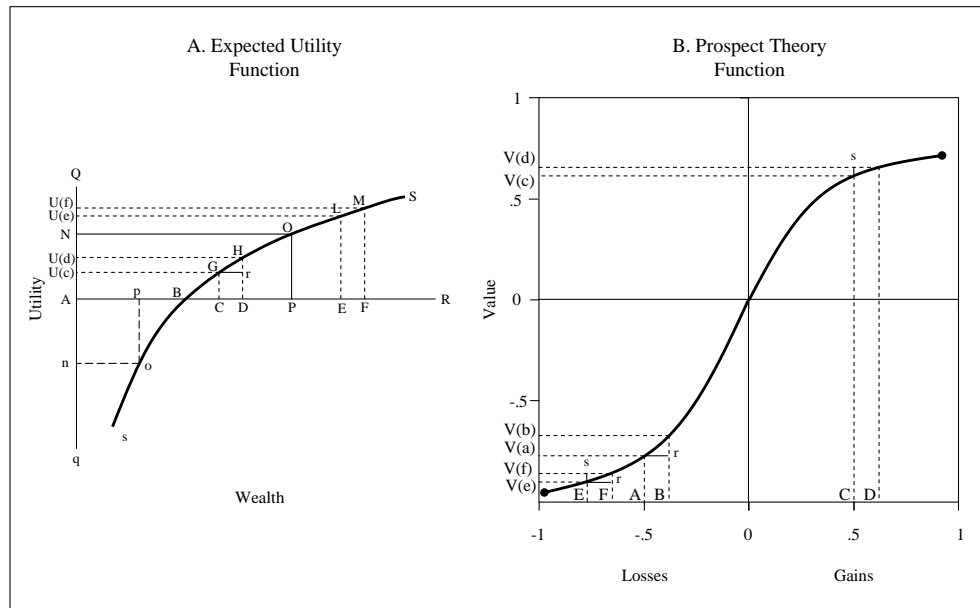


Figure 12. Limitations of Prospect Theory Representing Subjective Values

Given these considerations, Palpatational Rationality proposes a normalization of the Bernoullian value function so as to integrate the representation of the subjective distortion of an outcome's value.²⁸³ As in the case of the Bernoullian function, the value portion of Palpatational Rationality's general function do not seem to exhibit contradictory instances to the principle of differential preferences regarding gains and losses. Figure 13 shows that there is no range in the function of equal marginal change for the same marginal change in its domain. The same marginal change r between EF , AB and CD is not associated with the same distortion in the perception of the outcome's value along the function. Moreover, the value function of Palpatational Rationality also reflects the general property of risk seeking in the domain of losses, and risk aversion in the domain of gains characteristic of its steeper slope for any value of $x < 0$ (losses), and less

²⁸³ Bernoulli's utility function shown in Figure 12A has a property that consistently represents the principle of differential subjective distortion in value caused by prospects of gains and losses. The Bernoullian function does not have a range that equals the same marginal change in any of its domains. Accordingly, if the Bernoullian function is normalized, it better denotes the empirically derived principle underlying the value function of Prospect Theory, which is represented by a steeper shape for the domain of losses than for the domain of gains. The Bernoullian function contains the additional properties of providing a complete mathematical description as a model that fits empirical observations regarding value preferences, evaluative proportions of relative change in wealth and absolute wealth, as well as the costs of partaking in a prospect. As detailed before, these factors also play an important role in the decisions that individuals make regarding their perception of an outcome's value.

steep for any value of $x > 0$ (gains). Palpatational Rationality's function of subjective value can be mathematically modeled as the logarithmic function of the subjective distortion in the perception of the value. In addition, this function seems able to represent the important considerations that individuals seem to attach to this value regarding the ratios of relative to absolute changes of wealth, and the costs of prospects.

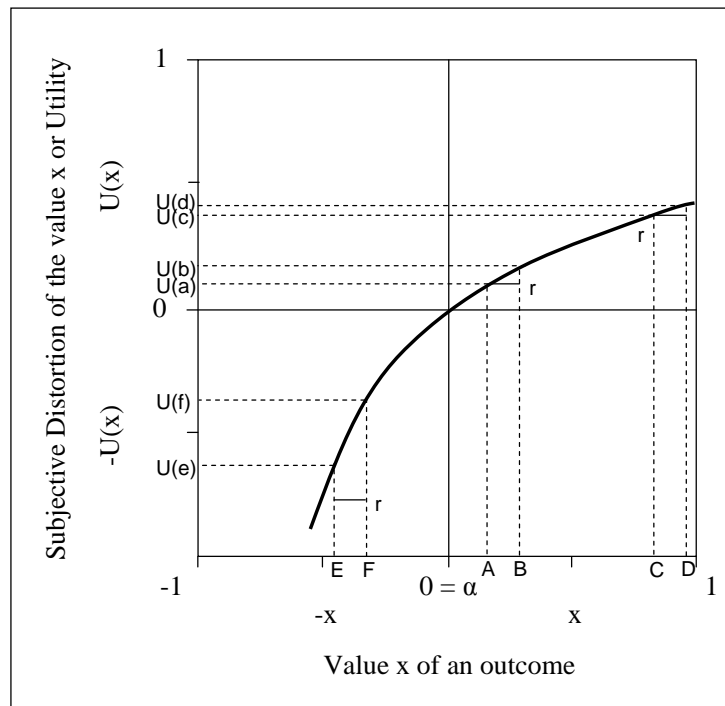


Figure 13. Palpatational Rationality's Function of the Distortion of an Outcome's Objective Value

The alternative decision-making model of Palpatational Rationality proposes that the Sublime Palpation of Christian Freedom results in a progressive restitution of the capability to perceive the value of outcomes by overcoming the subjective distortion produced by innate feelings.²⁸⁴ This appears to determine a progressive reduction of these distortions, which could be

²⁸⁴ The universal chain of causation whose first Agent and origin have been described in chapter 3 includes the value of prospects that individuals perceive in their complex social and moral decision-making processes. The original capability of individuals to apprehend such a value appears limited in the unrenewed human nature, and the ensuing distortion magnified by innate preferences corresponding to the perception of innate feelings, as explained in chapter 2. This subjective distortion can be progressively magnified with time in the case of the unreformed human nature, making

represented by the transformation in the shape of the utility function.²⁸⁵ The function thereby denotes the subjective perception of the value of an outcome, which tends to converge towards the line of perfect proportionality between objective and subjective value; that is, the increasing linear function with slope 1 that groups all points where the subjective distortion of the value equals 0, as shown in Figure 14.²⁸⁶

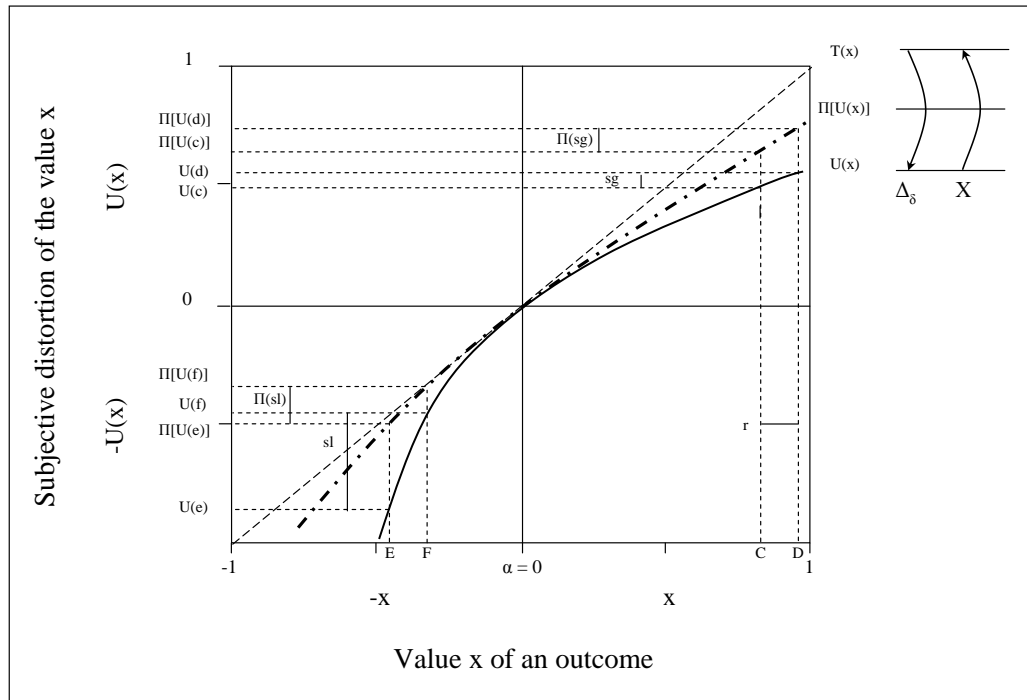


Figure 14. Palpatational Corrective Effect on the Subjective Distortion of the Value of Outcomes

individuals more prone to perceive as subjective value what largely deviates from the objective dimension of an outcome's value.

²⁸⁵ For explanatory purposes, the model of subjective valuation has mainly focused on the monetary objective dimension of an outcome, which is not the only perspective susceptible to subjective valuation. Generally, the complexity of social and moral decisions exposes the oversimplification of the value of outcomes when only considering their monetary dimension.

²⁸⁶ According to the neurobiological evidence discussed in the next chapter, this change in the shape of the utility function relates to the existence of somatic markers that seem to influence the subjective perception of the value of outcomes. This marking effect is related to innate and self-centered preferences of pleasure seeking and pain avoidance discussed in detail in chapter 2. In this regard, the somatic-marker effect corresponds to the cumulative factor Δ_δ that appears to distort the perception of the value of an outcome. This distortion is represented by the level of departure of the subjective value function, or utility $U(x)$, from the function of perfect proportionality between the value of the outcome in a specific unit of measure, and its subjective perception as seen in the increasing linear function $T(x)$ in Figure 14. The supra-somatic effect of the Sublime Palpation of Christian Freedom described in chapters 3 and 4 corresponds to the factor X that produces the opposite effect of restoring the capability to perceive the objective value of prospects. This factor X affects the curvature of the $U(x)$ function, which in the context of the liberating effect of the Sublime Palpation of Christian Freedom makes it approach the level of perfect proportionality of the function $T(x)$. This last function maps the perfect correlation between value and its subjective perception; that is, the respective values of x where the subjective distortion factor $\Delta_\delta = 0$.

If α represents the endowed productive capacity of each individual, then the distortion of the objective value known as utility has absolute positive values when referring to prospects that imply total wealth above such productive capacity. Conversely, this distortion of the objective value is negative when applied to absolute levels below that productive capacity. Figure 14 shows the palpational corrective effect that the Sublime Palpation of Christian Freedom seems capable to determine on the subjective distortion of the objective value of a prospect.²⁸⁷

The integration of final states of affluence with changes of wealth characteristic of Bernoulli's model illustrates the case of absolute gains or losses, and positive and negative utilities. The model represents the relative changes of both wealth and utility through upward or downward changes of position along the function of subjective value.²⁸⁸ The function reflects the absolute positive and negative utilities associated with those absolute gains and losses as the utilities located on the y axis above or below the origin. In addition, the model represents relative changes of both wealth and utility as upward or downward changes in positions along the value function.²⁸⁹ As shown in chapter 2, somatic markers seem to differently distort the perception of indi-

²⁸⁷ Formally, the function $\phi(x)$ represents the integral distortive effect of Δ_δ on the perception of the value of an outcome. This distortion is as seen in the departure of the subjective value function from its original perfect proportionality $T(x)$, which transforms $T(x)$ into the utility function $U(x)$:

$\phi(T(x)) = U(x)$ where $x \neq U(x)$ (*Integral distortive effect of Δ_δ*)

Equation 5-14. Integral distortive effect on the perception of an outcome's value

The corrective effect of the Sublime Palpation of Christian Freedom corresponds to the function $\Pi(U(x))$ that transforms the function $U(x)$ due to the corrective effect X, and allows this function to progressively approach the perfect proportionality line $T(x)$:

$\Pi(U(x)) \rightarrow T(x)$ (*Corrective effect of X*)

Equation 5-15. Palpational corrective effect on the perception of an outcome's value

In this case, the steeper convexity of the value function on the domain of losses is expressed by the normalization of the Bernoullian function proposed by Palpational Rationality. This normalized function also expresses the absolute wealth effect and prospect-cost effect while preserving its mathematical representativeness.

²⁸⁸ Bernoulli's model represents absolute gains or losses as the respective points of affluence located to the right or left of the original productive capacity, which in the normalized function is represented by its origin.

²⁸⁹ In this manner, it is possible to consider the prospect of a relative gain for an individual whose absolute level of affluence is located on the domain of losses as the relative upward change in position along the function under the x axis. Likewise, a prospect of relative loss can also be considered as the relative downward change in position along the function above the x axis.

viduals regarding gains or losses.²⁹⁰ Greed or lusts are pleasure-seeking feelings that seem to function as somatic markers with the largest subjective misrepresentations in the evaluation of gain outcomes. Conversely, fears, or pain-averting feelings, appear to be somatic markers with the largest distortions on the perception of value in the prospect of a loss. Lusts are represented by the upward movement along the function, while fears by the respective downward motion. The liberating effect attributed to the Sublime Palpation of Christian Freedom suggests an integral corrective effect on the subjective perception of the value of outcomes, able to counteract the distortion caused by the somatic marking of innate feelings.

5.2.2 *Corrective Effect on the Subjective Perception of an Outcome's Occurrence*

In terms of the subjective distortion of the probability of a prospect, the general function of Palpational Rationality proposes a modification of Allais' and Prospect Theory's models of subjective probabilities, which express the distortions in the perceptions of the objective occurrence of an outcome. This treatment of probabilities represents a departure from Prospect Theory's use of a weight function with properties differing from those of Allais' model (Figure 15A).

²⁹⁰ This was plainly observed by Bernoulli when noting that the individual less affected by a gain will be able to support a loss with greater patience (Bernoulli 1954, 26).

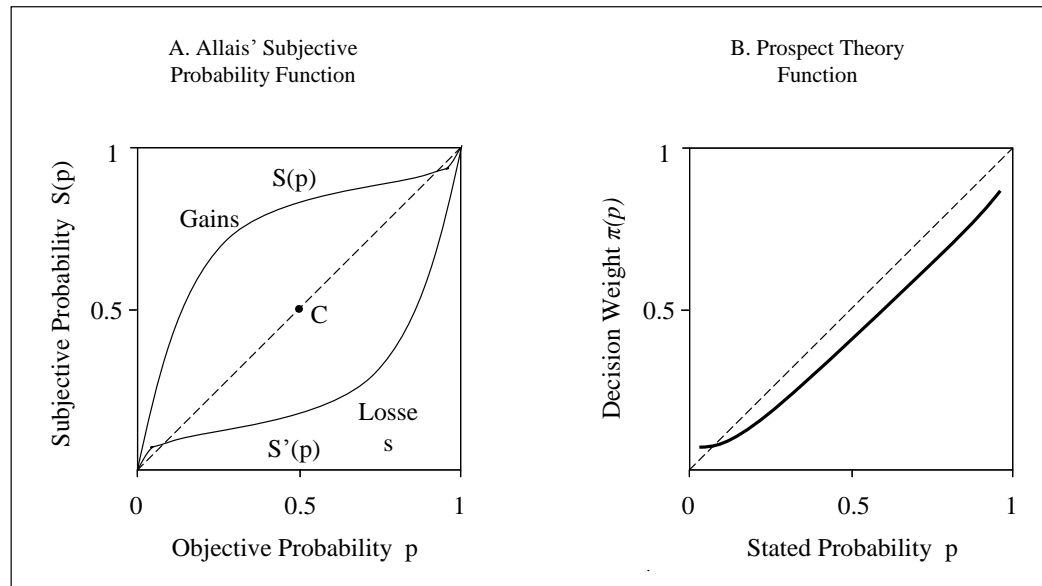


Figure 15. Limitations of Prospect Theory in the Representation of Subjective Probabilities (Adapted from Allais, 1979, figure 6, and Kahneman and Tversky, 1979, figure 4)

The effect that Allais attaches to the distortion of probabilities is instead seen by Prospect Theory as reflected on the distortion of the value of outcomes, which explains Prospect Theory's distinctive shape of a value function that is convex and steeper in the domain of losses and concave and flatter in the domain of gains (see Figure 15B). On the other hand, the weighting function of Prospect Theory assumes the existence of a function $\pi(p)$ that multiplies the value of the outcome. Although inferred from choices between prospects as in the case of subjective probabilities, this weighing function does not appear to obey the main probability axioms.²⁹¹ Consequently, it may not be interpreted as a measure of degree or belief. If Allais' subjective distortion of probabilities is considered separately from the subjective distortion of the value of prospects,

²⁹¹ Kahneman and Tversky recognize that these decision weights differ from probabilities in the sense that they do not obey the probability axioms; consequently, they should not be interpreted as measure of degree or belief. According to the authors, decision weights are always likely to be smaller than the probability assigned to an outcome, and only coincide with such a probability if the expectation principle holds. Thus, the authors conclude that "decision weights measure the impact of events on the desirability of prospects, and not merely the perceived likelihood of these events" (Kahneman and Tversky 1979, 280).

then the symmetry observed in the case of the reflection effect may be represented in the shape that he attributes to the subjective distortion of the probability.²⁹²

The limitations resulting from the asymmetry of Prospect Theory's weighting function, and the evidence of an underlying reflection effect present in the perception of an outcome's probability, leads to the formulation of Palpatational Rationality's general function. This function equally focuses on the subjective distortion of an outcome both with respect to the perception of its value and its occurrence. In this sense, the portion of the integrative function of Palpatational Rationality that refers to an outcome's probability measures the subjective distortion in the perception of an outcome's occurrence instead of using a weighting factor.²⁹³

Allais' function of subjective probability expresses a general principle abstracted from empirical observation that reflects the varying levels of perception of probabilities between people with different attitudes regarding risk.²⁹⁴ This distortion is associated with observations of the reflection effect that Prospect Theory assigns instead to the value component of the function, involving a reverse of signs of the outcomes from gains to losses. Accordingly, risk aversion in the positive domain is accompanied by risk seeking in the negative domain (Kahneman and Tversky 1979, 268). This is an effect that Allais observed in the subjective distortion of the probability of an outcome, according to which individuals may overestimate small probabilities of a gain, or underestimate small probabilities of a loss. Conversely, individuals may underestimate high probabilities of a small loss, while overestimating small probabilities of large gains or losses

²⁹² As seen before, Kahneman and Tversky reported cases of such symmetry when reversing the signs of the outcomes from gain to losses in prospects incorporating the certainty effect, as well as in its extensions to different prospects offering possible gains or losses (Kahneman and Tversky 1979, 268).

²⁹³ Given its reliance on Allais' function for the distortion of objective probabilities, this integrative general function appears to better preserve the symmetric property that captures the reflection effect produced by reversing the signs of an outcome's occurrence from the probability of a gain to the probability of a loss. Consequently, the subjective value function of Palpatational Rationality uses a modified form of Allais' function to represent the subjective distortion of an outcome's probability; the same measuring pattern used for the part of the function that refers to value.

²⁹⁴ As described above, Allais developed the probabilistic element of his subjective function on the basis of the general axiom that gambling individuals differ from those who are prudent in the way in which they distort objective probabilities (Allais and Hagen 1979, 48).

alike (Allais and Hagen 1979, 48).²⁹⁵ Following Allais's and Prospect Theory's model, Palpatational Rationality proposes a function for the distortion on the perception of an outcome's probability which is exponential on the domain of losses and logarithmic on gains. This representation preserves the general principle of overestimating the probability of gains and underestimating the probability of losses, as Figure 16 shows.

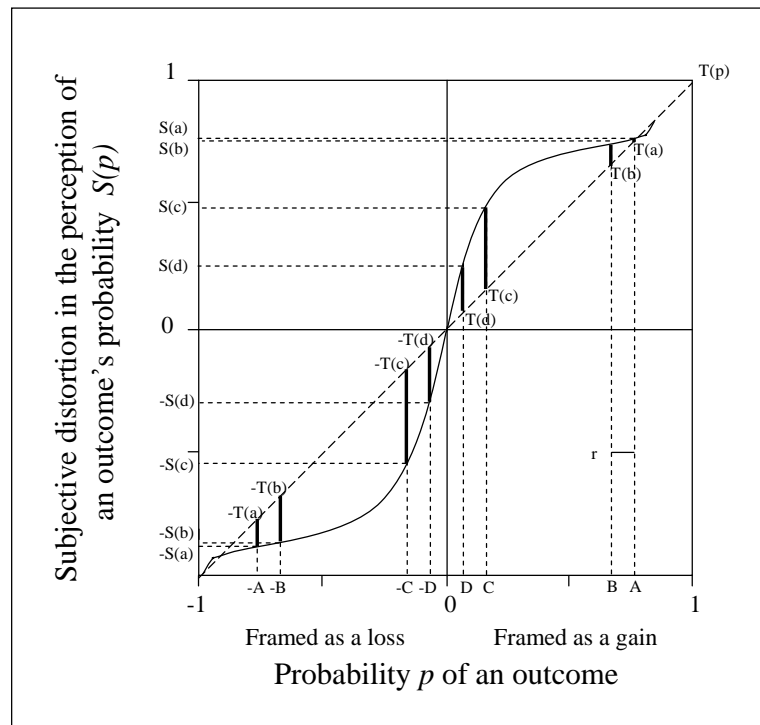


Figure 16. Palpatational Rationality's Function of the Subjective Distortion in the Perception of an Outcome's Probability
(Data partially from Allais, 1979, p. 50, and figure 6)

Palpatational Rationality's modification of Allais' and Prospect Theory's functions expresses the subjective distortion on the perception of an outcome's probability that seems counteracted by the integral corrective effect of the Sublime Palpation of Christian Freedom.²⁹⁶ The

²⁹⁵ Allais further supports this general observation with the manifestation of the subjective distortion of the probability regarding the distribution and the dispersion of psychological values, both of which are mainly related to the pleasure or aversion inherit in taking a risk, as shown in Figure 9, p. 205 (Allais and Hagen 1979, 52).

²⁹⁶ As seen in Figure 16, the same probability of an outcome can be represented in terms of a loss or gain with substantial differences resulting from the distortive effect of innate feelings. When framed as a loss, the probability of an out-

subjective probability function of Palpational Rationality captures a relative effect according to which the distortion of the probability is larger in the case of losses than in the case of gains.²⁹⁷ Additionally, the subjective function of Palpational Rationality reflects the irregular behavior at the edges that has also been reported by Allais, and by Kahneman and Tversky, as discussed in detail earlier.

The evidence discussed in chapter 3 that focuses on a singularity corresponding to the beginning of the universe also points toward the beginning of the causal chain that interconnects each event. The evidence in favor of the existence of such a singularity seems to support a relative form of chance expressed in the probability of events. This probability reflects the limited capabilities of individuals to perceive the absolute dimension of an outcome's occurrence, or certainty, given the placement they have in this universal chain of causation.²⁹⁸ Thereby, chance appears to have a relative nature that is associated with the innate human incapacity to perceive the certainty of each event within the causal chain. Similarly, the formulation of the somatic-marking effect presented in chapter 2 underscored the imprint attributed to innate and self-centered preferences of pleasure seeking and pain avoidance. These effects seem to account for

come corresponds to the domain of the function where $p < 0$; while $p > 0$ when the same probability is instead framed as a gain, in concordance with the empirical observations of the reflection effect. Consequently, when probabilities are framed as losses, a marginal change r expressed by reducing the probability of a loss from $-A$ to a $-B$ corresponds to a smaller change in the underestimation resulting from the subjective distortion $-S(a)$ to $-S(b)$. This is observed by the length of the segments from $-S(a)$ to $-T(a)$ and of $-S(b)$ to $-T(b)$. Furthermore, the same marginal change r of reducing the loss-framed objective probability from $-C$ to $-D$ is associated with a relatively larger subjective underestimation of the probability from $-S(c)$ to $-S(d)$, as also observed by the relatively larger length of the segments from $-S(c)$ to $-T(c)$ and from $-S(d)$ to $-T(d)$. The opposite effect is observed for the same marginal change r of the objective probability when framed as a gain, for this is conversely overestimated for small probabilities. This is shown in Figure 16 by the marginal change in the distorted subjective perception of this type of probability represented by the length of the segments between $S(d)$ and $T(d)$ and between $S(c)$ and $T(c)$. Likewise, the overestimation or distortion in the subjective perception of the probability is smaller when the same relative change refers instead to larger objective probabilities of gains, in concordance with Allais' observations.

²⁹⁷ The length of the segments between the curve $S(p)$ and the function of perfect proportionality $T(P)$ are respectively larger in the domain of losses than in gains, in line with the observations that Prospect Theory assigns instead to the perception of the value of an outcome. This subjective probability function also conveys the general property of risk seeking for probabilities framed as a loss, and risk averting for the same probability framed as a gain, which corresponds to its steeper slope for any value of $p < 0$, and less steep for any value of $p > 0$.

²⁹⁸ In absolute terms, each event has a certainty that seems to correspond to its location in the finite chain of causation but given the limited capabilities of individuals to perceive such certainty, a relative notion of chance related to each outcome persists.

the subjective distortion of the perception of the probability of an outcome as described in Figure 17.²⁹⁹

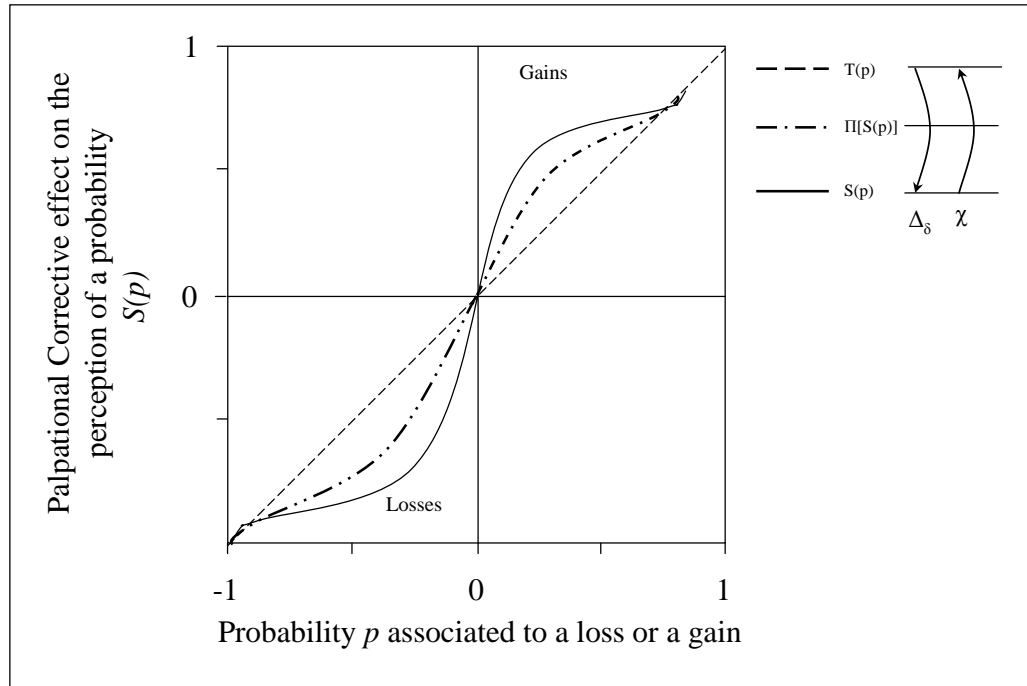


Figure 17. Palpational Effect on the Subjective Distortion of the Probability of an Outcome

In line with the description provided in chapters 3 and 4, the supra-somatic effect attributed to the Sublime Palpation seems to reduce the distortion in the perception of the objective probability caused by the somatic marking of innate feelings and preferences. In this manner, the Sublime Palpation of Christian Freedom is said to progressively enable the perception of the objective probabilities of uncertain events. This capability seems to be of paramount importance for

²⁹⁹ As Figure 17 shows, the somatic-marker effect corresponds to the distorting incidence that the factor Δ_δ has on the perception of the probability of an outcome, as detailed in chapter 2. This effect is represented by the level of departure of the subjective probability function $S(p)$ from the perfect proportionality function $T(p)$. In contrast, the supra-somatic imprint of the Sublime Palpation of Christian Freedom refers to the existence of a corrective factor χ producing the opposite effect of restoring the capacity to perceive the objective probability of prospects, as discussed in chapter 3 and 4. This results from its supra-somatic predominance over the somatic-marking effect of innate feelings. The corrective factor χ affects the curvature of the function $S(p)$, transforming it into the $\Pi(S(p))$ function, which expresses the supra-somatic effect attributed to the Sublime Palpation of Christian Freedom on the perception of the probability of outcomes. This corrective effect allows the subjective function $S(p)$ to progressively approach the function $T(p)$ that represents the subjective perception of the probability of an outcome without distortion, or where $\Delta_\delta = 0$.

making optimal choices within the most complex social and moral situations.³⁰⁰ The supra-somatic effect that seems distinctive of the Sublime Palpation of Christian Freedom refers to the function $\Pi(S(p))$, which captures the effect of the corrective factor X on the function of the subjective perception of the probability of an outcome $S(p)$; making this factor progressively approach the perfect proportionality of the function $T(p)$.³⁰¹

The subjective probability of individuals in the context of risky decisions appears to comprise two main types of distortions in the perception of the objective probabilities of outcomes. The first refers to the distribution of the probability itself, while the second to the dispersion of the distribution. The difference with respect to the point of comparison of the objective probability distribution seems to define the preferences of an individual either as prudent or imprudent in the context of specific risky choices.³⁰² The model of comparison proposed here allows for the expression of renewed and unrenewed individuals with respect to the distribution of the function and its density's dispersion. In the case of the subjective distribution, optimal behavior regarding the perception of probabilities can be expressed by the different placement assigned to the mean of the distribution.³⁰³ Abstracting from the dispersion of the distribution, Figure 18 shows this differential effect in the subjective distortion of the standard of comparison that corre-

³⁰⁰ Figure 17 shows the integral distortive effect Δ_δ on the subjective perception of the probability of an outcome, making it deviate from the line of perfect proportionality $T(p)$. Such a distortive effect is captured by the function $\phi(x)$, according to which:

$\phi(T(p)) = S(p)$ where $p \neq S(p)$ (Integral distortive effect of Δ_δ)

Equation 5-16. Integral distortive effect on the perception of an outcome's occurrence

³⁰¹ Formally, we have,

$\Pi(S(p)) \rightarrow T(p)$ (Corrective effect of X)

Equation 5-17. Palpational corrective effect on the perception of an outcome's occurrence

³⁰² As detailed earlier, this understanding of subjective probabilities follows Allais' model, which compares distributions and dispersions among individuals. According to Allais (1979, 52), the main factor determining the difference between the behavior of prudent and imprudent individuals is the dispersion of the subjective distribution's density, considering the distribution of the former more prone to express less dispersion than the latter (Figure 9, p. 205).

³⁰³ Regarding gains, unrenewed individuals tend to have distributions with means located further to the right of the objective distribution than prudent ones. This outcome results from the larger incidence that somatic markers related to pleasure-seeking feelings seem to have on the unrenewed with respect to the renewed decision maker. In the case of losses, unrenewed individuals tend to manifest distributions whose means are located further to left of the objective distribution. This seems to result from the larger somatic-marking effects produced by strong pain-avoidance feelings like on the subjective perception of probabilities.

sponds to the probability distribution of an outcome of unrenewed and renewed individuals. Hence, in cases of the subjective perception of a probability, the stronger somatic effect of unrenewed individuals can induce them to express extreme distortions of the objective probability, while the opposite effect seems present in the renewed as a result of the corrective supra-marking imprint of the Sublime Palpation of Christian Freedom.

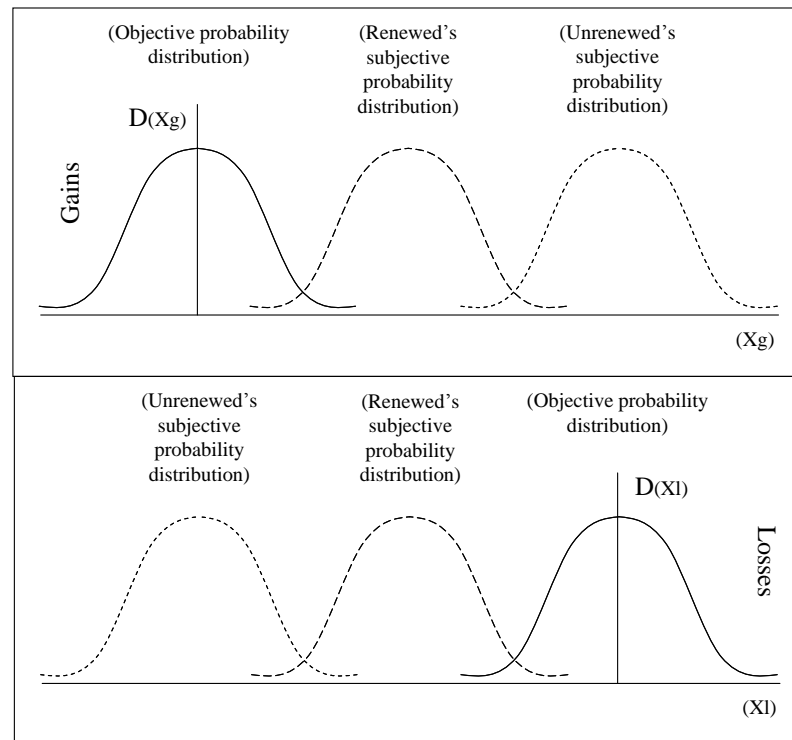


Figure 18. Differences between the Unrenewed and Renewed Distributions for Gains and Losses, Abstracting from the Respective Dispersion of the Functions

The second type of distortion refers to Allais' differences concerning the dispersion of the distribution, which are also taken into consideration by Palpational Rationality.³⁰⁴ In the case of the unrenewed, this distortion seems to lead individuals to perceive the probability of the occurrence of a particular gain as one with very low dispersion. Conversely, the relatively stronger

³⁰⁴ Based on the model represented by the modification of Allais' function of objective probability distortions (Figure 16, p.227), the distribution of the unrenewed is less dispersed than that of the renewed in the case of gains. This appears to emerge from the distortion of the objective probability distribution determined by the level of somatic-marking of pleasure-seeking feelings.

supra-somatic marking effect attributed to the Sublime Palpation appears to make renewed individuals perceive such dispersion in levels that progressively approach the dispersion of the objective distribution. In the case of losses, the somatic-marking effect of fears, or pain-avoiding feelings, seems to lead the unrenewed to distort the true distribution by perceiving much higher levels of dispersion than normal concerning a loss. This contrasts with the view of the renewed, who under the supra-somatic marking effect of the Sublime Palpation of Christian Freedom seem able to progressively perceive the dispersion closer to that of the objective distribution (Figure 19).

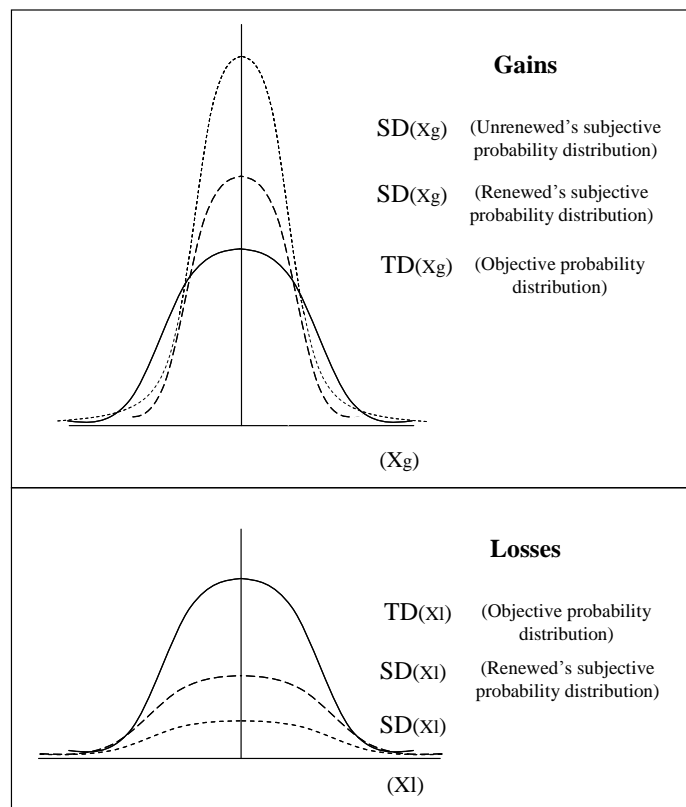


Figure 19. Differences between the Unrenewed and Renewed Dispersions for Gains and Losses, Abstracting from the Location of the Mean in the Respective Distributions

The general model of Palpational Rationality integrates a normalized version of Bernoulli's function regarding the subjective distortion of value with a modified version of Allais' and

Prospect Theory's functions on the distortion of the probability.³⁰⁵ This integrative model reflects onto the plane of decision making the liberating effect that the Sublime Palpation of Christian Freedom seems to have on the enslaving influence of innate feelings and their dependant preferences.³⁰⁶ As discussed in chapter 4 based on the analysis of Calvin's *Institutes*, this forms the core of the effect attributed to Christian Freedom on decision making and on the formation of preferences indispensable for social, institutional, and economic development. In general terms, this is the effect at the core of the Protestant Ethic of Development.

The system of innate preferences expressed through the marking effect of innate human emotions has been at the basis of the formulations regarding the subjective valuation of random prospects both concerning their value and the probability of their occurrence.³⁰⁷ The disputation of the underlying assumptions used to describe the effect of emotions on reasoning suggests the adoption of another factor in the general equation of subjective valuation used for decision making under risk. A factor that accounts for the evidence of a finite universe, which not only allows the "true sensation of freedom," but marks choices that are cogently superior to those ordinarily determined by unchecked innate emotions. This factor seems to correspond to the effect of Christ's Freedom on subduing the innate propensity of innate emotions based on self-interest, which have the power to enslave "weaker impressions" as Hume noted. Based on the subduing

³⁰⁵ In this sense, the distortive effect that authors like Hume assigned to violent passions in the process of reasoning and decision making is combined with the empirical evidence provided by current discoveries of the neurobehavioral sciences. These discoveries support the imprint that the Sublime Palpation of Christian Freedom seems to have on the perception of the value and occurrence of outcomes.

³⁰⁶ This corrective effect is represented by the factor X, which in the context of the function $\Pi(x,p)$, expresses the Corrective Palpational effect of the Sublime Palpation both on the function of the subjective perception of an outcome's value or utility, and of the subjective perception of its occurrence. Accordingly, this corrective palpational effect enables both functions to approach the objective function of the value and occurrence of the outcomes, which may be expressed in the following terms:

$$\Pi(U(x), S(p)) = \sum_i X(U(x_i) * S(p_i)) \quad (\text{Corrective Palpational effect of } X)$$

Equation 5-18. Palpational corrective effect X on the combined perception of the value and occurrence of an outcome

³⁰⁷ As we have seen in chapter 2, these innate preferences correspond to the somatic perception of images related to pleasure and pain, which seem to move individuals to consider certain prospects as desirable (risk seeking) or unpleasant (risk averting). This framework appears to account for a system of cognition in which there is only an "illusion of freedom," and consequently sub-optimal choices.

effect that the Sublime Palpation of Christian Freedom appears to produce, pleasure seeking and pain averting emotions that commonly distort the subjective perception of outcomes can be overcome by the corrective and liberating effect of this “sense of freedom,” which forms the basis of Palpational Rationality’s decision-making model.

In this general context, the inclusion of the somatic and supra-somatic marking effects imparts to the decision model of Palpational Rationality a dual descriptive and normative nature. In its descriptive dimension, the model seems to capture the process of decision making performed by the unrenewed human nature according to the somatic-marking effect of innate emotions. The inclusion of the supra-somatic marking effect seems to further complement the descriptive attributes of the model by integrating into a more complex framework of decision analysis the corrective effect attributed to the Sublime Palpation of Christian Freedom in progressively overcoming somatic distortions on the perception of the value and occurrence of outcomes. Given their importance in the formation of preferences indispensable for development, the next chapter offers a neurobehavioral evaluation of these critical marking effects on processes of reasoning and decision making.

6 Future Research Directions: the Neurobehavioral Dimension of Palpatational Rationality

The inclusion of recent behavioral and neurobiological evidence into the understanding of decision making has partly confirmed the role that Hume had assigned to “passions” in reasoning. This evidence has also underscored the crucial role that meta-somatic images of body states seem to have on these processes. As chapters 3 and 4 explain, Palpatational Rationality comprises the supra-somatic effect that the palpation of the Sublime Image has on decision making, in accordance with the liberating effect of the Principle of Christian Freedom. The concept of the Sublime Palpation distinctive of this Principle underlies the cognitive system proposed in this dissertation to understand the developmental effect of Protestant beliefs and emotions on complex decision-making processes. This forms the basis of the Supra-somatic hypothesis presented in this chapter as the main element of its plan for future research. These new directions of inquiry seek to assess the neurobehavioral dimension of Palpatational Rationality as a decision-making model that aims to explain the micro-level processes associated with the Protestant Ethic of Development.

In the context of this emerging multidisciplinary dimension of study, different neural systems in charge of diverse forms of decision making have increasingly become the subject of intense examination; particularly those involved in the most complex processes of social reasoning.³⁰⁸ Within these emerging fields of study, special attention has been directed towards the most complex realms of personal and social decisions that involve the teleological dimension of good judgment informing optimal decision making.³⁰⁹ This nuanced dimension imposes actions that are

³⁰⁸ Gardner (1993) explores in his theory of multiple intelligences the complexities of the decision-making processes that inform what he calls “social intelligence,” in contrast with other forms of “multiple intelligences” such as those involved in mathematical reasoning.

³⁰⁹ As Damasio argues, deciding well in the personal and immediate social domain poses the most complex and uncertain challenges for individuals because survival and the quality of their lives depend on cogent decisions (Damasio 2005, 169-170).

beyond those of mere survival, but that qualify such survival in individual and in collective terms as “good.” In this respect, the understanding of the micro-level processes involved in cogent decisions associated with subjective well-being (SWB) presents the greatest complexities to understanding an individual’s decision-making capabilities. To explore the relationship between emotions, beliefs, and decision making, this dissertation focuses on the role that certain emotions can play in the cognitive processes that seem to determine the developmental factors implicit in individual and social preferences. The neurobehavioral investigations surveyed in this chapter stress the distinctive effect attributed to somatic and meta-somatic emotions on rationality and decision making. These studies may signal a departure from traditional decision-making models of Rational Choice as described in the preceding chapter.³¹⁰ These studies seem to underscore the fundamental role of different types of emotions in the most complex social and moral decision-making processes; a perspective that is at the core of the alternative decision-making model of Palpatational Rationality.

6.1 Inclusion of Neurobehavioral Evidence into Decision-Making Models

The integral approach to studying the effect of emotions on decision making has been facilitated by recent works exploring both the hindering and aiding effects of these impressions. The first aggregation of studies highlighted the maladaptive effects of emotions as sources of unwanted bias. The second aggregation of research focused on the aiding role of emotions on decision making. The third branch of studies stressed the role that pleasant and unpleasant emotional states can have on information processing.

³¹⁰ Exploring similar findings in social, cultural, and biological psychology, Haidt (2001) proffers the hypothesis that moral reasoning does not cause moral judgment. Instead, he brings evidence to support the argument that moral reasoning is usually a post hoc construction, generated after a judgment has been reached. Haidt’s social intuitionist model presents an alternative to rationalist models, deemphasizing forms of private reasoning conducted by individuals, and underscoring instead the importance of social and cultural influences.

The first group of studies that comprises the maladaptive effects of emotions constitutes the focus of the works of Slovic (2002) and Shiv (2005). Three main areas of empirical evidence have developed in assigning a hindering role to emotions during the process of decision making. The first research set focused on the negative role that emotions appear to play in brain functions associated with the retrieval of information relevant to decision making.³¹¹ The second group suggests a pervasive role of emotions in social judgment.³¹² The third cluster of studies explored how emotions could bias individual choices.³¹³

The second aggregation of research that focuses on the aiding role emotions appear to have on decision making started with Damasio's seminal work (1994) examining the effects of emotions on attention and allocation of working memory.³¹⁴ Also within this group, a number of studies have explored the positive effect emotions can have on selecting and prioritizing choices.³¹⁵ Similar research has been followed by Raghunathan and Pham (1999), who have focused on the motivational influences of anxiety and sadness on decision making. Finally, a third branch within this second cluster has highlighted the role that pleasant and unpleasant emotional states can have on information processing. In the first case, Murray et al. stressed the influence of mood on categorization (1990), while Ashby et al. developed a neuropsychological theory of positive

³¹¹ Research has demonstrated the effects of mood on category accessibility and inference (Erber 1991); on emotional memory systems (LeDoux 1993), and on the recall effect (Mayer and Hanson 1995).

³¹² This line of research is characteristic of the works of Forgas (1995; 1987) on the effect of mood on person-perception judgments, or the "Affect-infusion Model." Similarly, the dimension of social judgment impairment has been explored by Johnson and Tversky (1983) on affect, generalization and the perception of risk, and by Mayer et al. on mood congruence (1992).

³¹³ Gray's work on short-term thinking in threat-related negative emotional states (1999) is representative of this exploration of biases of emotions on individual choices, as well as the study of Shah et al. on the consequences of goal shielding (2002).

³¹⁴ Further advancing this area of research, Kitayama demonstrated an affective influence on perception and comprehension (1997; 1994), while Wells and Matthews (1997; 1994) investigated the effect of emotions on attention from the clinical standpoint.

³¹⁵ Katelaar and Clore showed the proximate effects and ultimate functions that emotions can play on reason (1997), and Schwarz and Clore advanced extensive research on the informational and motivational functions of affective states (1986; 1983).

affection and its influence on cognition.³¹⁶ Likewise, several studies have addressed the effects of unpleasant emotional states.³¹⁷

In keeping with the previous studies stressing the beneficial and detrimental effects of emotions on decision making, a third set of studies has emphasized under the name of Emotional Intelligence the effects that social and culturally acquired preferences have on emotion regulation.³¹⁸ The essential role that preferences of cultural or social source may have on affective influence regulation has been underscored by Forgas (2000) in his pioneering work on the development of a Dual-Process Theory of spontaneous mood regulation. Following the same line of research, Gohm addressed these effects on mood regulation within the context of emotional intelligence (2003). Likewise, Smith et al. addressed the importance of these factors in the context of managerial behavior (2002). More recently, different studies have stressed the importance of culturally and socially acquired preferences as a means to regulate the effects of emotions on decision-making processes (Extremera and Fernández-Berrocal 2006; Zeidner, Roberts, and Matthews 2004).

The recent neurobehavioral investigation of brain states related to decision-making processes opens new vistas to understanding the unexplored interconnection between beliefs, emotions, and reasoning on designing public policy. In this sense, Damasio, one of the most important neuroscientists advocating such integration, urges establishing a two-way bridge through which to

³¹⁶ In this same context, Isen et al. showed the influence that emotions seem to have on creative problem solving (Isen, Daubman, and Nowicki 1987).

³¹⁷ The effortful processing effect of emotions has been documented by researchers like Conway and Giannopoulos with their work on dysphoria and decision making (1993); by Leone et al., in their studies on the influence of anticipated emotions on action evaluations (2005), and by Edwards and Weary, in their work on depression and piecemeal processing (1993). Sinclair has researched the effect of mood and performance appraisal on the ordering of information (1988). Harkness has studied dysphoria's effect on the enhanced accuracy of mental states decoding (2005). Monroe et al. have described the relation between depression and post-decision regret (2005). Elsbach and Barr have explored mood and its influence on individuals in the context of structured decision protocols (1999).

³¹⁸ The notion of Emotional Intelligence was first coined by Salovey and Mayer, who defined it as the skills "relevant to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feeling to motivate, plan, and achieve in one's life" (Salovey and Mayer 1990, 185). Within the limits of decision making and leadership, George affirmed that Emotional Intelligence "taps into the extent to which people's cognitive capabilities are informed by emotions and the extent to which emotions are cognitively managed" (George 2000, 1033-1034).

explore the threads that interconnect neurobiology to culture (Damasio 2005, xiv). At the core of this novel integration between the social, political, behavioral and neurobiological sciences is the recognition that civilization and culture are in essence social products. Thus, the establishment of this complex relationship demands not only the traditional recourse to the disciplines of the social sciences but also their integration with the methodologies of the behavioral and neurobiological sciences (Damasio 2005, 124).

Using a similar perspective to this dissertation's multidisciplinary approach, Quartz has recently observed that the long tradition of research in judgment and decision making (JDM) has evolved to incorporate emotional processes influenced by the reconsideration of emotions in neuroscience (Quartz 2009, 209). Quartz observes that JDM research in the social and political sciences has been historically dominated by a logical-inference approach based on means-end reasoning and cost-benefit decision-making processes. This derived from the influence of choice or preference theory in microeconomics (von Neumann and Morgenstern 1944) and decision theory in philosophy (Jeffrey 1983). Given this tendency, Quartz underscores the emergence of a multidisciplinary approach integrating the humanities, social and political sciences, and neurobiology within the most recent and innovative research on JDM models.³¹⁹ Cohen³²⁰ and Lerner³²¹ also advocate this multidisciplinary approach at Princeton University's Center for the Study of Brain, Mind and Behavior, and at the Decision Research Laboratory of Harvard's Kennedy School of

³¹⁹ Quartz has highlighted the importance of multidisciplinary approaches like the one used in this research. A similar methodology integrating humanities, social sciences and neurosciences is distinctive of the research he is advancing as director of the "Brain, Mind, and Society Ph.D. Program" at the California Institute of Technology. As Quartz observes, the main objective of this Program is to provide "innovative, interdisciplinary training opportunities to prepare a new generation of scientists with both the analytic foundations and the experimental skills needed to pursue careers at the intersection of neuroscience and the social sciences" (California Institute of Technology 2009).

³²⁰ Cohen is co-director of the Center for the Study of Brain, Mind, and Behavior (CSBMB), whose fundamental goal is to establish an integrated continuum of research on the relationship of brain and mind. In pursuing this scientific mission, "the CSBMB embraces a multi-disciplinary, multi-methodological, and multi-institutional approach that draws on expertise and advances in mathematics, physics, chemistry, molecular biology, neuroscience, and psychology" (Princeton University 2009).

³²¹ Lerner is co-founder and director of the Harvard Decision Science Laboratory at the Kennedy School of Government, an institution that "draws on psychology, economics, and neuroscience to study social and emotional influences on human judgment and decision-making" (Harvard University 2009).

Government, respectively. Thus, the neurobiological reconsideration of emotions advanced by neuroscientists like Damasio (2005; 1991; 1994) has contributed to the reincorporation of emotions within theories of decision making, as observed in the works of Koenigs (2007; 2007), Loewenstein (2006; 2001), Sanfey (2006), Shiv (2005; 2005), Finucane (2000), and Mellers (1999).

In this context, Palpational Rationality encompasses a fourth perspective that focuses on the corrective effect that seems determined by supra-somatic impressions like the Sublime Palpation of Christian Freedom on complex processes of social and moral decision making underlying cogent public policy design and implementation. As described previously, this corrective effect is manifested with respect to the subjective distortions that innate feelings appear to produce on the perception of the value, entity and occurrence of outcomes. In keeping with the basis of the Protestant Ethic of Development, chapter 4 suggests that this corrective effect results from the liberating effect of the Sublime Palpation of Christian Freedom, instead of the psychological sanctions and anxiety that Weber attributed to the notion of Predestination. The neurobehavioral dimension of Palpational Rationality offers an explanation of the different set of individual preferences at the micro-level that are associated at the macro-level with increased outcomes related to political and economic development. In line with the evidence provided in chapter 1, this fourth formulation proposes a hypothesis to explain the micro-level processes through which the “sense of freedom” characteristic of individuals in countries of Protestant inheritance is associated with higher levels of economic and institutional development. Accordingly, the next section establishes the general background that allows for an understanding of the structures and processes involved in complex neurobehavioral systems associated with decision making. This survey sets the stage for understanding the main hypotheses that describe these processes in light of

emerging neurobehavioral evidence, as well as defining the specific dimension and contributions of an alternative hypothesis based on Palpatational Rationality.

6.2 Structural and Functional Dimension of Neural Systems Involved in Emotions, Reasoning and Decision Making

Cells of the nervous system aggregated in the different circuits form structural subsystems that are used to establish neural and chemical connections with the rest of the body.³²² Circuits and components are grouped together into relatively independent structural and functional mechanisms such as the sensory and motor systems that connect to other regions only at the highest levels of processing. The exception are systems such as the limbic, which controls emotions, learning and memory and whose circuits and components are highly integrated from the start.³²³ The complexity of parts and circuits that are interrelated from the beginning, complicates the study of these systems from a structural perspective; making more sense to refer to these systems from a functional point of view (Martin 2003, 377-378). Nevertheless, for the purposes of providing a synoptic overview of these complex structures, Figure 20 summarizes the organization of the nervous system from a micro and a macro perspective.

³²² Through neural circuits, the central nervous system is connected with the peripheral nervous system through sensory and motor nerves that carry signals from every part of the body. Chemically, the central nervous system is connected to the rest of the body by biochemical circuits that carry chemical signals such as hormones, neurotransmitters, and modulators that are released through the bloodstream (Damasio 2005, 26, 87).

³²³ Etymologically deriving from the Latin “limbus” for “border,” the limbic system structures are at the border between the subcortical nuclei and the cerebral cortex as described in detail below.

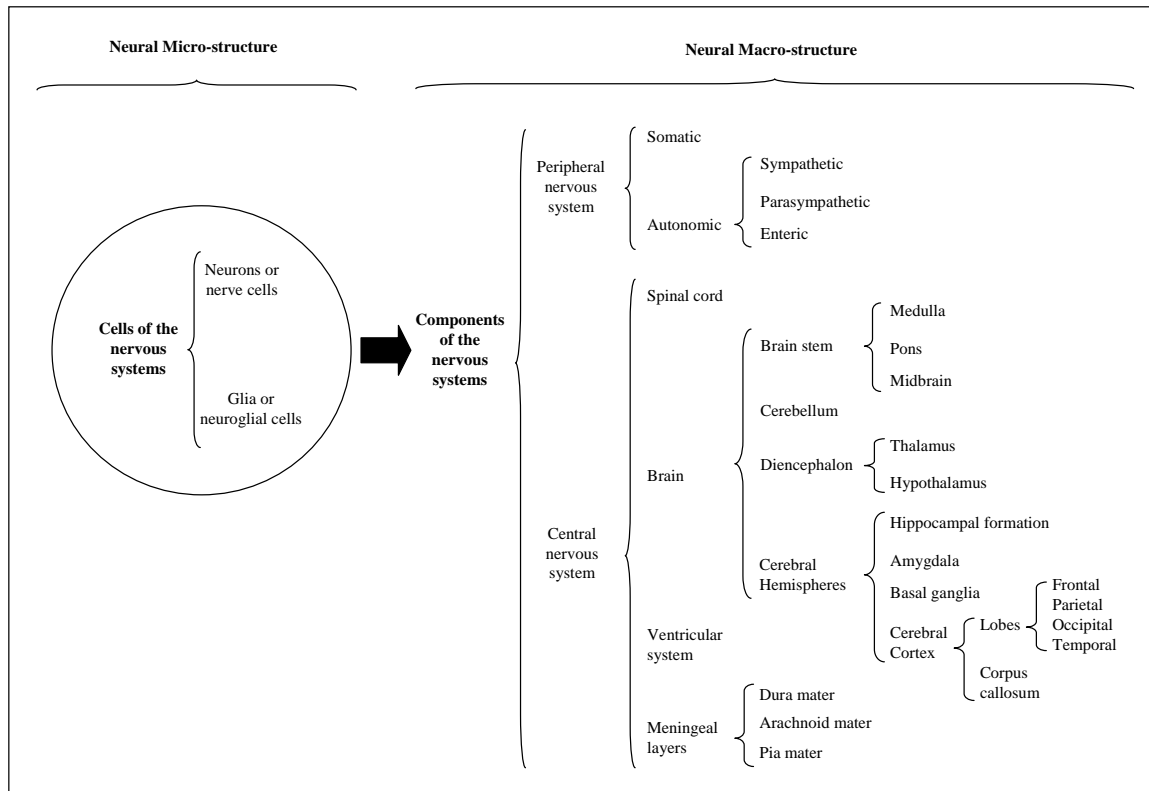


Figure 20. Outline of the Micro- and Macro-Structure of the Nervous System
(Data from Martin, 2003)

As Figure 20 shows, the main subcortical structures of the limbic system are the hippocampal formation and the amygdalae, which receive their major inputs from the other important component of the limbic system: the limbic association cortex. The hippocampal circuits intervene in the consolidation of explicit or declarative memories (conscious recollection of facts), and in forming spatial memories. As seen in Figure 21, the amygdala circuits are preferentially involved in emotions and their behavioral expressions according to the information that the amygdala receives from the cortical association areas (Martin 2003, 379).

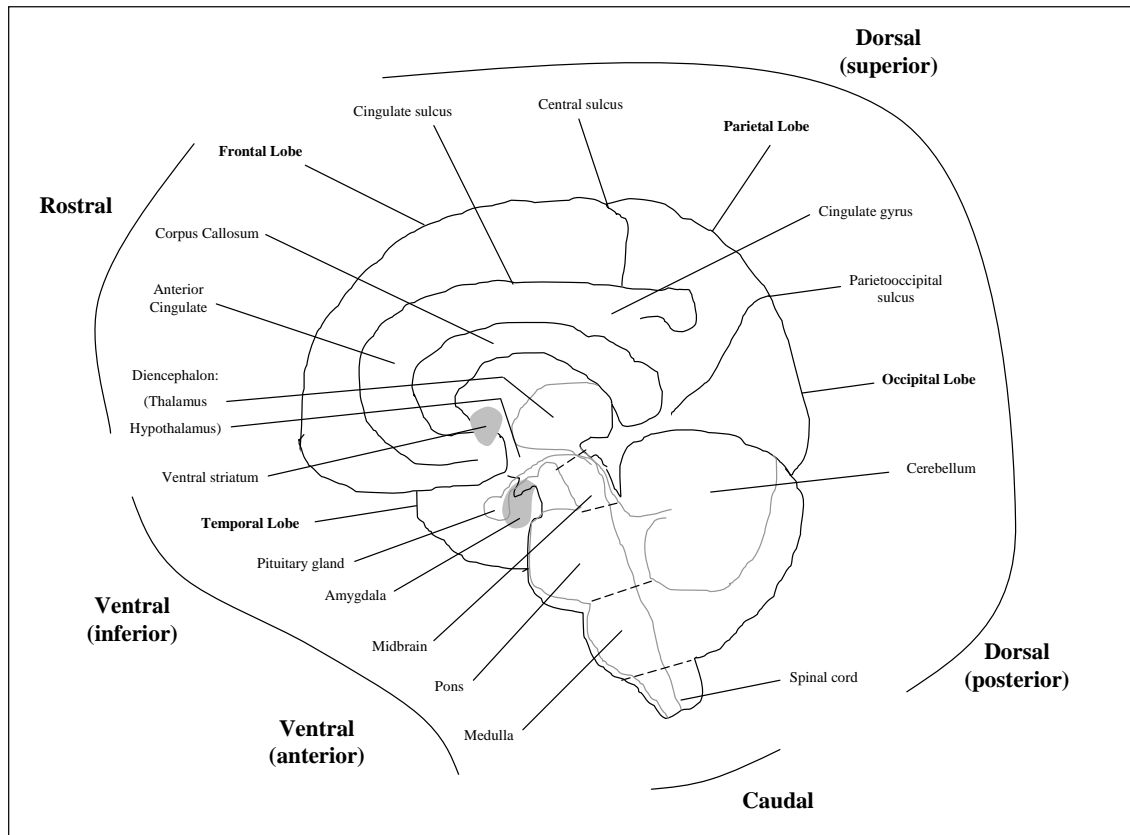


Figure 21. Structure of the Central Neural System
(Adapted from Martin 2003, figures 1-8, 1-9B, 1-13).

The limbic association cortex is located on the medial surface of the frontal, parietal and temporal lobes, and comprises three major cortical association areas: the parietal-occipital area; the prefrontal association cortex, and the limbic association cortex (see Figure 22). The latter receives information from the higher-order sensory areas and from the two other cortical association areas, and conveys this information to the amygdala and the hippocampal formation. When perceiving a danger, the information that the association cortex receives from the visual paths is conveyed to the amygdala in order to generate the relevant feeling, and overt behavior associated with the danger as well as to coordinate a response. Moreover, the information that is sent to the hippocampal formation is considered relevant for learning the complex environmental settings associated with the danger now recognized (Martin 2003, 381-382). In its highly integrated neural

connections, the structures of the limbic system also interrelate densely with the three effector systems for the behavioral expressions of emotions: the endocrine system, as in the case of the influence that the limbic system has in pituitary hormone segregation; the autonomic system, whose nuclei are stimulated by the amygdala, and the somatic motor systems, which under the actions of the limbic system determines the overt behavioral signs of emotions such as fight or flight reactions (Martin 2003, 388-389). In addition to the interconnected actions of different parts of the brain stem, integrated systems also require neurons that use particular neurotransmitters important for human behavior. Different from the sensory and motor systems that use special types of neural connections, the integrative systems that control motivation, arousal, or facilitation of learning and memory make use of diffuse-projecting neurons. The four relevant diffuse-projecting neurons vary according to the four main types of neurotransmitters: acetylcholine, dopamine, noradrenalin and serotonin.³²⁴

³²⁴ The neurons containing acetylcholine located in the basal forebrain augment the excitability of cortical neurons, especially in association areas: their degeneration is associated with Alzheimer's disease. The neurons of the dopaminergic system mainly located in the midbrain strongly influence organizing behavior and planning actions. An exaggerated dopamine response in the nucleus accumbens can lead to prefrontal cortex dysfunction, which is a key region for organization of thoughts and behavior. Additionally, the degeneration of this type of cells is also associated with Parkinson disease. Present in different brain stem nuclei, the noradrenergic neurons play an important role in the response of the brain to stressful stimuli, particularly those that evoke fear; its degeneration is associated with depression, panic attacks and anxiety disorder. Finally, the diffuse-projecting neurons that make use of serotonin are mainly located in the raphe nuclei of the rostral pons and midbrain, and give rise to the ascending projections that are involved in the transmission of information about pain, and in the regulation of mood. Its degeneration is mainly associated with mood disorders, including anxiety and obsessive compulsive disorders (Martin 2003, 29-32, 389).

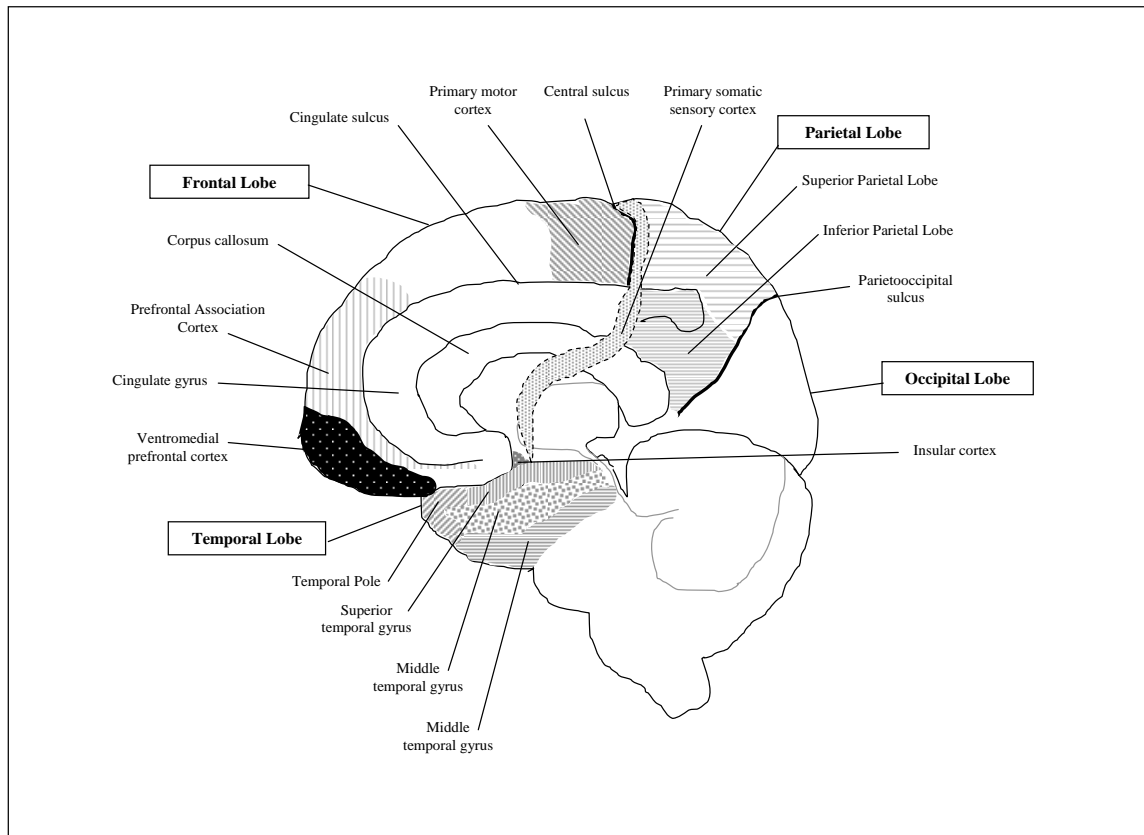


Figure 22. Selected Brodmann's Cerebral Cortex Regions
(Adapted from Martin 2003, figure 2-16).

The subcortical structures and circuits of the limbic system closely interact with those of the limbic association cortex in the integrative system that controls the perception of emotions as well as memory and learning. Different from its previous understanding, the apparatus that controls rationality is not independent from the apparatus that regulates emotions and human behavior. According to Damasio, the same systems that are involved in reasoning and decision making are also involved in emotion and feeling because reason and emotions converge in the ventromedial prefrontal cortices and in the amygdala (Damasio 2005, 70).³²⁵ Damage to the orbitofrontal

³²⁵ This characteristic attribute of the integrative system has been recently confirmed in the studies of Ongur (2000), who reviewed the architectonic subdivisions and connections of the orbital and medial prefrontal cortex (OMPFC), finding a sensory-visceromotor link that appears to be critical for the guidance of reward-related behavior and for mood setting. Likewise, Rolls (2000) found that the orbitofrontal cortex (and the connected subgenual cingulate cortex) are activated by pleasant touch, by painful touch, by rewarding and aversive taste, and by odor.

cortex in humans can impair the learning and reversal of stimulus; and thus, the correction of behavioral responses when these are no longer appropriate because previous reinforcement contingencies change. This evidence shows that the orbitofrontal cortex is involved in decoding and representing certain primary reinforcers, in learning and reversing associations of visual and other stimuli, in controlling and correcting reward-related and punishment-related behavior, and consequently in perceiving emotions.³²⁶

The interconnection of neural systems and structures involved in the perception of emotions, reasoning, and decision making are closely integrated from a functional point of view. The factual knowledge that informs both reasoning and decision making is apprehended first through images, which are not exact reproductions, but interpretations of the perceived objects. As Bartlett notes, memory is essentially reconstructive (Bartlett 1995). In this sense, images constitute the replications of patterns once observed, which are momentarily reconstructed under the command of neural patterns in the brain; a phenomenon that Damasio defines as “dispositional representation” (Damasio 2005, 102). These dispositional representations stored in the synapses of neurons are the means whereby images of perceived objects are reconstructed (Figure 23).³²⁷ Actualized when subject to activation, synapses store both our innate and empirical knowledge (Damasio 2005, 102-104). Thus, the close functional integration of brain structures that interact in

³²⁶ In the interaction between subcortical and cortical structures and circuits, a number of recent studies have also cited the predominance of the right hemisphere. According to Damasio, the representation of extrapersonal space and the processes of emotion involve the dominance of this brain hemisphere (Damasio 2005, 66).

³²⁷ As shown in Figure 23, the neuron consists of four main parts: dendrites, the part of the neuron that receives information from other neurons; the cell body, which contains the nucleus and cellular organelles critical for the neuron's vitality; the axon, which conducts information to the axon terminal encoded in the form of action potentials; and the axon terminal that connects with the dendrites of other neurons in a neural circuit (Martin 2003, 4). According to this basic structure, the flow of information among neurons is polarized: the dendrites and cell body receive information, which is transmitted along the axon to the terminals. The places at which this polarized communication between neurons take place is called synapses; accordingly, a neuron that sends information is called a presynaptic neuron and one that receives it is a postsynaptic neuron (Martin 2003, 5). In order to send information to a postsynaptic neuron, the presynaptic neuron releases neurotransmitters, which are molecular compounds of different weights: small, as in the case of amino acids, or large, as in the case of peptides.

the perception of impressions and reasoning have as a point of convergence images that comprise the content of thoughts regardless the modality of their nature.

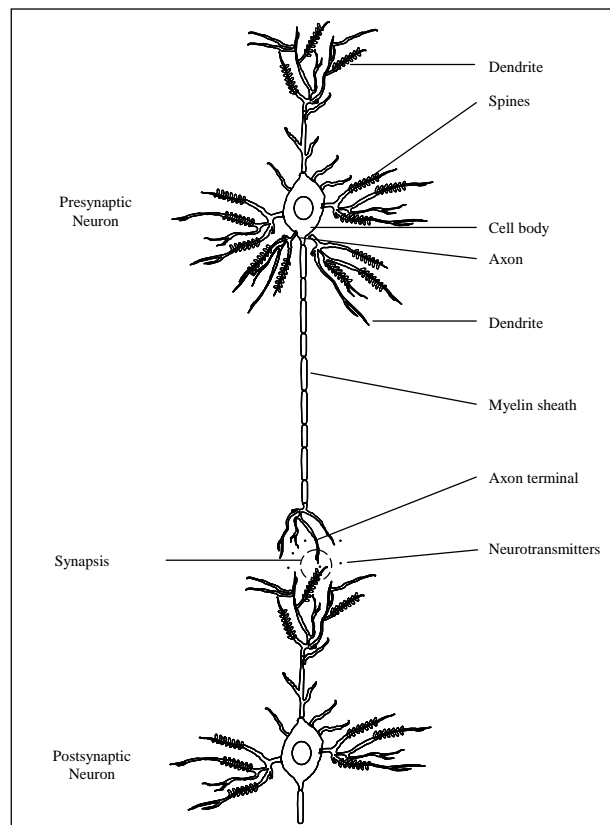


Figure 23. Neuron Structure and Synapsis
(Adapted from Martin 2003, figure 1-1).

The integrative neural systems involved in the process of imagery perception and reconstruction also play a critical role in reasoning and decision making. The images over which one reasons require mental focus and high-order working memory, which not only keep these images active and in focus in the mind, but also manipulate them during the integration of what is retrieved in a spatially segregated manner. This process of retrieval and manipulation of images in

the mind allows for the interpretation of signals brought in at the early sensory cortices.³²⁸ This enables the organization and categorization of concepts necessary for reasoning and decision making. Retrieving memories is a complex process that takes place in numerous cortical and subcortical regions by which neural representations that have occurred in the early sensory cortices are subsequently organized topographically. The imaging-forming function has a systemic or integrative nature that does not depend exclusively on any particular brain region or center. Indeed, there is no region in the human brain able to simultaneously process the representations of all the senses when perceiving sensations of different natures (as in the case of sound, color, movement or shape). Nevertheless, the brain integrates these different types of information and gives the impression that all have been processed at the same place. The representations of current body states occur in multiple cortical and subcortical regions both in the left and right hemispheres, but with the right dominating over the left. Among these regions, the prefrontal cortices and some limbic system structures (such as the anterior cingulate), have recently been shown to play an essential role in the complex processes of attention focus and working memory (Damasio 2005, 84-151).³²⁹

As in the case of the production of images that are essential for reasoning and decision making, expression of the full range of emotional behavior also involves integrative systems of cortical and subcortical structures and circuits. Primary or innate emotions like fear are formed through dispositional representations of their respective body states by neurons in the limbic system, specifically in the amygdalae. Still, these primary emotions are not sufficient to provide the flexibility of responses necessary to successfully interact with the environment. Hence, in addition to primary emotions, better interaction with the environment requires the intermediation of

³²⁸ The early sensory cortices are circumscribed entry points in the brain where nerve terminals of the vision, hearing, somatic sensations, taste, and olfaction send their respective signals. Every early sensory region corresponding to each sense is a collection of several areas with heavy cross-signaling among the aggregate of areas in early sensory collection (Damasio 2005, 91).

³²⁹ For an overview on the importance of the prefrontal cortex refer to Fuster (1997).

secondary emotions, which correspond to systematic connections between primary emotions and mental categories of objects formed through knowledge. Instead of the limbic system characteristic of primary emotions, secondary emotions require the agency of prefrontal and somatosensory cortices (Damasio 2005, 131-134). Besides the subcortical-based primary emotions such as fear, which are innate in the individual and cause automatic responses, there are cortical-based secondary emotions that integrate empirical knowledge about the environment with the mechanism characteristic of primary emotions. These secondary emotions are not innate but developed, and given their stored knowledge of environmental factors, they are able to generate controlled preemptive responses to environmental factors that trigger primary emotions. Hence, emotions play a substantial role in anticipating responses that guarantee a more successful interrelation of human beings with their environment.

Until recently, the general neurobehavioral understanding of cognitive systems ignored the existence of secondary emotions. Instead, it only recognized the presence of primary, innate and uncontrollable emotions in human nature, which, as in the case of animals, also have a subcortical nature and an origin in the limbic system. Nevertheless, extensive recent research on focal brain damage has provided conclusive evidence of the effect that such lesions have on the processing of secondary, learned and controllable emotions of cortical nature, which are a distinctive feature of human beings. These secondary emotions seem to play an essential role in the processes of reasoning and decision making. For the purpose of providing empirical evidence regarding the effect of the Principle of Christian Freedom on reasoning and decision making, the next section focuses on the study of these secondary emotions, whose processes constitute the foundation for the mechanisms involved in the expression of preferences associated with optimal decision making.

6.2.1 *The Neurobehavioral Process of Secondary and Primary Emotion Formation*

Elucidating the process of secondary emotion formation is still the subject of much current research (Dunn, Dalgleish, and Lawrence 2006). Damasio has developed a definition of secondary emotions based on recent neurobehavioral evidence as a “collection of changes in body states connected to particular mental images that have activated a specific brain system” (Damasio 2005, 145). From the structural and functional points of view of different nervous components involved, this process may be considered in general terms as comprising four main stages: Voluntary image reconstruction of environmental factors, involuntary retrieval of dispositional representations from previous experiences, involuntary signaling to the limbic system, and involuntary activation of nervous sub-systems. As shown in Figure 24, after a stimulus is perceived by the primary somatic sensory cortices, the first stage of secondary emotion formation involves the deliberate thinking of a person or object. This takes place through the retrieval of mental images reconstructed under the guidance of dispositional representations dispersedly held in a large number of higher-order association cortices. Once these images are reconstructed, the second stage refers to the involuntary and automatic response of the prefrontal cortex, which connects specific primary emotions felt in previous encounters with the environmental factor that is the object of deliberation. These acquired dispositional representations are unique to each individual, and depend on the experience that each person has with particular environmental factors, and on the emotions that such encounters have previously aroused. The third stage involves the involuntary signaling to the limbic system, more specifically, to the amygdalae, of the response that the prefrontal cortex produced on occasion of dispositional representations derived from previous experiences. The final stage corresponds to the involuntary activation that the amygdalae produce in four nervous subsystems: The peripheral system, ending in the stimulation of the viscera; the motor system, affecting skeletal muscles, facial expressions and body posture; the endocrine sys-

tem, producing the secretion of chemical substances that affect body and brain states; and the system of neurotransmitters, which release their chemical signals to the basal ganglia and cerebral cortex (Damasio 2005, 137-138).

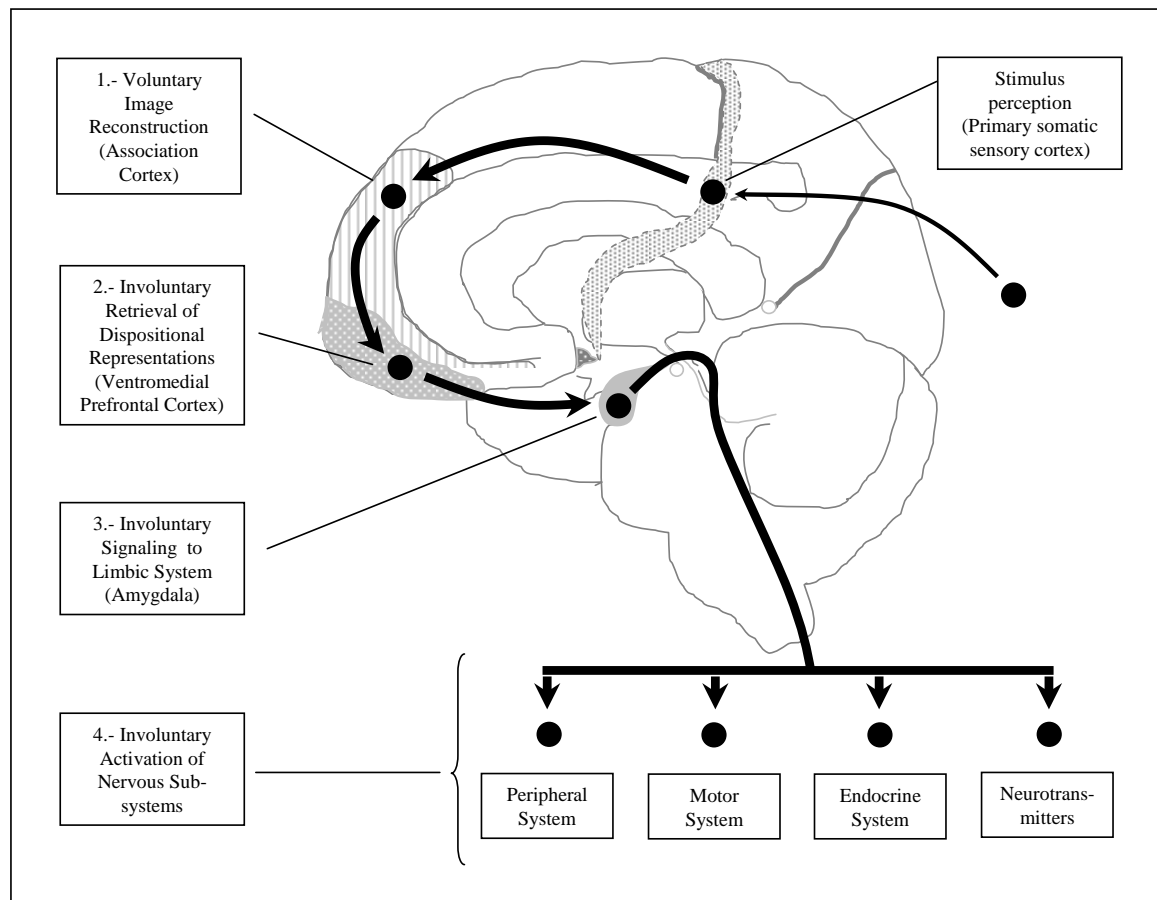


Figure 24. Process of Secondary Emotion Formation
(Adapted from Damasio, 2005, figure 7-2).

6.2.2 The Neurobehavioral Process of Feeling Formation

From the neurobiological point of view, there are substantial differences between the concepts of emotions and feelings. Emotions correspond to the collection of somatic changes connected to mental images activated by brain systems. As observed by Damasio, feelings are instead the images formed in the brain of the body changes that are superimposed on the original

image responsible for the triggering of those emotions (2005, 145).³³⁰ Thus, the body changes produced by either the subcortical primary or the cortical secondary emotions are in turn perceived as images (whenever the individual is awake and focused) by a sector of the brain that, given its privileged location and structure, is constantly monitoring all the events of the body. The images that are juxtaposed with the original image triggering the emotions and their subsequent body changes correspond to the feelings expressed by such emotions.

As shown in Figure 25, the process of feeling formation is more complex than the process of emotion formation, even in the case of secondary emotions. In addition to the four steps characteristic of secondary emotion formation, feeling formation also includes three extra steps according to which the images of such body changes related to emotions are formed in the prefrontal cortex. In this manner, step five involves the emission of involuntary neural and chemical signals proceeding from the peripheral, motor, endocrine and neurotransmitter systems, which are also activated during the process of emotion formation. Step six refers to the activation that these signals produce on cortical and subcortical brain structures. Finally, step seven comprises the convergence of the signals produced by cortical and subcortical brain structures in the ventromedial section of the prefrontal cortex, where an image of the current body state is formed and juxtaposed to the original emotion-triggering image. All the body changes that emotions determine are neurally signaled back to the brain through nerve terminals that bring to it impulses from the skin, blood vessels, viscera, voluntary muscles and joints, arriving at different cortical and subcortical regions of the brain which are interconnected with the prefrontal cortex (Damasio 2005, 143-147).

³³⁰ According to Damasio, “the essence of feeling an emotion is the experience of such changes in juxtaposition to the mental images that initiated the cycle. In other words, a feeling depends on the juxtaposition of an image of the body proper to an image of something else” (Damasio 2005, 145). Feelings depend on such juxtaposition because “the image of the body proper appears *after* the image of the ‘something else’ has been formed and held active, and because the two images remain separate, neurally (Damasio 2005, 146, italics in the original).

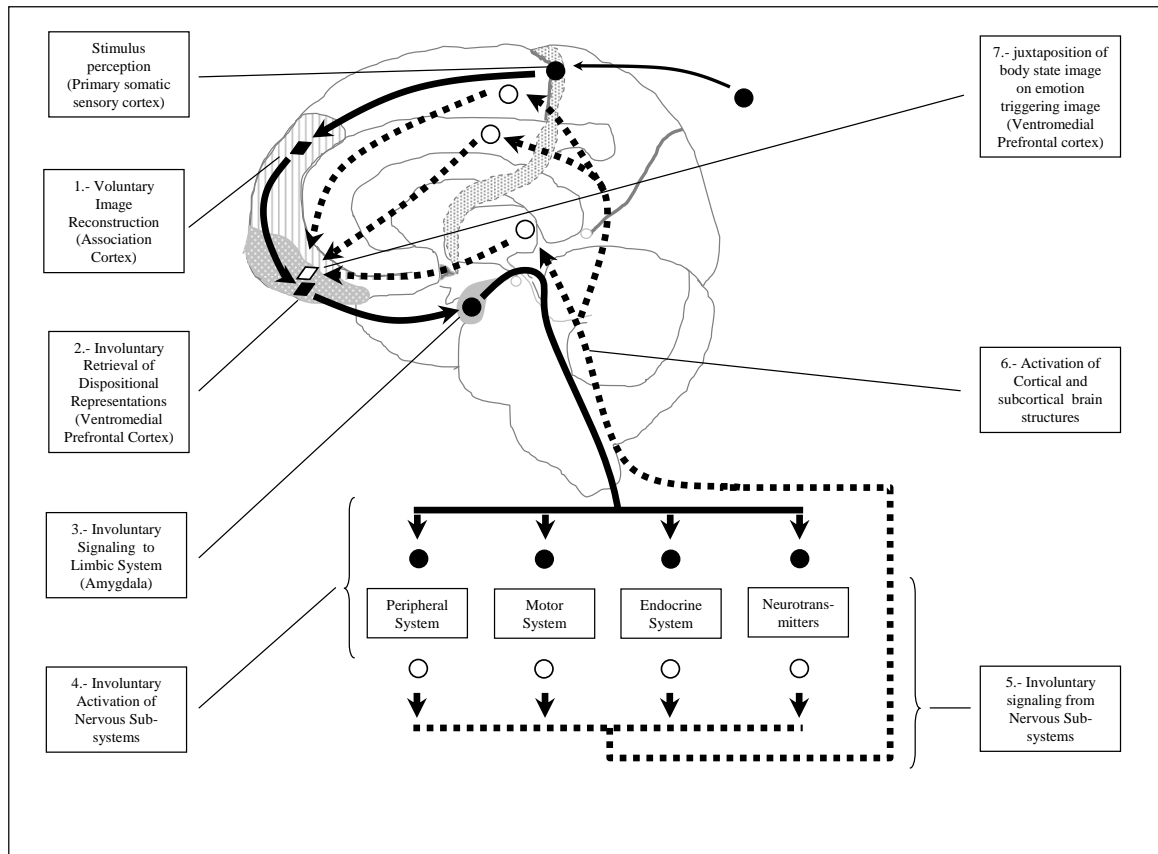


Figure 25. Process of Feeling Formation
(Adapted from Damasio, 2005, figures 7-2, 7-5, 7-7).

Similarly, chemical signals resulting from hormones and peptides released during emotions also reach the brain through the bloodstream, penetrating different areas of the brain equally interconnected with the prefrontal cortex (Damasio 2005, 145). According to Damasio, it is precisely the existence of this chemical tour that provides the most compelling evidence of the loop-like feature characteristic of feeling formation.³³¹ As described in the following section, both the neural and chemical circuitry involved in feelings that converge in the prefrontal cortex seem to support the loop-like view of feeling formation.

³³¹ This vantage point substantially differs from the alternative view of an “as if” loop process of feeling formation. According to the latter, no signals are received by the systems activated during emotions, but the same brain agents that set body changes in motion also inform other brain sites of the changes being commissioned by the body (Damasio 2005, 157).

Several neurobiological features of the prefrontal cortices relate to the key role that they play in feeling formation. Given their privileged position with respect to other nervous systems, the prefrontal cortices receive signals from all the sensory regions in which images and thoughts are formed regarding activities taking place in any part of the body at any time. The prefrontal cortices receive signals about factual knowledge related to the external world, as well as signals related to previous and current body states, and to biological regulatory preferences. The prefrontal cortices are also involved in categorizing all experiences and contingencies resulting from real-life experiences. They form dispositional representations through combinations of things and events according to assigned personal relevance. These categorizations comprise the personal knowledge necessary for the formation of rich scenarios concerning possible outcomes in time, which are relevant to the planning and forecasting of events. This valuable feature for complex social decision making appears mainly located in the ventromedial sector of the prefrontal cortex, while other features more related to the knowledge of the external world, such as people, objects, signs, symbols, languages or mathematics, seem mainly located in the dorsolateral sectors of the prefrontal cortex.³³² Finally, the prefrontal cortices are interconnected with every motor and chemical circuit in the brain, serving as the point of convergence between other cortical and sub-cortical structures (Damasio 2005, 181-183). Precisely in this interaction lies the point of convergence between feelings and reasoning because as feelings have the same cortical origin of the images that trigger them, the nature of these feelings tends to coincide with the nature of those images or thoughts.³³³ The positive or negative nature of the body state is congruent with the nature of the images to which they are juxtaposed, and with the very process of reasoning in gen-

³³² In this sense, Burgess et al. (2007) have recently proposed that the region of the prefrontal cortex approximating the Broadmann area 10, or ventromedial prefrontal cortex (VMPC), supports a cognitive system that facilitates either stimulus-oriented or stimulus-independent attention.

³³³ Damasio notes that “the essence of sadness or happiness is the combined perception of certain body states with whatever thoughts they are juxtaposed to, complemented by a modification in the style and efficacy of the thought process. In general, because both the signal of the body state (positive or negative) and the style and efficacy of cognition were triggered from the same system, they tend to be concordant” (Damasio 2005, 146-147).

eral.³³⁴ Thus, since the style and efficiency of cognition is triggered by the same system that signals the particular body state, both tend to harmonize (Damasio 2005, 146-147).

Different from the general view recognizing only the existence of primary emotions of subcortical nature that are exogenous to the process of reasoning, the discovery of secondary emotions and their feelings have revolutionized the understanding of decision-making processes. These discoveries have confirmed the essential role that the feelings of these emotions play in cognition. The studies of focal brain damage covered in the following section suggest the limitations espoused by the traditional neural science view. This vista held that emotions and feelings were subcortical in nature, arising only from the limbic system, and consequently, different from reason. Instead, these revolutionary studies have uncovered the nature of secondary emotions and their feelings as cortical in origin, determined by structures and circuits located in the prefrontal cortex.³³⁵ These recent studies have further revealed the privileged status of feelings within the process of reasoning as “the neuroanatomical and neurophysiological equals of whatever is appreciated by our sensory channels.” Given the inextricable ties that feelings have to the body, “they come first in development and retain a primacy that subtly pervades our mental life.” As Damasio concludes, “feelings have a say on how the rest of the brain and cognition go about their business. Their influence is immense” (Damasio 2005, 159).

³³⁴ In this sense, Damasio observes that “along with negative body states, the generation of images is slow, their diversity small, and reasoning inefficient; along with positive body states the generation of images is rapid, their diversity wide, and reasoning may be fast though not necessarily efficient. When body states recur frequently, or when there is a sustained negative body state, as happens in depression, the proportion of thoughts which are likely to be associated with negative situations does increase, and the style and efficiency of reasoning suffer” (Damasio 2005, 150-151).

³³⁵ As Damasio notes, feelings have emerged “as cognitive as any other perceptual image, and just as dependent on cerebral-cortex processing as any other image” (Damasio 2005, 159).

6.3 Evidence of the Effect of Feelings and Beliefs on Reasoning

6.3.1 Neurobehavioral Evidence from Historical Cases of Focal Brain Damage

A number of historical cases have evidenced the cortical nature of feelings and the importance of their role in behavior and reasoning. The first documented case was the célèbre accident that the twenty-five year old Phineas P. Gage suffered in the summer of 1848 while working as a construction foreman laying down tracks for the Rutland & Burlington Railroad Company in Vermont. According to his bosses, Gage was “the most efficient and capable” at this dangerous task of charging the blasts that makes way for straight paths. While working close to the town of Cavendish, a distraction caused Gage to ignite the fuse of one of the explosive powders placed on a stone without having covered the sand that directs the explosion away from it. The bar of iron that Gage made to his specifications³³⁶ to ignite the fuse was thrust upward by the explosion, penetrated Gage’s left cheek, and exited at high speed through the top of his head. Surprisingly, Gage was not killed by the accident; even more, he spoke a few minutes after the accident and rode an ox cart sitting erect for three quarters of a mile to a nearby hotel, where he got out of the cart with little assistance from his men. In the account given years later by Dr. Edward Williams, the first physician to examine the wound, Gage was so eloquent in the description of the details of the accident that Dr. Williams decided to ask Gage directly about these details, rather than those who were with him. Although recovering miraculously and being pronounced cured in less than two months, Gage’s disposition, preferences, dreams and aspirations substantially changed forever (Damasio 2005, 3-7).

According to the account later written by Dr. John Harlow, the Cavendish town physician who had assisted him during his recovery, soon after the acute phase of brain injury subsided,

³³⁶ The iron bar that traversed the skull weighs thirteen and a quarter pounds, is three feet seven inches long, and one and a quarter inches in diameter. The end of the bar that entered the skull is pointed with a taper seven inches long and one quarter of an inch of diameter in the point, which may have saved Gage’s life. The bar is for display together with Gage’s skull at the Warren Anatomical Museum at the Countway Library of Medicine in Boston, Massachusetts.

Gage underwent a dramatic change of character.³³⁷ No longer able to work as a foreman given his new lack of discipline and inconsistencies of his new character, Gage took temporary jobs on horse farms as far as Chile; he even worked for the circus relating the story of his accident and showing the iron bar. After returning to the United States in 1860, he finally died on May 21, 1861, after an illness degenerated into major convulsions that ended his life (Damasio 2005, 8-10).

Even though the knowledge of his trade remained intact, the accident severely affected Gage's capacity to reason and to make personal and social decisions. This provided the first evidence of a possible connection between feeling, reasoning, and social and moral behavior. Among the main capabilities that were affected by the accident, Gage became unable to anticipate the future and to make plans within a complex social environment. He also became unable to act responsibly with respect to himself or to others, and began instead to behave according to the command of his free will.³³⁸

In order to identify the part of Gage's brain where the lesion could have produced such drastic changes in his personality, a group of neurologists lead by Hanna Damasio recreated the characteristics of Gage's skull and brain, as well as the trajectory of the iron bar with the use of advanced imaging technology. Damasio and her colleagues determined that the brain area mainly damaged by the iron bar was not among those associated with motor function or language, but the ventromedial region of the frontal lobe. As the case of Gage demonstrated, a lesion in this region of the brain seems to have compromised Gage's ability to plan for the future, to behave according

³³⁷ In the words of Harlow, Gage became "fitful, irreverent, indulging at times in the grossest profanity which was not previously his custom, manifesting but little deference for fellows, impatient of restraint or advice when it conflicts with his desires, at times perniciously obstinate, yet capricious and vacillating, devising many plans of future operation, which are no sooner arranged than they are abandoned" (Harlow 1868).

³³⁸ As Harlow observed, after the accident Gage no longer showed respect for social conventions or ethics, and the decisions that he made no longer took into account his best interest. According to Damasio, the value system of Gage after the accident was either different, or if it was the same, "there was no way in which the old values could influence his decisions" (Damasio 2005, 11).

to previously learned social conventions, and to make decisions conducive to his own wellbeing (Damasio et al. 1994).

In addition to Gage's case, subsequent historical cases have shown similar effects on social and moral behavior resulting from lesions to the ventromedial prefrontal region.³³⁹ These historical cases show that although individuals preserved intact their cognitive capabilities, the evocation of knowledge was no longer able to generate in them any feelings as they were certainly produced before the lesions to the ventromedial prefrontal region. The patients were able to know but not to feel. These observations have been replicated in the most recent neurobiological studies, in which evidence from patients with lesions in the prefrontal cortex have revealed impairment in decision making.

6.3.2 *Recent Neurobehavioral Evidence on the Relation between Feelings and Cognition*

Following the line of research initiated by the historical cases on focal brain damage, the connection has been established between damages to the prefrontal cortices and drastic emotional changes impairing the capability for normal reasoning and decision making. This research has contributed to produce empirical evidence confirming the critical role that feelings have in carrying out moral and social cognition. The main evidence derives from clinical and neuroimaging studies. A number of recent clinical studies have shown evidence of the relation between im-

³³⁹ In 1932, the Columbia University neurologist Brickner studied an unidentified patient with severe damage to the cerebral cortices of the frontal lobe (Brickner 1936). Although the patient preserved all faculties for normal perception and conventional memory, he lost the capability to implement even the simplest plans; making him unfit to carry out the demands of his former job as a New York stockbroker. Regarding moral behavior, "Patient A" also underwent severe changes: his previous modesty had completely vanished; becoming boastful, uncaring and even verbally abusive. Even though "Patient A" had intact mental capacities, the damage to the frontal lobe seriously compromised his emotions and feelings. Also with similar observations, Hebb and Penfield at McGill University in Canada published in 1940 the changes observed in the social and moral behavior of a sixteen-year old patient. This young patient underwent bilateral removals from the frontal lobes due to a compound fracture that compressed and destroyed the frontal cortices (Hebb and Penfield 1940). Likewise, Ackerly and Benton (1948) documented similar effects on a patient who sustained lobe damage at the time of birth (Damasio 2005, 55-57). Each of these cases demonstrated similarities in severe impairment of social and moral decision making across patients with varying ages. For a detailed list of references on historical cases regarding frontal lobe damage refer to Stuss (1986).

paired emotional processing and disturbance in moral behavior.³⁴⁰ During the processing that follows the perception of a social event, the experience of certain anticipated outcomes of response options would be marked by the reactivation of an appropriate somatic state. Failure to reactivate pertinent somatic markers would deprive the individual of an automatic device to signal ultimately deleterious consequences relative to responses that might nevertheless bring immediate reward. Alternatively, they also deprive individuals from perceiving signals of ultimately advantageous outcomes relative to responses that might bring immediate pain.³⁴¹ According to Damasio et al. (1990), somatic markers also trigger non-conscious inhibition of response states by engagement of subcortical neurotransmitter systems linked to appetitive behaviors.³⁴² On the contrary, Damasio et al. (1990) found that elementary unconditioned stimuli (e.g. a loud noise) produce normal autonomic responses. Following this important observation, subsequent clinical studies also provided evidence that patients with VMPC lesions do not suffer any form of impairment in general intellectual capabilities such as those associated with logical reasoning or declarative knowledge of social and moral norms.³⁴³ Similar effects have been reported in the case of patients suffering damages to prefrontal cortices due to meningioma.³⁴⁴

³⁴⁰ Damasio et al. (1990) found that after damage to ventromedial frontal cortices, adults with previously normal personalities developed defects in decision making and planning that are especially perceivable in an abnormal social conduct. They proposed that the defect arises from an inability to activate somatic states linked to punishment and reward, which were previously experienced in association with specific social situations, and that must be reactivated in connection with anticipated outcomes of response options.

³⁴¹ For instance, activation of somatic markers would force attention to future negative consequences, permitting conscious suppression of the responses leading to them, and deliberate selection of biologically advantageous responses (Damasio, Tranel, and Damasio 1990).

³⁴² An investigation of this theory in patients with frontal damage revealed that their autonomic responses to socially meaningful stimuli were indeed abnormal, suggesting that such stimuli fail to activate somatic states at the most basic level (Damasio, Tranel, and Damasio 1990).

³⁴³ Saver and Damasio (1991) found that patients with lesions of ventromedial frontal cortices, retain the ability to recognize the entities and events that compose social situations, while losing the ability to generate an appropriate array of response options to social stimuli, and to conceptualize the future consequences of choosing a particular option. The base of social knowledge that their patients acquired during their normal development was still intact; and their capacity to access and process components of such knowledge was also intact in the conditions specified in the experiments.

³⁴⁴ Meningioma is a brain tumor arising out of the meninges, the membranes covering the brain surface. After the surgical removal of the tumor, the patient remained physically able and with intact mental capacities, but his ability to make decisions was severely affected to the point of rendering him unfit for social interaction. As a result of the damage to structures necessary for decision making, Elliot, the patient, lost the capability to effectively plan for future events and to learn from his mistakes, which evidenced a compromised free will (Saver and Damasio 1991). As Dama-

The most important line of evidence of clinical studies investigating the effects of impaired feelings and cognition has highlighted the fundamental role that prefrontal cortices play in normal moral decision making.³⁴⁵ These findings are consistent with an attenuation of the automatic emotional identification with others that is part of one's innate moral sense. Such a disturbance may also result from neurodegenerative disease affecting the ventromedial prefrontal cortex. Anderson et al. (2006) have recently found that damage to the ventromedial prefrontal region disrupts neural circuitry critical for perceiving emotions, which in turn may contribute to impairments in real-world competencies. In a study on patients with focal lesions in this brain region acquired either in childhood or adulthood, the investigators showed that there is a relationship between emotional dysfunction and impairments in real-world behavioral competencies (Anderson et al. 2006).

Regarding the critical role that emotion plays for adaptive decision making, Koenigs and Tranel (2007) have focused on whether emotion regulation defects following focal prefrontal brain damage are associated with exceptionally irrational economic decision making. In situations of unfair treatment, as characteristic of Ultimatum Games, relatively low ultimatum offers are often rejected; attributing this "irrational" behavior to an emotional reaction to unfair treatment.³⁴⁶ Using the lesion method, Koenigs and Tranel verified the hypothesis that damage to the VMPC

sio observed elsewhere, the "cold-bloodedness of Elliot's reasoning prevented him from assigning different values to different options, and made his decision-making landscape hopelessly flat"(Damasio 2005, 34-51).

³⁴⁵ In neurological and neuropsychological studies on a 33-year-old woman, twenty-six years after she sustained damage to the frontal lobe, Eslinger et al. (1992) found that the patient exhibited striking neuropsychological defects in higher cognition, most notably in self-regulation of emotion and affect, and in social behavior. Likewise, Anderson et al. (1999) investigated the long-term consequences of early prefrontal cortex lesions occurring before 16 months in two adults, finding that the patients had severely impaired social behavior and insensitivity to future consequences of decisions, despite normal basic cognitive abilities. The study showed that the two patients had defective social and moral reasoning, suggesting that the acquisition of complex social conventions and moral rules had been impaired. Mendez et al. (2005) investigated the basis of disturbed moral judgment in 26 patients with frontotemporal dementia (FTD), and found that these patients were impaired in their ability to make immediate, emotionally-based moral judgments.

³⁴⁶ In the Ultimatum Game, two players are given one opportunity to split a sum of money. One player (the proposer) offers a portion of the money to the second player (the responder) and keeps the rest. The responder can either accept the offer, in which case both players split the money as proposed, or reject the offer, in which case both players get nothing.

results in exaggerated irrational economic decisions.³⁴⁷ These results suggest that emotion regulation processes subserved by the VMPC are a critical component of normal economic decision making. In another study of six patients with focal bilateral damage to the VMPC, Koenigs et al. (2007) showed that lesions in this cortex produce an abnormally ‘utilitarian’ pattern of judgments regarding moral dilemmas. These abnormalities pit compelling considerations of aggregate welfare against highly emotionally aversive behaviors (for example, having to sacrifice one person’s life to save a number of other lives). In contrast, the judgments of VMPC patients were normal in other classes of moral dilemmas. These findings indicate that for a selective set of moral dilemmas the VMPC is critical for normal judgments of right and wrong. The findings support a necessary role for emotions in the generation of these judgments.

A second line of empirical work derives from neuroimaging studies that have shown the activation of brain areas known to process emotions during tasks involving moral judgment. In this new and fast expanding field of research, Greene et al. (2001) advanced a pioneering work by exploring emotional engagement in moral judgment using functional magnetic resonance imaging (fMRI). Using this technique, they assessed the role of reason and emotion in moral judgment.³⁴⁸ These findings provided new evidence that the orbitofrontal cortex has dedicated subregions specialized in processing specific forms of social behavior. Using the same imaging technique on passive visual tasks, Moll et al. (2002) found that the orbital and medial prefrontal cortex and the superior temporal sulcus are also recruited by viewing scenes evocative of moral emotions. These results indicate that the orbital and medial sectors of the prefrontal cortex and the superior temporal sulcus region (critical regions for social behavior and perception) play a central role in mor-

³⁴⁷ Subjects acted as the responder to 22 different proposers who offered various splits of \$10. Offers ranged from fair (give \$5, keep \$5) to extremely unfair (give \$1, keep \$9). The rejection rate of the VMPC group was higher than the rejection rates of the comparison groups for each of the least fair offers (\$7/\$3, \$8/\$2, \$9/\$1) (Koenigs et al. 2007).

³⁴⁸ Following this novel line of research, Moll et al. (2002) used a visual sentence verification task in conjunction with an fMRI. They found that a network comprising the medial orbitofrontal cortex, the temporal pole and the superior temporal sulcus of the left hemisphere was specifically activated by moral judgments. In contrast, judgment of emotionally evocative, but non-moral statements activated the left amygdala, lingual gyri, and the lateral orbital gyrus.

al appraisals. They further suggest that the automatic tagging of ordinary social events with moral values may be an important mechanism forwarding implicit social behaviors in humans. Similarly, Ochsner et al. (2002) found that neural correlates of reappraisal increased activation of the lateral and medial prefrontal regions and decreased activation of the amygdala and medial orbitofrontal cortex. In general, these findings support the hypothesis that the prefrontal cortex is involved in constructing reappraisal strategies that can modulate activity in multiple emotion-processing systems.³⁴⁹

Although stressing the importance of emotions for moral cognition, evidence from neuroimaging has also pointed to the combination of affective and rational mechanisms in the production of moral judgments.³⁵⁰ Several regions of the frontal and parietal cortex predict intertrial differences in moral judgment, exhibiting greater activity for utilitarian decisions. In this manner, recent rigorous studies incorporating advanced neuroimaging techniques have confirmed the important role of the VMPC on the execution of long-term mental plans from immediate environmental demands, and for generating new and more rewarding behavioral or cognitive sequences relevant to complex reasoning and decision-making processes.³⁵¹

³⁴⁹ Also in a fMRI study, Heekeren et al. (2003) found that left posterior superior temporal sulcus (pSTS) and VMPC are a common neuronal substrate of decision making about complex ethical dilemmas, processing material evocative of moral emotions, and simple ethical decision making about scenarios devoid of violence and direct bodily harm. Similarly, Luo et al. (2006) found that at the neural level, implicit moral attitude, as indexed by increased bold response as a function of stimulus intensity, was associated with increased activation in the right amygdala and the ventromedial orbitofrontal cortex.

³⁵⁰ Greene et al. (2004) collected valuable fMRI data to support a theory of moral judgment according to which both cognitive and emotional processes play crucial and sometimes mutually competitive roles. Their study showed that brain regions associated with abstract reasoning and cognitive control (including dorsolateral prefrontal cortex and anterior cingulate cortex) are recruited to resolve difficult personal moral dilemmas in which utilitarian values require “personal” moral violations.

³⁵¹ More recently, Borg et al. (2006) have used fMRI to investigate factors that affect brain processes associated with moral judgments. They found that when facing moral choices that involve the same amount of harm, there is not any or less brain activity in areas associated with emotion (such as the orbitofrontal cortex and temporal pole) than in those associated with cognition (such as the dorsolateral prefrontal cortex). Conversely, when confronted with moral choices involving different levels of harm, or the choice between harm and no harm, or intentional and unintentional harm, there is more activity in areas associated with emotion (orbitofrontal cortex and temporal pole) and less activity in areas associated with cognition (including the angular gyrus and superior frontal gyrus). Accordingly, Koechlin and Hyafil (2007) conclude that there is enough neuroimaging evidence to support the existence of four main functions of the prefrontal cortex: learning new behavioral routines, memory retrieval, relational reasoning and multitasking behavior.

In this context, neuroimaging studies have provided confirmatory evidence of the results shown by clinical studies from patients with frontal cortex damage regarding the role that automatic somatic markers play in decision making. The neuroimaging evidence shows the critical nature of VMPC as the cortical structure involved in the formation of moral judgments and appraisals within complex ethical dilemmas. The neuroimaging evidence of high activation of these frontocortical structures (in comparison with subcortical structures such as the amygdalae) confirm the key role they have in the formation of affective and social mechanisms necessary for formulating moral judgments and long-term mental plans. As detailed in the next section, perhaps the most substantial evidence supported by these neuroimaging studies refers to the presence of two important components that are most distinctive of social human behavior. First, these studies underscore the existence of automatic marking effects that social events are able to generate in the context of organizing and ranking all available alternatives. Second, they point toward the great importance attributed to preferences, moral values, and beliefs in the most complex processes of reasoning and decision making.

6.3.3 *Evidence of the Effect of Belief on Reasoning and Decision Making*

Besides the neurobehavioral evidence that has shown the important effect feelings have on reasoning and decision making, a number of recent studies have also isolated the brain areas associated with belief attribution. This evidence seems to confirm the value that Hume and Weber assigned to beliefs as magnifying elements of emotions within processes of reasoning and decision making, as examined in chapter 2. Thus, according to recent neurobehavioral evidence, belief seems to emerge as another critical element in the normal execution of these mental processes.

Humans powerfully and flexibly infer the behavior of other people by constructing mental models about the beliefs and intentions of others. The study of this ability of normal individu-

als to attribute independent mental states to self and others to explain and predict behavior is what is commonly known as “Theory of Mind” (Saxe and Kanwisher 2003). A number of neuroimaging, neurobiological and behavioral studies have identified the brain structures associated with Theory of Mind, as well as the important role that it plays in decision making.³⁵² Aichhorn et al. (2006) have replicated results concerning the activation in the temporo-parietal junction (TPJ) as centrally involved in processing false belief stories. Young et al. (2007) have studied through a cognitive neuroscience approach how information about an agent’s beliefs and an action’s consequences contribute to moral judgment. They found higher RTPJ responses for cases of attempted harm, where protagonists were condemned for actions that they believed would cause injury to others, even though damage never occurred. The results of the study suggest that moral judgments depend on the cognitive process mediated by the RTPJ, previously associated with belief attribution, and to a lesser extent, the precuneus (PC), left temporoparietal junction (LTPJ), and medial prefrontal cortex (MPFC). Specifically, the results reveal significantly above-baseline activation of the RTPJ for the four conditions investigated: intentional harm, attempted harm, unknowing harm, and all neutral, which highlights the role of belief attribution while making moral judgments. The differential neural response between experimental conditions suggests an unequal contribution of belief attribution to moral judgment depending not only on what the protagonist believes, as might be expected, but also on the consequences of the protagonist’s behavior. These results suggest the important role of belief attribution in complex processes of social

³⁵² Fletcher et al. (1995) advanced a functional neuroimaging study with positron emission tomography to study brain activity in normal volunteers while performing tasks necessitating the attribution of mental states, or “theory of mind stories” versus control “physical stories.” They found significantly increased regional cerebral blood flow in the temporal poles bilaterally, the left superior temporal gyrus and the posterior cingulate cortex. Comparison of the “theory of mind” stories with the “physical” stories revealed a pattern of activation associated with mental state attribution: it was only this task that produced activation in the medial frontal gyrus on the left (Brodmann’s area 8). This showed that when inferential reasoning depends on constructing a mental model about the beliefs and intentions of others, the participation of the prefrontal cortex is required. In a similar study on patients with Asperger’s syndrome, a form of autism associated with normal verbal ability, Fletcher et al. (1996) replicated the same results. They showed that the Asperger group failed to activate Brodmann’s area 8 during the mental state stories, which suggests that this medial frontal area is important in the attribution of mental states. The Asperger individuals failed to activate this area even though they performed the mental state task reasonably well.

and moral decision making, and provide evidence of the interaction between these processes at both the neural and behavioral levels.

The neurobiological study of belief attribution within Theory of Mind has focused on the identification of brain structures associated with selfish behavior, as well as their effect in decision making processes.³⁵³ Likewise, several behavioral studies have shown that misapprehensions that individuals have when assessing the conceptual perspectives of other persons are rooted in the natural tendency to impute one's own perspective to others, resorting to what is called "Ego-centric assumption of shared perspectives" (Fenigstein and Abrams 1993).³⁵⁴ These studies show that failure to suppress one's self is at the core of the misjudgments made when assessing the conceptual perspectives of others, and that avoiding these misrepresentations requires the cognitive flexibility of being able to consider ideas different from one's own.

In the realm of behavioral studies asserting the effect of beliefs on traits, the study of the effects that Christian beliefs have on individual behavior, decision making, and preference formation has been a prominent area of research since the very beginnings of the modern behavioral sciences.³⁵⁵ Consolidation of this early orientation has influenced a growing number of current studies using advanced behavioral methods to assess the effects of Christian beliefs on behavioral changes, as exemplified by Legee and Kellstedt's authoritative work evaluating the effects of Biblical views on the "Born Again" phenomenon (1993). Similarly, a number of studies have

³⁵³ Ruby and Decety (2003) have shown that abstract social communication requires shared representations as well as a cognitive flexibility for successful interactions between self and other. Their studies have identified several neural mechanisms that underlie the ability to distinguish between our perspective and the perspective of others at a conceptual level. In their study, third-person perspective as compared to first-person perspective was associated with activation in the medial part of the superior frontal gyrus, in the left superior temporal sulcus, in the left temporal pole and in the right inferior parietal lobe. The reverse comparison revealed a specific activation in the postcentral gyrus for the first-person conceptual perspective. Accordingly, their study provided congruent results at the conceptual level with previous studies investigating the neural correlates of self/other distinction at the motor level; closely integrating processes of conceptual and motor cognition.

³⁵⁴ Vorauer and Ross (1999) found that self-awareness impairs perspective-taking of the self; that is, individuals are most likely to overestimate their transparency to an observer under conditions fostering self-focused attention.

³⁵⁵ During the emergence of psychology as a distinct academic specialty more than a hundred years ago, William James (1902) and Edwin Starbuck (1906) first employed empirical research methods to study the effects of religious conversion on personality change.

explored the specific effect of conversion on self-defining personality functions associated with increased levels of subjective well-being, such as identity and life meaning, goals, feelings, attitudes and behaviors.³⁵⁶ Detailed works on the different meanings attached to being born again have elucidated the political consequences of a number of religious experiences and statuses, and have also contributed to the study of religious self-identification (Dixon, Levy, and Lowery 1988; Jelen, Smidt, and Wilcox 1993). Hence, the seminal influence of Jonathan Edwards' *Treatise Concerning Religious Affections* (Edwards 1746) has been re-investigated by recent studies that have emphasized the effect of Christian beliefs on emotions³⁵⁷ and personality;³⁵⁸ underscoring the importance of specific Christian beliefs for reasoning and decision making.

In sum, these neurobiological, neuroimaging, and behavioral studies have shown confirmatory evidence both of the importance that certain brain structures have for the formation of feelings and beliefs, as well as their relevance to reasoning and decision-making processes. They lend support to Hume's view regarding the power attributed to violent feelings and passions in the processes of reasoning and decision making in the unrenewed human nature. They also underscore the importance of beliefs as powerful means to heighten the effects that emotions have on reasoning and decision making. As detailed earlier, the violent nature of these feelings renders any other feeling or social convention unable to control or subdue their imposing power on moral and social decision making. These results also provide neurobiological evidence of the relation-

³⁵⁶ The influential studies of Granqvist and Kirkpatrick 2004; Hood 1995; Kirkpatrick 1997, 1998; Paloutzian, Richardson, and Rambo 1999; Zinnbauer and Pargament 1998 have explored the nature, causes and effects of religious conversion on these developmental behaviors.

³⁵⁷ Within this discipline, several works have stressed the general effects of belief and emotions (Ellison 1998; Ellison and Levin 1998; Hill 1999; Hill and Hood 1999; Hutch 1978; McCullough, Emmons, and Tsang 2002; McCullough and Snyder 2000; Schimmel 1992; Watts 1996). From the perspective of clinical studies, recent research has also stressed the behavioral effects resulting from the close associations between belief and emotions (Enright and Fitzgibbons 2000; Fincham and Beach 2002; Kachadourian, Fincham, and Davila 2004; Kearns and Fincham 2004; McCullough, Emmons, and Tsang 2002; VanOyen Witvliet 2001). Within this context, the newly emerging field of the Psychology of Religion has focused attention on the study of humility (Baumeister, Smart, and Boden 1996; Heather-ton and Vohs 2000; Heather-ton and Wyland 2003). Finally, the effects on reasoning and decision making that may result from the interaction between emotion and belief are also at the core of the novel approach of Emotional Intelligence (Brackett, Mayer, and Warner 2004; Caruso, Mayer, and Salovey 2002; Mayer et al. 2005; Paek 2004).

³⁵⁸ In this respect, a range of studies have explored the effects of Christian beliefs and attitudes on personality (Emmons 1999; MacDonald 2000; Ozer and Reise 1994; Piedmont 1999; Saroglou 2002).

ship between beliefs and feelings that seems present in the most complex processes of moral cognition; a relationship that lies at the core of the effects of the Sublime Palpation of Christian Freedom on behavior. The liberating effect from the slavery of violent somatic-based feelings that this palpation appears to provide through the renewal of the mind constitutes the most distinctive element of Palpational Rationality's decision-making model. In line with the same template proposed by Weber, Palpational Rationality attributes to this profound transformation in individual and social behavior the foundations of a peaceful, stable, and prosperous society characteristic of individuals with a Protestant inheritance.

6.4 The Role of Feelings in Decision Making: the Somatic-Marking Hypothesis

The most relevant formulation of the neurobehavioral effects that emotions and feelings have on decision making has thus far been proposed by Damasio (2005; 1990; 1991; 1994). In keeping with the important role assigned to the prefrontal cortices, Damasio has developed a novel hypothesis highlighting the relevance of feelings to decision making under the notion of "somatic markers." In Damasio's view, somatic markers are feelings about the body states that make certain images more salient than others during decision making; in this manner, they assist the process of sifting through all possible options by selectively highlighting certain images over others. Somatic markers correspond to biological mechanisms that covertly or overtly aid the pre-selection of options, rather than applying reason to all possible choices. They facilitate the complex processes of social and moral decision making because as Damasio observes, "biological drives and the automated somatic-marker mechanism that relies on them are essential for some rational behaviors, especially in the personal and social dimensions" (Damasio 2005, 173-189, 192).

The manner in which these biological mechanisms perform their preselecting functions highlights two main types of somatic markers: overt and covert. Overt somatic markers are body-state feelings that mark outcomes of an individual's responses as either positive or negative, and thus lead to deliberate avoidance or pursuit of a given response within consciousness. Conversely, individuals are in the presence of covert somatic markers whenever these feelings are perceived outside consciousness. As Damasio observes, covert markers are the essential means for decision making among animals. In humans, says Damasio, "the explicit imagery related to negative outcome would be generated, but instead of producing a perceptible body-state change, it would inhibit the regulatory neural circuits located in the brain core, which mediate appetite, or approach behaviors." The resulting enhancement in the tendency to withdraw would then reduce the chances of a potentially negative decision. For Damasio, such a covert mechanism is the source of what is commonly thought of as intuition (Damasio 2005, 185-188). Hence, whether conscious or unconscious, somatic markers seem to greatly aid human reason to sift through all possible decision-making options available.

6.4.1 The Process of the Somatic-Marker

Damasio's description of the effect that somatic markers have on decision making adds to the same steps of feeling formation the organizational effect that these markers produce on mental images (Damasio 2005, 180-183). This process also involves the tuning effect of innate-based subjectivity and acquired preferences. As Figure 26 shows in a counter-clockwise manner from top left, the first stage corresponds to the beginning of any decision-making process. After a stimulus is perceived by the primary somatic sensory cortices, the mind is exposed to a multiplicity of uncategorized images that have been previously perceived and stored in diverse higher-order association cortices. These images constitute the whole of the individual's knowledge on the subject pertaining to the specific decision at hand. In the second stage, under the guidance of disposi-

tional representations dispersedly held in the association cortices, the reconstructions of the stored images are retrieved without organization, and brought into focus at the prefrontal cortex by the intermediation of both basic attention and basic working memory.³⁵⁹ As in the case of steps three and four of the process of feeling formation, the unorganized retrieval of stored images in the prefrontal cortex involuntarily signals the limbic system, which in turns activates the peripheral, motor, endocrine and neurotransmitter nervous subsystems. According to the loop-like nature that Damasio attributes to this process, involuntary signals from the nervous subsystems activate, in turn, different cortical and subcortical structures of the brain interconnected with the prefrontal cortex, as seen in steps five and six of Figure 26 (Damasio 2005, 180-183).

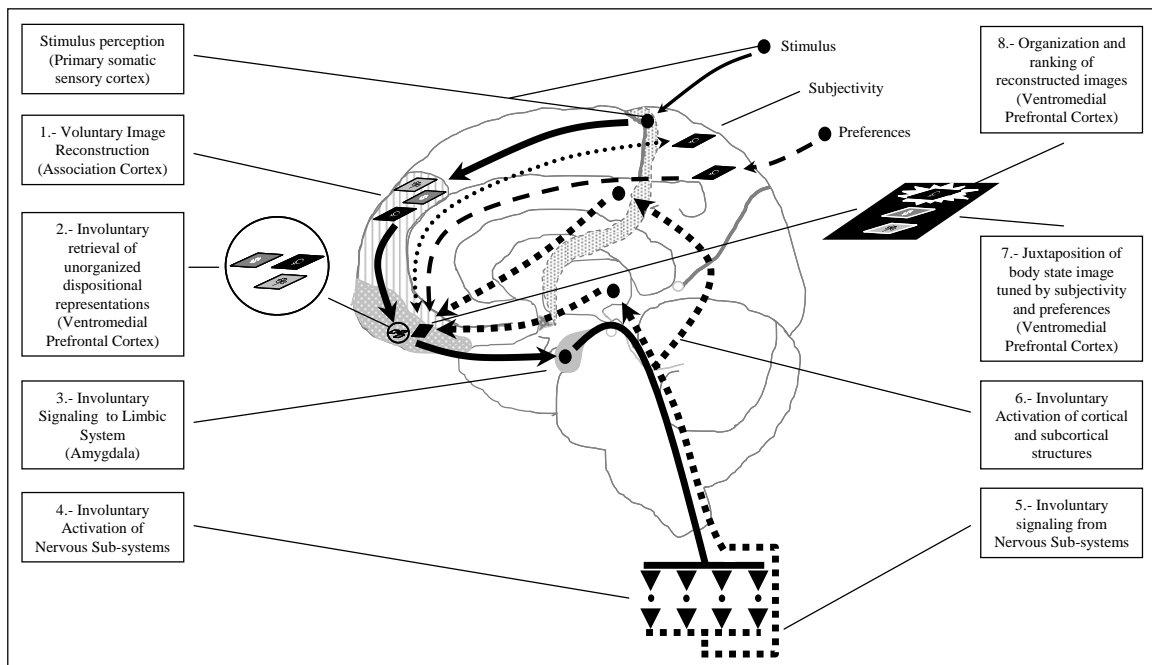


Figure 26. Somatic-Marking Process with Intervention of Subjectivity and Acquired Preferences (Data from Damasio, 2005, 180-183).

To select an option from among all possible, it is necessary that the reconstructed images that are randomly retrieved in no particular order and brought into focus at the prefrontal cortex

³⁵⁹ According to Posner (1990), basic attention allows the maintenance of a mental image in consciousness to the exclusion of others. Likewise, Goldman-Rakic (1992) notes that basic working memory holds separate images for a relatively extended period of hundreds to thousands of milliseconds.

be categorized according to specific criteria, assigning higher value to some options versus others. This ordering occurs during the last stages of the somatic-marking process. As seen in the seventh step of Figure 26, the image of the current body state is juxtaposed to the originally reconstructed images through the expression of biological preferences of body states, which have been tuned by acquired social or cultural preferences. Together they constitute the sources of the values used as criteria in the process of categorization. The final step of this process corresponds to the organization and ranking of originally reconstructed images accomplished by the juxtaposition of the image of the body state as tuned by the images of socio-cultural preferences. The final outcome is a somatically marked image that is preferred, and therefore chosen, from all others. In addition to basic attention and basic working memory, this final stage also involves the somatic-marking effect produced by this image of current body states. According to Damasio's Somatic-marker hypothesis, the socially tuned somatic states that are perceived by the prefrontal cortex constitute a critical organizational factor that marks the higher value of one image with regard to all others, while also boosting basic attention and basic working memory (Damasio 2005, 197-198).

The crucial role assigned to somatic markers in decision-making processes refers to their function in marking the value of uncategorized images according to received or acquired preferences.³⁶⁰ According to Damasio, "the automated somatic-marker device of most of us lucky enough to have been reared in a relatively healthy culture has been accommodated by education to the standards of rationality of that culture" (Damasio 2005, 200). There seems to be a close interrelation between preferences that are innate and acquired preferences because as Damasio holds, the latter "are acquired on the basis of the inherent ones" (Damasio 2005, 198). Thus, in

³⁶⁰ In Damasio's view, the criteria that are needed to rank and create an order among all possible alternatives is provided by somatic markers, "which express at any given time, the cumulative preferences we have both received and acquired" (Damasio 2005, 199).

addition to marking the higher biological value of images associated with survival, the automated images of body states are also “tuned” to specific cultural conventions that are designed to guarantee the individual’s survival and self-advancement in a particular society.

Exposed to the cultural influx of education and socialization, the somatic markers used to make decisions appear to be empirically accumulated, which highlights the great importance of acquired preferences to the image organization and ranking associated with decision making. Besides the internal preference system of innate regulatory dispositions inherently biased to avoid pain, and to seek pleasure, there is also a set of circumstances related to entities, physical environment, and events, which assign value to select images over others. These somatic markers mainly signal the feelings of body states determined by secondary emotions.³⁶¹ Accordingly, the set of experiences resulting from education, socialization, and religious orientation seem key constituents of the acquired cumulative preferences expressed by somatic markers, which function as criteria used to organize and rank ideas during decision making (Damasio 2005, 199).³⁶²

6.4.2 *Tests of the Somatic-Marker Hypothesis*

In order to test the Somatic-marker hypothesis, Damasio et al. (2005, 209-221) advanced three experiments with patients suffering from lesions to the prefrontal cortex. They tested for skin conductance response, for alterations in gambling behavior, and for a combination of these two tests.³⁶³ In the case of patients with frontal lobe damage, Damasio et al. found flat record-

³⁶¹ As Damasio observes, “when the choice of option X, which leads to bad outcome Y, is followed by punishment and thus painful body states, the somatic marker system acquires the hidden, dispositional representation of this experience-driven, noninherited, arbitrary connection. Re-exposure of the organism to option X, or thoughts about outcome Y, will now have the power to enact the painful body state and thus serve as an automated reminder of bad consequences to come (Damasio 2005, 179-180).

³⁶² Because somatic markers are created in the brain during education and socialization, great importance is given to what Damasio calls “normal cultures,” in opposition to “sick cultures.” As examples of the latter, Damasio refers to those cultures proper of Germany and the Soviet Union during the 1930’s and 1940’s or of China during the Cultural Revolution, whose effect on abnormal behavioral change can be as severe as those produced by brain damage of the focal area (Damasio 2005, 177-179).

³⁶³ The skin conductance response is a test of autonomic system responses that records the increases in the secretion of fluid in the skin’s sweat glands resulting from experiencing emotions. Electrodes connected to the skin of the patient

ings.³⁶⁴ Although patients with frontal lobe dysfunction were able to evoke knowledge related to each stimulus image, they were not able, as in the case of normal control subjects, to elicit a skin conductance response. As Damasio concluded, these results show that “to know does not necessarily mean to feel” (Damasio 2005, 211).

In order to test the effects of frontal lobe lesions on decision making resembling life-like settings, Bechara et al. (1998; 1994) devised a series of gambling experiments to assess changes in behavior associated with the absence of emotions, known as the “Iowa Gambling Task” (IGT). In the basic form of the experiment, players sit in front of four decks of cards labeled A, B, C, and D with a loan of \$2000 in play money, with the basic goal of losing as little and gaining as much as possible. The turning of decks A and B cards generally pays \$100, while decks C and D only pay \$50, but on average, certain cards in the A and B decks require players to pay as much as \$1250, while cards in decks C and D only require players to pay as much as \$100. In normal subjects, the initial preference for the higher reward of decks A and B gradually changes, and within thirty moves it fully migrates to decks C and D, where the losses are relatively lower than in the other decks. Although normal players cannot perform precise calculations of their gains and losses, they are able to develop the feeling that decks A and B are more “dangerous” than decks C and D.³⁶⁵ This feeling is completely absent in patients with frontal lobe damage, who after early general sampling, continue to turn more cards in decks A and B, forcing them to take extra loans to continue in the game. At the same time, they persistently make the least advantageous choices longer than any other player observed in the same task. This form of abnormal behavior shows

send information to a polygraph which records the increase in conductivity that the sweat produces with respect to a weak electrical current traveling between electrodes. In normal patients, the exposure to stimuli with high emotional content of fleshly fears and lusts, as in scenes of physical pain, horror or sexually explicit images, produces changes in body states such as sweat secretion.

³⁶⁴ These results show that patients failed to generate any skin conductance whatsoever; even though they were afterwards able to describe in words the emotions that should have been generated with each image, as well as the position of the respective image in the time sequence of the slide show (Damasio, Tranel, and Damasio 1991).

³⁶⁵ According to Damasio, “there is a nonconscious process gradually formulating a prediction for the outcome of each move, and gradually telling the mindful player, at first softly but then louder, that the punishment or reward is about to strike if a certain move is indeed carried out” (Damasio 2005, 214).

that although patients with frontal lobe dysfunction are still sensitive to punishment and reward, these feelings do not contribute to the automated marking effect that would help them predict future harmful events; they have become insensitive to losses and only respond to gains (Damasio 2005, 216).³⁶⁶

The third type of test of the Somatic-marker hypothesis was also devised by Bechara et al. (1996) as a combination of skin conductance tests with gambling experiments. The researchers measured the skin conductance responses of seven patients with prefrontal damage (and twelve normal controls) during the performance of the IGT card game. Both patients and control subjects generated skin conductance responses when selecting cards followed by penalties or rewards. However, after a number of trials, control subjects also began to generate these responses prior to their selection of a card, when pondering from which deck to choose. In contrast, no patients with frontal lobe dysfunction showed such an anticipatory skin conductance response. As Bechara et al. concluded, the absence of anticipatory skin conductance responses is a correlate of the patients' insensitivity to future outcomes. This is compatible with the idea that these patients fail to activate biasing signals serving as value markers in the distinction between choices with good or bad future outcomes. The results further confirmed two important components of the Somatic-marker hypothesis. First, concerning the role that these signals have in the enhancement of attention and working memory relative to representations associated with the decision process. Second, the results underscored the marking effect that these signals hail from the bioregulatory

³⁶⁶ Recent studies have confirmed the observations of Bechara et al. on IGT tests regarding key brain structures associated with life-like decision making. Among these structures, the most important are the dorso-lateral prefrontal cortex (DLPFC) associated with working memory; the VMPC that is activated in the experience of reward and in the anticipation of responses (Bechara et al. 1996); and the amygdala, which is activated with fearful anticipatory responses in front of losses (Bechara, Damasio, and Lee 1999). In confirmation of these observations, Manes (2002) has found that lesions to the dorso-lateral prefrontal cortex (DLPC) impair working memory necessary for decision making. Similar results regarding the effects on working memory have been replicated by Sanfey et al. (2003) and Maia (2004). Further, Rolls et al. (1994), Clark (2004) and Hornak et al. (2004) have found that deficits in reversal learning are also a relevant cause of impaired performance in IGT tests and of diminished emotionality (Barrash, Tranel, and Anderson 2000).

machinery sustaining somatic homeostasis, or state of equilibrium, which can be expressed in emotions and feelings (Bechara et al. 1996).

6.4.3 *Limits of the Somatic-Marker Hypothesis*

The Somatic-marker hypothesis is compatible with the philosophical perspective advanced by Hume's theory of human emotions. Further, this hypothesis provides neurobehavioral evidence supporting an alternative to philosophical positions that assign to emotions little or no value within the processes of reasoning and decision making. Neurobehavioral evidence emphasizes the role that the prefrontal cortices play in the processing of emotions, as well as the effects that emotions and feelings have on reasoning. These results suggest that next to a pure, logical and mathematical form of reasoning, there is another form of social or practical reasoning greatly influenced by emotions. The Somatic-marker hypothesis highlights the higher uncertainty and complexity of the personal and social domains, in which every advantageous decision must be made not only with respect to the individual's survival, but also with the quality of such survival (Damasio 2005, 169). In the context of these critical complex decisions for which time is generally of the essence, the traditional logical and mathematical methods of expected utility or utility maximization of Choice Theory are usually of little avail. In face of the complexity of personal and social domains, and of the constraints and limitations on both attention and working memory to choose among social and moral choices, the Somatic-marker hypothesis reveals the important heuristic role that emotions and feelings seem to play in the most complex forms of decision making.

As in the case of its seminal philosophical formulation in Hume, the Somatic-marker hypothesis describes a process of personal and social decision making that is the most frequent in normal individuals, and more in tune with the distinctiveness of the unreformed human nature. Consistent with the development of the Theory of Emotions, this exposition of recent neurobe-

havioral evidence confirms the critical role that feelings appear to play in the organization and ranking of ideas within reasoning and decision making. Nonetheless, the Somatic-marker hypothesis does not provide an alternative to the condition of slavery that is distinctive of the unreformed human nature under the powerful control exercised by violent innate feelings. As in the case of Hume's theory, Damasio holds that the marking effect of feelings is influenced by subjective perspectives, and "tuned" by socio-cultural conventions. Damasio asserts that "the automated somatic-marker device of most of us lucky enough to have been reared in a relatively healthy culture has been accommodated by education to the standards of rationality of that culture" (Damasio 2005, 200). In this sense, the Somatic-marker hypothesis seems to face the same constraints characteristic of Hume's and Smith's theories of emotions and sentiments, which underscore the limitations of socio-cultural factors to counteract the effect of biological preferences determined by innate feelings, as detailed in chapter 2.³⁶⁷

Perhaps one of the most important areas revealing the need for an alternative model to describe the processes of reasoning and decision making corresponds to altruistic actions. The basis of the Somatic-marker hypothesis on innate preferences related to survival renders this model incapable of expressing preferences for sublime actions involving the nullification of the self, or its willingness to bear pain and reject pleasure.³⁶⁸ Damasio recognizes that the set of feel-

³⁶⁷ Damasio observes that socially tuned somatic states that are perceived by the prefrontal cortex constitute the important organizational factor that marks the higher value of one image with regard to all others, while also boosting basic attention and basic working memory (Damasio 2005, 197-198). The criteria that are needed to rank and create an order among all possible alternatives is provided by somatic markers, "which express at any given time, the cumulative preferences we have both received and acquired" (Damasio 2005, 199). As chapter 2 details, the dominant violent nature resulting from the strong bias of images of the self cannot be overcome by the relative weakness of social and cultural conventions. The violence of the selfish passions primarily manifested in the lusts and fears of the flesh cannot be mitigated, controlled or "tuned" by preferences of social or cultural conventionalisms. In this regard, the description that the Somatic-marker hypothesis provides of the unreformed human nature coincides with Hume's seminal view. Still, as in the case of Hume's theory of human emotions, this hypothesis does not account for any image able to determine a particular feeling able to control violent innate passions. Without such an image and feeling, there seems to be no hope for the foundation of a free, peaceful and just society whose preferences are essential for promoting and sustaining a developed economy and polity.

³⁶⁸ Damasio is aware of the limitations of his hypothesis to explain altruistic behavior, which only manages to describe these types of superior actions as based on the avoidance of "future pain and suffering that would have been caused by loss or shame upon not behaving altruistically" (Damasio 2005, 176).

ings and intentions that results from a number of factors rooted in our organism and culture limit the exercise of individual freedom. Nevertheless, he also acknowledges that there is still in human nature a capability to attain such freedom and to perform “actions that may go against the apparent grain of biology and culture.” The manifestation of this form of freedom is what the author considers as the basis of “sublime human achievements” (Damasio 2005, 177). Hence, as in the case of altruistic actions, those even higher forms of sublime human actions, whereby individuals even give their own lives for the lives of friends or strangers, cannot be described according to the mechanism provided by the Somatic-marker hypothesis. Considering the importance that these preferences seem to have for the formation and sustainment of peaceful and prosperous societies, an alternative process to explain them should be pursued.

6.5 The Role of the Sublime Palpation in Decision Making: the Supra-Somatic Marker Hypothesis

Freedom from the slavery of reason to innate biological or acquired social preferences underlies Palpational Rationality’s departure from the classical dichotomy between body and mind, which seems to have resulted from the influence of the Aristotelian system. As chapter 3 detailed, Palpational Rationality is instead erected upon the basis of the Augustinian Trinitarian understanding of human nature according to its particular assimilation by Luther and Calvin. In this context, chapter 3 describes the different assumption of the universe’s finiteness and the consequential recognition of the existence of a first cause in creation. These foundations constitute the basis for the formulation of an integrative understanding of human nature contrary to the dualistic Aristotelian view. The relativistic problem of the dualistic view is here manifested not in the classical Scholastic position perfected by Descartes between “being” and “thinking,” but in the exclusion of “loving” as another essential human dimension.

Different from the dualistic view sustained by Scholasticism within the Roman Catholic Church, the more complex Augustinian understanding of a Trinitarian human nature (being, thinking, and loving) characterized Luther's and Calvin's departure from the influence of Aristotle on Christian theology. This departure seems most evident in the case of Calvin's understanding of preferences manifested in the notions of what this dissertation calls palpational freedom, justice, and altruism. Such distinctive preferences may be consolidated in individuals of Protestant tradition as a result of the Sublime Palpation of Christian Freedom in the context of the agential role performed by the distinctive horizontal structure of the Reformed Free Church. According to the evidence examined in chapter 1, the preferences distinctive of the Protestant tradition correspond to a "sense of freedom" that seems to be at the core of the increased economic and institutional outcomes characteristic of individuals within societies of Protestant tradition. The unique assimilation of a Trinitarian perspective of human nature that underlies Luther's and Calvin's departure from the Aristotelian Scholastic tradition underscores that in addition to the human dimensions of its "being" and "thinking" there seems to be a substantial human dimension involving "loving." The latter is understood by Palpational Rationality as the ability to palpate the Love of God for the human race manifested through Christ's redemptive ministry.

As Damasio demonstrated in his seminal work *Descartes' Error: Emotion, Reason, and the Human Brain* (2005), the neurobehavioral evidence of the essential role that feelings have on reasoning has rendered obsolete Descartes' reception of the Aristotelian dualism distinctive of the Scholastics. This dualistic vista is manifested in Descartes' célèbre proposition "cogito ergo sum" (I think, therefore I am).³⁶⁹ Rather, this neurobehavioral evidence seems to favor the understanding that Luther and Calvin draw from Augustine to substantiate their departure from the Aristotelian influence on Christian theology characteristic of the Roman Catholic Church. At the core of

³⁶⁹ The Cartesian proposition "cogito ergo sum" (Descartes 1664) suggests an incomplete understanding of human nature's complexities.

this departure distinctive of the Protestant tradition appears to be the understanding of a “loving” dimension in human nature in addition to its “being” and “thinking.”

From the neurobehavioral point of view, the primary type of triggering and evaluative images produced by body states, and the secondary images formed as a result of body-state changes, are completed by a third type of images that play an important role in the process of decision making. This third type refers to images of processes of juxtaposition of primary and secondary images, which constitutes the subjectivity distinctive of human experience. The first two images are the somatic components of the neural basis of the self, while the third corresponds to the meta-somatic neural basis of the self, or what Damasio calls the “meta-self” (Damasio 2005, 241).³⁷⁰ As Damasio observes, the state of the self is continuously and consistently reconstructed as a result of the successive perception and representation of somatosensory images, primary emotions, secondary emotions, feelings, background feelings, and non-body sensory signals (Damasio 2005, 240).

In addition to those feelings that originate from primary or secondary emotions,³⁷¹ Damasio refers to the existence of a third category of feelings that are totally independent of any kind of emotions, which he calls “background feelings.” Damasio holds that this form of feeling precedes all others in human nature, and corresponds to “the feeling of life itself, the sense of being.” It is the form of feeling perceived most frequently in a human life time, for it is this type of feel-

³⁷⁰ For Damasio, the neural basis of the self resides with the continuous reactivation of two somatic-based representations: first, the combination of memories of the past and of the planned future that define a human being’s identity. Second, the representations of individuals’ body states both in what they have previously been and of what they currently are (Damasio 2005, 239).

³⁷¹ Given the different neurobiological structures and functions involved in their production, there are substantial differences between primary and secondary emotions because the process of primary emotion formation lacks the first two stages that are present in the formation of secondary emotions (Bechara, Damasio, and Lee 1999; Bechara, Damasio, and Damasio 2003). In this regard, after a stimulus is perceived by the brain’s sensory cortices, the first stage of primary emotion formation involves the direct signaling of the amygdala within the limbic system. In the second stage, the amygdalae involuntarily activate the peripheral, motor, endocrine and neurotransmitter nervous subsystems, as described above. The substantial difference between the process of primary emotion formation and that of secondary emotions is the absence of the voluntary activation of cerebral cortices in the reconstruction of images under the guidance of dispositional representations characteristic of steps 1 and 2 in Figure 24. The exclusion of the prefrontal cortex structures was the distinctive understanding of emotions generally upheld until the revolutionary discovery of secondary emotion processes, and their relevant role for reasoning and decision making.

ing that exists in-between the feelings of emotions. These feelings do not represent a specific part of anything in the body, but rather “an overall state of most everything in it.” Without them, the very core of the representation of the self seems broken (Damasio 2005, 150-151). Although very relevant to the context of complex decision making, the topography of the circuits involved in the formation of background feelings remain largely unknown. The neural connections that allow for the representation of current body states involved in this type of feelings take place in multiple structures and circuits located in the cortical and subcortical regions of the brain. As Damasio observes, background feelings remain as one of the least studied systems of the brain because in addition to their natural complexity, many of the inputs related to them refer to visceral states that reach “nonmapped” brain regions (Damasio 2005, 150-151).

In line with Luther’s and Calvin’s view that rivaled Aristotle’s dualistic vista, it seems that the somatic components of the neural basis of the self require the participation of a third and meta-somatic component in order to generate the subjectivity that is proper to each human experience. Different from the neural structures that support the image of an object, and those that support the image of the self as it changes when the previous is perceived, Damasio notes that there may exist a third type of neural structures that are reciprocally interconnected with the first two, and which he refers to as a “convergence zone.”³⁷² Accordingly, Damasio asserts that subjectivity emerges when the brain is producing “not just images of an object, not just images of organism responses to the object, but a third kind of image, that of an organism in the act of perceiving and responding to an object” (Damasio 2005, 243). Thus, Damasio concludes that the self alone cannot know when the organism is responding to an entity, but the meta-self might know, provided that “(1) the brain would create some kind of *description of the perturbation of the state*

³⁷² This convergence zone may be the neural substrate needed to build dispositional representations both in cortical and subcortical brain regions that continuously produce “a *dispositional representation of the self in the process of changing as the organism responds to an object*” (Damasio 2005, 242 italics in the original).

of the organism that resulted from the brain's responses to the presence of an image; (2) the description would *generate an image of the process of perturbation*, and (3) the image of the *self perturbed* would be displayed together in rapid interpolation with the image that triggered the perturbation" (Damasio 2005, 241, italics in the original).

The somatic and meta-somatic components of the neurobiological processes of reasoning and decision making constitute the open access that the mind appears to have to those factors influencing behaviors naturally determined by innate emotions and their feelings. Given that markers used for decision making can be influenced by education and socialization, they may serve as a means to either sever the original form of slavery to violent passions characteristic of human nature, or subdue such slavery and renew human nature. In like manner, the existence of neural structures that allow for a meta-somatic perception of images regarding the different responses of the self appears to be another important component required to attain this unique form of liberty. Through these venues of meta-somatic perceptibility, as well as the influx of education and socialization, the Sublime Palpation of Christian Freedom seems capable to produce decision-making processes and preferences opposed to those determined by innate feelings.

The neurobiological evidence seems to further support the importance that Palpational Rationality renders to meta-somatic impressions like the Sublime Palpation of Christian Freedom because no somatic marker, either innate or acquired, appears capable to counteract the strong marking effect produced by violent feelings. In harmony with the treatment provided in chapter 2 of Hume's view of human nature, this neurobehavioral evidence seems to confirm that as lusts and fears are the most powerful markers of reasoning and decision-making processes, individual freedom appears unattainable without the integration of a marker of supra-somatic nature. Hence, the essence of Christian Freedom perceived through the Sublime Palpation seems to provide the

supra-somatic marker able to overcome the slavery produced by innate feelings, which forms the basis of what Damasio calls “sublime human achievements” (Damasio 2005, 177).

The main object of this sublime sense is a meta-somatic image or impression, whose existence has its source not in the human self.³⁷³ The third type of images perceived by the meta-self seems to provide the neurobehavioral foundation for Luther’s and Calvin’s interpretations of Scriptures regarding the distinctive human capability to palpate the Sublime Image of God’s Love.³⁷⁴ This image may be super-juxtaposed to the somatic-based image of body states by which external entities are organized and ranked based on innate, or acquired self-centered preferences. Hence, the perception of the Sublime Palpation of Christian Freedom, in conjunction with the renewed subjectivity and acquired preferences that it seems to determine, may allow for a norm of action within individuals that moves them to behave freely from the enslaving power of their violent selfish passions. The perception of this Sublime Palpation, as in the case of Damasio’s notion of “sublime altruism,” appears to determine deeds and actions that have an intrinsic moral and social value superior to those naturally determined by the somatic-based images of self-survival or self-love. This forms the core of the micro-level explanation that Palpational Rationality offers to the macro-level evidence correlating the Protestant “sense of freedom” with increased levels of economic and institutional development, as shown in chapter 1.

In brief, the somatic-marker hypothesis comprises the marking effects of body states that highlight certain images over others. This first element is in line with the neurobehavioral evidence that underscores the general impact on reasoning and decision making determined by innate biological or social manifestations of self-preservation and self-interest. In this regard,

³⁷³ The term “meta-somatic” derives from the addition of the Greek prefix “meta” for “beyond” or “transcending” to the Greek noun “soma,” or “body.”

³⁷⁴ As described in chapter 4, the preferences of palpational freedom, justice and altruism appear to result from the special marking effect attributed to the Sublime Palpation of God’s love for the human race. Regarding the neurobehavioral dimension of altruism, Damasio seems to acknowledge the existence of these meta-somatic marking effects when recognizing that there is still in human nature an ability to perform “actions that may go against the apparent grain of biology and culture” (Damasio 2005, 177).

Hume's understanding of the unrenewed human nature seems to be partially confirmed by the neurobehavioral evidence in support of the dominating effect of feelings on reason. It appears partially confirmed because the same neurobehavioral evidence also seems to show that such a strong marking effect of body-state images, when tuned by self-centered preferences, render social conventions too weak to exercise any form of control over the more powerful innate passions, as Hume believed. In addition to the imprint now recognized to emotions on reasoning and decision making, the present dissertation adds the structural components and neural functionality of another critical process comprised by supra-somatic markers. Based on the capability to perceive meta-somatic images distinctive of the human meta-self, the supra-somatic marking effect of the Sublime Palpation of Christian Freedom is considered as capable of counteracting and mitigating the violent slaving influence of innate feelings. This counteracting effect constitutes the neurobehavioral basis of the impact that the Sublime Palpation of Christian Freedom appears to have on the formation of preferences regarding palpational freedom, justice and altruism, which seem associated with the institutional and economic macro-level outcomes observed in individuals of Protestant tradition.

The hypothesis of the Supra-somatic marker follows the same steps of the Somatic-marker Hypothesis developed by Damasio, but with the addition of the organizational effects of mental images resulting from palpating the Sublime Image. In like manner, this process also involves the increasing tuning effect of the renewed subjectivity, decision-making processes, and preferences that seem consolidated within the Reformed Free Church, according to its agential role as school of palpational freedom. Given the neurobehavioral importance assigned to belief on the modulation of emotions and on reasoning, Figure 27 shows that the supra-somatic marking effect characteristic of the Sublime Palpation implies the unique heightening that belief adds to this palpation.

Following the same first steps of Damasio's Somatic-marker hypothesis, Figure 27 shows in a counterclockwise manner from top left the first stage of any decision-making process, which begins after a stimulus is perceived by the primary somatic sensory cortices. As seen before, the mind is here exposed to a wide range of unordered or uncategorized images that have been previously perceived and stored in diverse higher-order association cortices, which form the knowledge used to make a specific decision. In the second stage, under the guidance of dispositional representations held in the association cortices discussed by Damasio, the reconstructions of the stored images are retrieved without organization and brought into focus at the prefrontal cortex. This is performed by the intermediation of both basic attention and basic working memory. As in the case of steps three and four of Damasio's Somatic-marker hypothesis, the unorganized retrieval of stored images in the prefrontal cortex involuntarily signals the limbic system which in turns activates the peripheral, motor, endocrine and neurotransmitter nervous subsystems. Also according to the loop-like and integrative nature that Damasio assigns to this process, involuntary signals from the nervous subsystems activate different cortical and subcortical structures of the brain interconnected with the prefrontal cortex, as shown in steps five and six.

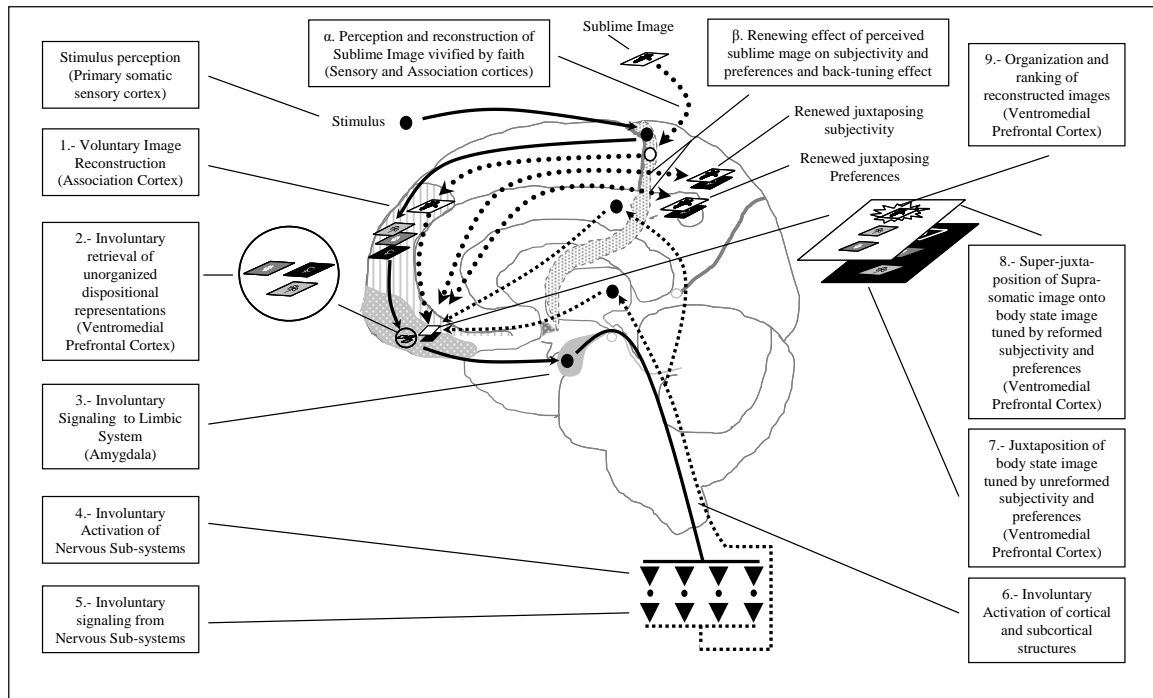


Figure 27. Supra-Somatic Marking Process
(Data from Damasio, 2005, 177, 180-197, 240-243).

Once the images proceeding from the nervous subsystems activate cortical and subcortical structures, the close interconnection of these structures with the ventromedial prefrontal cortex allows for the formation of the image of current body states, as also found in the Somatic-marker hypothesis. In the case of unrenewed human nature, this image is juxtaposed with the original reconstructed images of external entities triggering the process of feeling formation, as shown in step seven of Figure 27. Different from the Somatic-marker hypothesis, this is not the final stage for the expression of values or preferences determining the definitive organization and ranking of previously reconstructed ideas. Rather, the supra-somatic reconstruction of the Sublime Image appears to be super-juxtaposed on the somatic image of body states. As we have seen before, this may refer to unique cognitive capabilities that the convergence of human brain structures have to construct meta-somatic images, or what Damasio calls the “meta-self.”

The final step of the supra-somatic process is the organization and ranking of originally reconstructed images accomplished by the super-juxtaposition of the reconstruction of the Sublime Image of God's love for the human race, as it is also tuned by the renewed subjectivity and preferences that this Image determines in the individual. In this manner, the final outcome seems to be a supra-somatically marked image that is preferred over the somatically marked images of body states. The extra boosting effect the Sublime Palpation of Christian Freedom appears to produce on attention and working memory, which results from the magnifying imprint of belief, may constitute the other important effect that enables the super-juxtaposition of the Sublime Image over somatic images of body states.

The supra-somatic marker may produce a more acute and prolonged boosting effect on attention and working memory given the intrinsic value of the Sublime Image and superior magnifying effect of the belief in Christ's Freedom. In this regard, it differs from the lower effect of the somatic marker, whose boosting of attention and working memory is driven by "basic preferences inherent to biological regulation" (Damasio 2005, 197). These differences seem to reflect the effect that Hume assigned to beliefs as boosting factors that can intensify impressions, as shown in chapter 2. The over-juxtaposing effect characteristic of the Sublime Palpation appears to determine a different standard for the organization and ranking of factual knowledge, which reflects a superior criterion for complex social and moral decision making.

The process of the supra-somatic marker integrates the convergence of brain structures that allows for the reconstruction and involuntary retrieval into the ventromedial prefrontal cortex of the meta-somatic Sublime Image, whenever a complex process of reasoning and decision making is undertaken. Through these neural venues, the unique heightening of this Image resulting from the belief in Christ's freedom seems to determine an outcome that is elusive if relying only on somatic impressions of body states. This outcome suggests the progressive liberating effect of

the Sublime Palpation of Christian Freedom on the enslaving effect that innate feelings exercise on the unrenewed reason. The freedom that results from this Sublime Palpation also appears associated with renewal in the subjectivity and preferences of the individual, which through its tuning effect can progressively reinforce the supra-somatic marking influence that this palpation has on subsequent decision-making processes, as the β step of Figure 27 shows. Hence, the stages of the Sublime Palpation's supra-somatic effect provide a description of the neural process associated with the liberating effect of Christian Freedom, which forms the basis of Palpational Rationality as the decision-making model of the Protestant Ethic of Development.

Recent research has started to open the path for testing the Supra-somatic hypothesis proposed in this dissertation on advanced neurobehavioral methods. Evidence from recent neurobehavioral studies seems to support the modifications that this dissertation proposes to Weber's thesis concerning the developmental effect that he assigns to anxiety regarding predestination. Inzlicht et al. (2009) have found evidence of what they call "neural markers of religious conviction," which are associated with reduced reactivity in the anterior cingulate cortex (ACC), a cortical system involved in the experience of anxiety that is relevant for self-regulation. Their results appear to confirm that religious beliefs act as a buffer against anxiety, and minimize the experience of error (Inzlicht et al. 2009, 385).³⁷⁵ Inzlicht et al.'s study constitutes a first step in future research aimed to demonstrate that contrary to Weber's view, "religion lowers anxiety-related neural activity, and not the other way around" (Inzlicht et al. 2009, 391).

³⁷⁵ This study seems to provide further confirmation on emerging research indicating that religion reduces anxiety. Particularly, Tapanya et al. (1997) found that overall for both Thai Buddhists and Canadian Christians an intrinsic orientation toward religion was associated with decreased worry, but that an extrinsic orientation among Buddhists, in contrast to Christians, was found to be linked to greater worry. Furthermore, Inzlicht et al.'s study seems to confirm the findings of Hajcak et al. (2003) implying that these types of convictions are not the product of a rigid need for certainty, but rather that the pattern of neural and behavioral results associated with less error-related negativity (ERN) is characteristic of low anxiety. Although not including important research recently produced in this field, Shreve-Neiger (2004) offers a critical review of the literature on religion and anxiety.

Recent neurobehavioral studies are also starting to unveil the importance that this dissertation attributes to the Sublime Palpation of Christian Freedom. Using functional magnetic resonance imaging (fMRI), recent studies have found that improvised praying among highly religious members of the Danish Lutheran Church's Inner Mission (IM) activate a strong response in the temporopolar region, the medial prefrontal cortex, and the temporoparietal junction (Schjoedt et al. 2009). As described earlier, these are the three classic areas of Theory of Mind that have been extensively investigated in studies of social cognition.³⁷⁶ The essence of the Sublime Image in the Supreme Self of God described in chapter 3 seems to form the core of this neural marking effect. As observed by the researchers, "IM participants mainly think of God as a person, rather than as an abstract entity" (Schjoedt et al. 2009, 205). Different from the emphasis that Weber placed on the doctrine of Predestination, the marking effect that Palpational Rationality attributes to perceiving the Sublime Image of God's love in Christ seems to be more relevant for this developmental marking effect. This observation appears in line with the evidence provided by Schjoedt et al. (2009), which further confirms the outcomes of cognitive studies demonstrating that religious subjects are generally incapable of keeping a strict doctrinal representation of God in online cognitive processing (Barrett and Keil 1996).

Although these very recent studies provide the context for testing the Supra-somatic hypothesis, the future directions of research of this dissertation involve the neurobehavioral examination of this hypothesis from a different perspective. This involves the study of mechanisms through which the Sublime Palpation may improve complex processes of reasoning and decision making related to the design and implementation of public policy for social, institutional and economic development. This different perspective corresponds to the integration of the specific elements of the model of decision making put forth in chapter 5, concerning the effect of the Sub-

³⁷⁶ Further evidence of the activation of these three brain regions related to the Theory of Mind have been documented in recent studies (Amodio and Frith 2006; Castelli et al. 2000; Rilling et al. 2004; Schilbach et al. 2008).

lime Palpation on public policy decision-making models, with the neurobehavioral hypothesis developed in the present chapter. Such a multidisciplinary approach, increasingly popular among schools of government and public affairs, seeks to explain the micro-level mechanism through which the Protestant “sense of freedom” determines its distinctive developmental effects.

As in the case of Damasio’s Somatic-marker hypothesis, the Supra-somatic hypothesis here detailed constitutes the direction of future research, yet its foundations are equally rooted in the novel neurobehavioral evidence connecting emotions, belief, and decision making. The new findings regarding the pivotal effect that emotions and beliefs have on reasoning seem to confirm the Trinitarian view assimilated by Luther and Calvin regarding the identically distinctive human dimensions of being, thinking and loving. Next to the somatic effect attributed to emotions and feelings, the case of the sublime sense of altruism, and the distinctive human dimension of its meta-self, point to the unique supra-somatic marking effect characteristic of a third set of impressions exhibiting a meta-somatic nature. This is the type of impressions that the present dissertation denotes under the name of Sublime Palpation. In this context, there seems to be neurobehavioral grounding to support the thesis originally detailed by Weber regarding the effect that feeling and belief have on reasoning and decision making, as it forms the core of his view of the Protestant Ethic. Nevertheless, the same evidence points toward a different type of feelings than fear or anxiety, even if magnified by a belief like the one subsumed in the doctrine of Predestination. This evidence seems rather to substantiate the alternative choice of belief and emotion that this dissertation offers under the notion of the Sublime Palpation of Christian Freedom. This integration of Protestant beliefs and emotions appears to be at the core of the “sublime human achievements” determined by palpational understanding of freedom, altruism, and justice detailed in chapter 4. Thus, the incipient neurobehavioral evidence in these newly emerging fields of research seems to lead toward the type of supra-somatic marking effect that the present dissertation

describes under the palpation of the Sublime Image of Christian Freedom. In line with the macro-level evidence that shows the existence of a “sense of freedom” characteristic of individuals belonging to societies of Protestant tradition, the alternative selection of elements proposed by this dissertation, within the same template of emotion, belief and reason proposed by Weber, appears to offer a more suitable explanation of micro-level processes characteristic of the Protestant Ethic of Development.

7 Sense of Freedom, Palpatational Rationality, and the Protestant Ethic of Development

Given the importance assigned to institutions as instrumental in economic development, scrutiny of the cultural factors that shape them reveals the role played by religion. This realization forms the foundation of the template proposed by Weber to explain the outcomes of the Baden statistics, which associated specific Protestant beliefs and emotions with decision making and preferences related to economic development. The main methodological question addressed by this dissertation does not focus on the assessment of the developmental outcomes of Protestant beliefs, or dependent variable, but rather on *how* the independent variable, or Sublime Palpatation of Christian Freedom, affects decision-making processes that determine social, institutional and economic preferences fundamental to development. Accordingly, the thesis presented in this study proposes that the assimilation of the Sublime Palpatation of Christian Freedom affects processes of reasoning, decision making, and execution of complex choices in moral and social situations. These cognitive and volitional effects are considered as factors to determine preferences indispensable to social, political and economic development. Beginning with Weber's template, this dissertation offers a multidisciplinary decision-making model that draws on research since Weber's time to assess the validity of his core insights in the *Protestant Ethic* concerning micro-level preferences associated with economic and political development. Such a multidisciplinary approach seeks to connect separated methodological elements that have reflected the divided state of political science studies on the subject. Within the broad array of behavioral studies assessing the effect of Christian belief on decision making, this dissertation argues that Calvin's emphasis on Christian Freedom offers a sounder basis than Weber's focus on Predestination, as does Calvin's focus on God's love for the human race, over Weber's explanation based on anxiety related to election.

These distinctions concerning Calvin's views form the basis of Palpatational Rationality in place of Weber's Economic Rationalism, and appear to offer a better explanation for the micro-level processes that seem to underlie the macro-level effect documented in recent statistical analyses drawn from global data. As detailed in chapter 1, these studies indicate a strong association between countries of Protestant background and nations with higher levels of annual per capita gross national product (GNP) and subjective well-being (SWB) (Inglehart 1997; Inglehart and Baker 2000; Inglehart et al. 2008). Furthermore, these studies also suggest, in support of the main thesis of this dissertation, that the values in Protestant countries most associated with higher levels of individual, social and economic development are related to what is called a "sense of freedom." Finally, these studies appear to confirm the role that this dissertation assigns to the Reformed Free Church as a school of Palpatational Freedom, Justice, and Altruism for the collective manifestations of key individual preferences resulting from this "sense of freedom." In this context, the micro-level approach offered by Palpatational Rationality represents an attempt to provide an additional individual-level basis for assessing the relationship between Protestant beliefs, related emotions, and higher levels of economic and political development.

7.1 Modifications to Weber's Template of Economic Rationalism

Adjusting the template Weber used to evaluate the relationship between Protestant beliefs, emotions and developmental outcomes, the present research incorporates a different choice of factors with a wider scope of developmental effects. Instead of the effect Weber attributed to the belief of Predestination, the present study focuses on the Principle of Christian Freedom. Contrary to Weber's treatment of fear and anxiety arising from "certitudo salutis," this study underscores the effect of the Sublime Palpation. Thus, this dissertation reshapes Weber's mechanism, which focused on the psychological sanctions imposed by the anxiety related to Predestination on

key forms of developmental behavior. As explained in chapter 1, the deliberately “superficial and unrefined” treatment of Calvin’s views undertaken by Weber seems to have led him to consider Predestination, in conjunction with the anxiety related to election, as the transformative behavioral element of Protestantism. This path is contrasted with the cognitive and volitional effect that this dissertation assigns to Calvin’s Principle of Christian Freedom and the Sublime Palpation in overcoming the distortive effects of innate basic emotions on reasoning and decision making. The Principle of the Christian Freedom, or Law of Liberty in Christ, as treated by Calvin in the *Institutes*, constitutes the core Protestant belief of this dissertation’s framework. As detailed in chapter 4, Calvin’s focus on Christian Freedom seems to have had another substantial effect on the horizontal organization of the Reformed Free Church. The lasting effects that the “Sense of Christian Freedom” has produced on the structure of the Reformed Free Church suggest the importance that this dissertation attributes to the collective manifestation of individual decision-making processes and preferences characteristic of Palpational Freedom, Justice and Altruism.

In addition to its focus on Christian Freedom, Palpational Rationality also emphasizes the Sublime Palpation of the Image of God’s love for the human race expressed in Christ’s redemptive ministry. This impression contrasts with Weber’s choice of anxiety as the essential emotion in his cognitive system of Economic Rationalism. This dissertation argues that the modified determinants described by Palpational Rationality better underscore the micro-level and multifaceted dimension of changes that inform reasoning and decision making in complex social and moral situations, thereby offering a more appropriate individual decision-making model relating to social, political and economic policy choices.

The impact that Weber’s template assigns to emotions and beliefs on reasoning underscores the cognitive role that Hume attributed to passions, an effect further confirmed by the evidence of recent neurobehavioral studies. As shown in chapter 2, Hume suggested that the distinc-

tive attributes of an object are magnified by beliefs. This heightens ideas formed of those objects that reasoning “ad infinitum” cannot destroy. The theoretical foundations that Hume used to sustain his cognitive system lent support to his distinctive view regarding the slavery of reason to passions. Recent evidence from clinical, neuroimaging and behavioral studies appear to confirm the critical role that emotions and beliefs have on reasoning and decision making, lending partial support to Hume’s theory regarding the effects of passions on cognitive processes (see chapter 6).

Palpational Rationality differs from Hume’s template in its limited closed system of impressions, which only includes the form of inferior love whose object is the human self. Given the unique human capability, or “sense,” to perceive meta-somatic images established by neurobehavioral evidence, the open system of emotions distinctive of Palpational Rationality includes the supra-somatic impressions whose object is the Image of the Supreme Self of God (see chapter 2). In this sense, Palpational Rationality also emphasizes the importance that Adam Smith gives to the Christian definition of Love in his *Theory of Moral Sentiments*, while adding the supra-marking effect distinctive of this palpation when perceived in relation to God’s Supreme Self. Thus, the different foundations of Palpational Rationality underscore the human potential or “sense” to perceive the “reality of freedom.” This vantage point contrasts with Hume’s view regarding the “illusion of freedom,” given his inexorable slavery of reason to basic passions. As an alternative to Hume’s Principle of Necessity, the Sublime Palpation of Christian Freedom involves the power of the Supreme Self to set in motion the universal chain of causation, and to interrupt this universal chain in its connection between impressions, ideas and actions. This power is at the bottom of the renewing and liberating effect on mind and will that this dissertation describes under the Supra-Somatic Marker Hypothesis detailed in chapter 6. Thus, the new criterion for decision making and preference formation resulting from this intervention seems to substantiate the renewing and liberating effect that this dissertation attributes to the Sublime Palpa-

tion of Christian Freedom on cognitive processes, which is at the basis of the Protestant Ethic of Development.

Hume confronts the implications of his assumption of infiniteness regarding the universal chain of causations, and of a closed system of emotions, in his search for the sources of the “sense of morals.” He openly recognizes that “besides all those qualities, which render a person lovely or valuable, there is a certain *je-ne-sçai-quoi* of agreeable and handsome, that concurs to the same effect” (Hume 1978, 612, italics added). Different from the advice that he previously gave to politicians and moralists to promote the redirection or satisfaction of unconquerable violent passions, Hume acknowledges in this passage the authority of those moralists who “account for all the sentiments of virtue by this sense,” considering their hypothesis as “very plausible” (Hume 1978, 612). He notes that “it requires very little knowledge of human affairs to perceive, that a *sense of morals* is a principle inherent in the soul, and one of the most powerful that enters into composition....This observation may be extended to justice, and the other virtues of that kind. Tho’ justice be artificial, the *sense* of its morality is natural” (Hume 1978, 619, italics added). Hence, Hume suggests the presence of an innate principle in human nature that allows for the perception of the “sense of morals” indispensable to build a just, peaceful and free society.

This recognition substantiates the main critique that Palpational Rationality erects against a model of cognition assigning predominance to the effect that basic emotions like lust and fear exercise on reason. Similarly, this recognition seems to agree with the modifications that Palpational Rationality offers to Weber’s view of anxiety and Predestination as factors underlying the developmental effect of Protestantism. The alternative foundations of Palpational Rationality regarding the finiteness of the universal chain of causation and open set of emotions is in line with the human capability confirmed by neurobehavioral evidence to perceive meta-somatic impressions like those that Hume recognized in the “sense of morals.” The Principle that determines

the perception of this “sense of morals” resembles the liberating effect that Palpational Rationality attributes to the Sublime Palpation of Christian Freedom. This liberating effect seems to determine the form of reasoning and decision making at the core of developmental preferences distinctive of a just, peaceful and prosperous society; the essence of the Protestant Ethic of Development.

The failure to counteract the violent power of self-love within the limits of human nature is the weakest element of Hume’s and Smith’s systems of human emotions. This constitutes the most substantial difference between their systems and Palpational Rationality. Conventions are for Hume the source of justice that he proffers to remedy the noxious effects of selfishness within the social context. Still, social conventions are in essence ideas, which Hume recognizes as unable to overcome the enslaving effect of basic feelings (see chapter 2). The main limitation of Hume’s and Smith’s argument is to assume that the effects they attribute to society and its conventions to subdue selfishness are reproducible in any community. Rather, these effects seem to reflect the liberating imprint of the Sublime Palpation of Christian Freedom characteristic of the Reformed Free Society, which served as the model of their observations.

Such an alternative explanation appears to be in closer agreement with the “sense of freedom” that the macro-level evidence shows to be associated with the increased levels of economic development of Protestant countries. As described in chapter 2, a society influenced by this Sublime Palpation of Christian Freedom seems to better foster reciprocal and voluntary respect for the possessions of its members, even in the face of asymmetric possessions. It also appears to foment the capability of its members to remain focused and undisturbed by continuous pressure from their violent passions, in which the mind acutely perceives the underlying principles of the laws of nature. As chapter 3 indicates, this capability is essential for scientific and technological innovation. Finally, the Sublime Palpation of Christian Freedom heightens the condition of the

poor and weak that forms the basis of a unique “sense of altruism” necessary for the effectiveness of informal and spontaneous safety nets. In this context, the liberating imprint of Palpational Rationality’s Sublime Palpation of Christian Freedom seems to provide a closer explanation for the association between the Protestant “sense of freedom” and improved macro-economic indicators. Thus, Palpational Rationality’s modifications suggest a more plausible description of the decision-making process determining the macro-level economic outcomes associated with Protestantism than the explanation provided by Hume, which substantiated Weber’s model of Economic Rationalism.

7.2 Palpations, Christian Freedom, and the Protestant Ethic of Development

In contrast to the foundations that support the notion of “illusion of freedom” characteristic of Hume’s seminal cognitive system, Palpational Rationality relies on the finitude of the universal chain of causation, and in the understanding of emotions as an open set of impressions. As chapter 3 details, the main foundation of Palpational Rationality’s cognitive system consists in the understanding of a finite chain of causation set in motion by a necessary first Agent. This foundation formed the core of Luther’s rejection of Aristotelian cosmology, which greatly influenced the study of the physical world advanced by Galileo, Newton and the other Reformed Christian scientists. As also discussed in chapter 3, this understanding of the universe’s finitude in space and time has been recently confirmed by evidence from astrophysics, particularly regarding the singularity that defines the beginning of the universe. In contrast to the assumptions of Aristotelian cosmology, the evidence in favor of a finite universe suggests the necessity of a first Agent capable of setting in motion the universal chain of causation, and affecting the manner in which this chain unites impressions and beliefs with reasoning. The latter manifestation of this capability seems especially critical for individuals to perceive the image of this first Agent, as well as to

understand and explore the truths of the physical world. Once Palpational Rationality's alternative foundations are applied to Hume's template, they support the unique capability of human nature to perceive what this dissertation calls the "reality of freedom." This unique human capability, or "sense," underlies the differences between the means to control violent emotions of Hume's cognitive systems and that of Palpational Rationality.

The individual perception of this "sense of freedom" is evidenced in a norm of behavior expressing self-denial and love for the other in the same manner in which it is perceived in the Sublime Image of God's love manifested in Christ Jesus. This conforms with the effect that Hume attributes to belief as magnifier of certain ideas that become dominant, or "marked," in the process of reasoning. In line with Calvin's understanding of Christian Freedom, the perception of the Sublime Palpation requires the intermediation of this belief, even though the Image of God's love manifested in Christ's redemptive ministry has the inherent capability to produce intensive impressions. In the context of this marking effect, the liberating effect of the Sublime Palpation seems to determine moral and social choices that are intrinsically and extrinsically optimal. These outcomes contrast with selfish and proud actions that result from the natural propensity of innate passions. Hence, the palpation of the Sublime Image actualizes the universal disposition in the human self by which elevated moral decisions and actions can be performed. From the neurobehavioral perspective, this seems to agree with what Damasio calls "sublime human achievements," as described in chapter 6.

Hume's closed cognitive system, characteristic of the unreformed human nature, sees justice as a product of social conventions, while the open cognitive system distinctive of the reformed human nature underscores the experiencing of the Sublime Palpation. Hume attributes to justice an artificial nature, for it derives not from natural impressions, the weak sentiment of benevolence, public interest, or reason. Indeed, he observes that "the sense of justice is not founded

on reason, or on the discovery of certain connexions and relation of ideas, which are eternal, immutable or universally obligatory.” Rather, they have an artificial nature because “those impressions, which give rise to this sense of justice, are not natural to the mind of man, but arise from artifice and human convention” (Hume 1978, 496). Nonetheless, human conventions seem constrained in Hume’s view to give rise to the sense of justice given the nature of things that are the object of the most violent passions. Hume recognizes that the high desirability of things required for the satisfaction of the most violent passions, conjoined with their scarcity and susceptibility of violence by others, contribute to intensify such passions to their most magnified levels (Hume 1978, 487-488). Under these circumstances, no convention would ever seem likely to generate an impression of such a magnitude able to counteract the exacerbated innate passions. Thus, it appears that only a supra-somatic impression has the power to control and counteract the most powerful of all human somatic passions. This is particularly evident when belief magnifies the already intense allure of certain objects, and when individual circumstances heighten the manner in which they are presented to the senses.

Given the context of environmental factors that exacerbate selfishness, justice cannot be realized if humanity were to rely only on weak impressions as those deriving from the feeble nature of social conventions, as Hume implied. Rather, justice seems dependant on such supra-somatic impressions able to subdue the violent effect of the inner passions on reason. This substantiates the “sense of freedom” that Palpational Rationality deems essential for decision making and preferences associated with economic and institutional development. The spontaneous sensing of justice that preserves peace in society seems to require the liberating work that the supra-somatic impression of the Sublime Palpation produces, given its supra-marking imprint to overcome selfishness in its most heightened states. Palpational Rationality underscores the nature of this indispensable sense of freedom within the effect that the Sublime Palpation has on decision-

making processes and preferences associated with Palpational Justice. In line with this origin and nature, the potential to perceive Palpational Justice instilled in human nature appears fully actualized by the supra-somatic marking effect of the Sublime Palpation. This intrinsic supra-somatic nature seems critical for the materialization of justice even in the context of relatively unequal levels of wealth. Indeed, a society is only useful as a context for peaceful and prosperous interactions if its conventions are spontaneously accepted by all. In this manner, the Sublime Palpation through which is perceived this “sense” of Palpational Justice seems to determine the social and institutional preferences of individuals within the Free Society that contribute to the satisfaction of the necessities of most of its members.

A sense of concern for the condition of strangers seems a prerequisite for the reciprocal succor that minimizes exposure to downturns, calamities and accidents within society. This “sense of concern” for another appears to be a rare spontaneous outcome in an unrenewed human nature. As Hume asserts, “men being naturally selfish or endow’d only with a confin’d generosity, they are not easily induc’d to perform any action for the interest of strangers, except with a view to some reciprocal advantage, which they had no hope of obtaining but by such a performance....we are very limited in our kindness and affection” (Hume 1978, 519). Hume seems correct in his diagnosis concerning the extremely limited generosity characteristic of the enslaved human nature. Nonetheless, he appears incongruent when supposing that such a lack of generosity can be overcome by an oblique satisfaction of violent passions. If his closed system of impressions holds, then there seems to be no remedy to the natural preference for unbridle and direct gratification that is most alluring to the senses.

According to the open system of impressions characteristic of Palpational Rationality, the supra-somatic impression that overcomes the violent hegemony of selfishness appears capable of imprinting in the individual an unnatural sentiment of concern for a stranger. The “sense of con-

cern” for another in need is a reflection of the same concern that with respect to the condition of one’s neighbor is first perceived through the experience of the Sublime Palpation. In this context, tithing and other forms of giving developed within the church suggest collective manifestations of transformed preferences from the selfish natural propensity of individuals by which they are taught to provide for the needs of others (Brooks 2006). These preferences seem to result from the same act by which believers manifest genuine expressions of their liberation through the sensation of the Sublime Palpation. The perception of this Sublime Palpation trains the renewed in the unnatural propensity to willingly and voluntarily provide for the needs of strangers. In this regard, a most efficient form of distribution of wealth, time and other resources seems to ensue as a result of palpating the Sublime Image related to the Christian Freedom. Thus, the same principle that produces the transformation of human nature by overcoming the enslaving power of the violent passions seems also reflected in actions that provide social safety nets for the most vulnerable and needy.

The substance of optimal moral and social actions that in Hume’s view even unrenewed societies admire “under the character of greatness and elevation of mind” appears to result from the unique effect of the Sublime Palpation on the mind and will. It is with basis on this Palpational Freedom that the unrenewed society praises the “sense of altruism” of those willing to give even their lives for the lives of others. Risking one’s life, especially laying it down for others, is the measure of a heroic action when performed for the benefit of those with respect to whom there is a natural affiliation. Nonetheless, when the same action is performed with respect to those for whom there is no connection, as in the case of love for a stranger, or even an enemy, then a heroic action becomes one of a much higher order. According to Hume’s view, this is the highest expression of a “sense of morality” that is most admired by societies (Hume 1978, 612). It refers to the potential for freedom that is also distinctive of the unrenewed human nature. This natural

sense of morality infixed in the human race allows individuals to differentiate between the genuine expression of an action's decorum and probity with respect to the mere appearance of it. The potential to choose and execute moral and social choices that are both intrinsically and extrinsically optimal is equally present in all human beings. In individuals of Protestant tradition, this actualization seems to depend on the individual palpation of the Sublime Image through the unique heightening effect produced by the belief of Christian Freedom. The freedom that this Sublime Palpation produces over the effect of violent passions appears to be the distinctive attribute that at the aggregate level characterizes free societies of Protestant tradition, and the requisite for their distinctive higher levels of peace, justice and prosperity.

7.3 Roots of Palpational Rationality's "Sense of Freedom"

Augustine's influence on Luther and Calvin underscores the approach at the root of Palpational Rationality. This approach contrasts with the main tenets of Greek philosophy assimilated by the Scholastic tradition of the Roman Catholic Church, which assigned supremacy to pure reason for understanding Scriptures (see chapter 3). Luther and Calvin assimilated the importance that Augustine rendered to the unique feeling that the present dissertation describes under the Sublime Palpation. Augustine holds that the "summum bonum," or highest good of the human race, is no other than to be united with God, not only in existence and in thought, but above all, in His love. Concerning the human capability to perceive what this dissertation calls the Sublime Palpation, Augustine noted that "we have another and far superior sense, belonging to the inner man, by which we perceive what things are just, and what unjust....By it I am assured both that I am, and that I know this; and these two I love, and in the same manner I am assured that I love them....For he is not called a good man who knows what is good, but who loves it" (Augustine 1950, 372). Given this seminal influence, Luther challenged the late medieval Scholastic theology

by exposing the inabilities of Aristotelian logics and ethics to understand the universe, and to determine the nature of good actions. Guided by this “inner sense,” Luther was compelled through the study of Augustine’s partial commentaries on Romans to understand Scriptures from what is here referred to as a palpational vantage point, different from the Scholastic reliance on a-priori and logical forms of inquiry. At the core of Luther’s revolutionary approach lies the departure from the influence of Aristotelian Ethics. This rejection is found in Luther’s affirmation that “we do not become righteous by doing righteous deeds but, having been made righteous, we do righteous deeds” (Luther 1955, vol.31, 40). Luther observed that “the so-called moral interpretation of Scripture, which more correctly is the spiritual interpretation, deals with nothing but love and the attitude of the heart, with nothing but the love of righteousness and the hatred of iniquity.... And we must understand that this must be done or omitted with the whole heart, not with fear of punishment in a lavish manner or because of some puerile desire for comfort, but freely and out of Love for God, because without the love which has been poured out through the Spirit, this is impossible” (Luther 1955, vol. 25, 325).

The “inner sense” that according to Augustine substantiates the unique human capability to perceive the image of God’s Love is also present in Calvin’s method of Scriptural interpretation. Accordingly, Calvin affirms that “when we call faith ‘knowledge’ we do not mean comprehension of the sort that is commonly concerned with those things which fall under human sense and perception. For faith is so far above the sense that man’s mind has to go beyond and rise above itself in order to attain it. Even where the mind has attained, it does not comprehend what it feels. But while it is persuaded of what it does not grasp, by the very certainty of its persuasion it understands more than if it perceived anything human by its own capacity” (Calvin 1960, 559) (chapter 3, p.18-19). Furthermore, Calvin holds that “the Word of God is not received by faith if it flits about in the top of the brain, but when it takes root in the depth of the heart that it may be

an invincible defense to withstand and drive off all the stratagems of temptation” (Calvin 1960, 583). In obvious departure from the main tenets of Aristotelian ethics, Calvin concludes that “man does not choose by reason and pursue with zeal what is truly good for himself according to the excellence of his immortal nature, nor does he use reason in deliberation ... much as man desires to follow what is good, still he does not follow it. There is no man to whom eternal blessedness is not pleasing, yet no man aspires to it except by the impulsion of the Holy Spirit ... but the Spirit comes, not from nature, but from regeneration” (Calvin 1960, 286-287). Such insights from Calvin form the basis of the supra-somatic marking effect that this dissertation attributes to the Sublime Palpation

Calvin underscores the centrality of Christian freedom to his theological system as a prerequisite for rightly knowing Christ, the truth of the Gospel, and the inner peace of the soul (Calvin 1960, 834). The palpational nature of Christian freedom, as found in Calvin’s views, clearly contrasts with the psychological force that Weber assigns to doubts regarding election. Contrary to Weber’s view, Calvin’s focus on Christian freedom constitutes a force that quiets “frightened consciences before God,” which anxiously question “whether unfinished works, corrupted by the faults of the flesh, are pleasing to God” (Calvin 1960, 840). As chapter 4 explains, Calvin observes that the first manifestation of Christian freedom is its liberating effect on the law’s condemnation, which triggers anxiety regarding the forgiveness of one’s sins (Calvin 1960, 747). Christian freedom prevails over predestination in Calvin’s system because the latter is only an outcome of the former. Consequently, when predestination is removed from the effects of fore-known merits, and left only to God’s sovereign free will as manifested in Christ, humans are confronted with the immensity of God’s love (Calvin 1960, 942).

The essential role that Calvin attributes to Christian freedom as a means to quiet anxious consciences underlies his categorical rejection of any psychological coercion exercised on believ-

ers to obtain signs of their election. Thus, Calvin asserts that “Satan has no more grievous or dangerous temptation to dishearten believers than when he unsettles them with doubt about their election, while at the same time he arouses them with a wicked desire to seek it outside the way.” Calvin compares the noxious effects of one who is tormented by this doubt of election as “he [who] casts himself into the depths of a bottomless whirlpool to be swallowed up; then he buries himself in an abyss of sightless darkness” (Calvin 1960, 969). Further, Calvin considers the believers’ pursuit to make their election more certain as engulfing themselves “in a deadly abyss,” and that the only way to rightly examine this subject is “within the way” of God’s word. As he asserts: “to begin with God’s call and to end with it” (Calvin 1960, 969). In God’s Word, Calvin affirms that the believers “possess the sure and unbroken truth of the promises, so that one cannot speak of any disagreement between God’s eternal election and the testimony of His grace that He offers to believers” (Calvin 1960, 960). As Calvin concludes, “predestination rightly understood, brings no shaking of faith but rather its best confirmation” (Calvin 1960, 976).

Hence, the main view that derives from a deeper understanding of Calvin’s *Institutes* rejects the relevance that Weber attributed to anxiety concerning Predestination as the developmental factor of the Protestant Ethic. According to the evidence discussed in chapter 6 in favor of the Supra-Somatic Marker Hypothesis put forth by this dissertation, recent neurobehavioral studies show the effect that professing Protestant beliefs seem to have on lowering anxiety-related neural activity (Inzlicht et al. 2009). Different from Weber’s cognitive mechanism, adhering to Protestant beliefs appears to minimize the experience of error caused by anxiety, which hinders decision making in complex social and moral situations. Further, neuroimaging studies suggest that Protestant believers activate strong response in brain regions associated with complex decision making when perceiving the Image of God as a person, rather than any doctrinal representation as in the case of Predestination (chapter 6). Although these very recent studies seem to pro-

vide the context for testing the Supra-Somatic Marker Hypothesis, the future directions of research fostered by this dissertation involve the neurobehavioral examination of the effects that the Sublime Palpation seems to have on complex decision-making processes related to social, institutional and economic choices.

As chapter 4 describes, Palpational Rationality stresses individual and collective developmental preferences deriving from the Sublime Palpation of Christian freedom. In contrast to the importance that Weber attributes to anxiety and predestination within Calvin's system, Palpational Rationality highlights the preferences that result from the essential role that Calvin attributes to the belief of Christian Freedom. Regarding individual developmental preferences, Calvin considers as most essential to the imprint of Christian Freedom the denial of the self, and the carrying of the own cross (see chapter 4). Calvin asserts that the two fundamental pillars of the Christian life are the detachment from the images of one's self that result from self-denial, and the attachment to the image of God's Supreme Self manifested in Christ's redemptive ministry (Calvin 1960, 704). The impact that images of one's self have on decision making seems thereby mitigated and overcome by the supra-marking effect of palpating the Sublime Image of God. Such a liberating imprint appears to be essential for the formation of individual and collective preferences expressed in industrious and stewardly traits, increased levels of productivity, and in scientific and technical innovation. These are the same preferences that Adam Smith considered essential for the prosperity and wealth of nations, as discussed in chapter 4. Nonetheless, Palpational Rationality deems these preferences only as indirect and accessorial outcomes of the liberating effect that palpating the Sublime Image produces on human mind and will, still associated with increased levels of economic development.

In the context of the horizontal organization of the Reformed Free Church, the Sublime Palpation of Christian freedom further contributes to determine preferences for collective behav-

ior that are essential to social and institutional development. Within the agential role of the Reformed Free Church as School of Palpational Freedom, individuals seem to direct the liberating effect of the Sublime Palpation to develop preferences for mutual accountability and tolerance. Based on Calvin's view, these preferences appear to arise from the practice of mutual love, patience, humility and tolerance in avoiding error based on an inner understanding of Christ's liberating ministry (see chapter 4). In the Reformed Free Church believers are likely to develop preferences for controlled government resulting from the effect that the Sublime Palpation has to hold its members and overseers accountable for their service. In Calvin's view, these preferences contrast with the deviation from the original function of overseers, and lack of counterbalance by the assembly of believers, that led to abuses within the Roman Catholic Church. As Calvin notes, such deviations were particularly expressed in the practice of simony in the collection of benefices (Calvin 1960, 1090-1094). These preferences also reflect Calvin's rejection of the hierarchical structure of the Papacy as non-conforming to Scriptures and to the practice of the early church (Calvin 1960, 1087). The relevance that Calvin attributed to Christ's Law of Liberty as the ultimate source of legitimacy for ecclesiastical authority also extended to the civil realm. According to Calvin's formulation of the right of resistance, he held that "next to Him, we are subject to those men who are in authority over us, but only in Him. If they command anything against Him, let it go unesteemed" (Calvin 1960, 1520).

Palpational justice is the second important preference for collective action that appears to emerge from the Sublime Palpation of Christian Freedom within the context of the Reformed Free Church. The individual who is free from the enslaving effect of innate feelings seems to have the neural markers necessary for spontaneously acknowledging the right of others. This substantiates the prosperity of the people or "Rem Populi," characteristic of a republic. Calvin draws from Augustine the notion that this dissertation describes as Palpational Justice, when stat-

ing that “it is when the soul serves God that it exercises a right control over the body; and in the soul itself the reason must be subjected to God if it is to govern as it ought the passions and other vices. Hence when a man does not serve God, what justice can be ascribed to him, since in this case his soul cannot exercise a just control over the body, nor his reason over his vices? And if there is no justice in such an individual, certainly there can be none in a community composed by those persons. Here, therefore, there is not that common acknowledgement of right which makes an assemblage of men a people whose affairs we call a republic” (Augustine 1950, 700).

Finally, Palpational Altruism constitutes another key developmental preference that may derive from the Sublime Palpation of Christian freedom in the context of the Reformed Free Church. This notion manifests itself in Calvin’s exhortation to give to the weak not out of duty or obligation, but out of love. According to Calvin, in giving and directing goodness toward the poor, Scripture commands not to think about what each deserves, but rather to look at the image of God which exists in everyone (Calvin 1960, 696-697). The notion of Palpational Altruism proposed by this dissertation draws from Calvin’s understanding that the church’s patrimony belongs to the poor (Calvin 1960, 1074). The practice of Palpational Altruism appears to reinforce the function of believers as agents of informal means for wealth distribution, which provides an indispensable social safety net. As chapter 4 indicates, this assistance to the weak and needy is discharged in the context of the sublime understanding of God’s love and compassion, which appears to remove both stigma and dependency, traits commonly associated with aid from formal means of wealth distribution.

In brief, Luther’s and Calvin’s pathbreaking approach to Scriptural interpretation involved a rejection of the Aristotelian reliance on *Logics* characteristic of the Scholastics, and a return to the guidance of the “inner sense” for understanding Scriptures. From a behavioral vantage point, reliance on this inner sense bears the supra-somatic marking effect that this disserta-

tion attributes to the Sublime Palpation of Christ's liberating ministry. Calvin's invitation to remain continually united to "the faith which perceives the undeserving love of Christ toward us, and a new conscience and newness of life" further underscores the liberating effect that this dissertation attributes to the Sublime Palpation (Calvin 1956, 113). This is at the root of the liberating effect that the present dissertation describes under the unique marking effect that perceiving God's Love in Christ has on processes of reason and decision making. This liberating effect seems to underlie the "sense of freedom" characteristic of countries of Protestant inheritance that macro-level evidence associates with increased levels of economic development and subjective well-being (SWB).

7.4 Developmental Applications of the Protestant "Sense of Freedom"

Luther's and Calvin's rejection of the Scholastic method of inquiry regarding Scriptural truths was also extended to studying the truths of the physical world. This disposition in Luther preceded the publication of Copernicus' main postulate by twenty-six years. It also furthered the methods of inquiry developed by Galileo and Newton that marked the dawn of the Scientific and Technological revolutions in Europe. In this context, the present dissertation emphasizes another important modification to Weber's view that considered labor as the main indicator of Protestantism's developmental effect. Instead, this dissertation focuses on levels of scientific and technological attainment as more relevant indicators to describe the effect that the Sublime Palpation of Christian Freedom exerts on decision making and developmental preferences.

The acknowledgment of the "inner sense" distinctive of Luther and Calvin also underlies Galileo's new methodology for studying the universe. This inner sense manifests itself in Galileo's notion of an "intensive understanding" through which humans are capable of apprehending the principles governing the physical world, and consequently, in having "as much absolute cer-

tainty as nature itself has” (Galilei 1967, 103). According to Galileo, the knowledge of the few prepositions that the human mind is able to understand “equals the Divine in objective certainty, for here it succeeds in understanding necessity, beyond which there can be no greater sureness” (see chapter 3). The basic skill to distinguish truth from falsehood, which Galileo believed essential for scientific inquiry, seems to result from this inner sense. Thus, in his departure from the Scholastic method of inquiry of the truths of nature, Galileo suggests that “it is vanity to imagine that one can introduce a new philosophy by refuting this or that author. It is necessary first to teach the reform of the human mind and to render it capable of distinguishing truth from falsehood, which only God can do” (Galilei 1967, 57). The essence of Galileo’s most influential discoveries appears to support the existence of this sublime sense. Thus, Galileo concludes that “were it not for the existence of a superior and better sense that the natural and common sense to join forces with reason, I much question whether, I, too, should have been much more recalcitrant toward the Copernican system than I have been since a clearer light than usual has illuminated me” (Galilei 1967, 328).

The importance that Luther’s and Calvin’s notion of inner sense had upon Galileo’s approach to scientific inquiry equally influenced Newton. The trust that Newton revealed from early age in the Lutheran and Calvinistic interpretation of Scriptures informed his departure from the weight that Aristotle’s *Logics* and *Physics* had on the Scholastics. Starting from his rejection of Spinoza’s view that confused God with nature, Newton’s understanding of God as the only necessary Being led him to recognize God’s power to implant in human nature certain “senses” by which it is able to understand His nature.

As chapter 3 examined in detail, the great advances in theology, philosophy and science introduced by Luther, Calvin, Galileo and Newton seem to be closely related with the re-assimilation of the integrative method of inquiry first delineated by Augustine. This method pro-

vided a guide for inquiring into the truth of the Scriptures and for demonstrating the propositions of the physical world. The practice of freedom from the deceiving effects of violent passions forms the core of the actualized capability to perceive the truth of the Scriptures, as in the case of the value and occurrence of the universe's physical outcomes and properties. The resumption of the integrative method associated with the birth of modern sciences also suggests its importance for addressing the demands of inquiries within the behavioral and social sciences into the understanding of human nature and its potential for freedom. In the realm of individual behavior associated with institutional and socioeconomic development, the use of such an integrative method remains pivotal in assessing remote factors that play a role in the formation of developmental preferences. This integral method of inquiry underlies Palpational Rationality's multidisciplinary approach to assessing the micro-level behavioral effects that the Sublime Palpation of Christian Freedom has on decision making and on forming developmental preferences.

7.5 The Alternative Decision-Making Model of Palpational Rationality

The multidisciplinary approach characteristic of the present dissertation is inscribed within the recent direction of research that incorporates the understandings of neurobiology, psychology and sociology to decision-making processes. In this context, the system of preferences expressed through the marking effect of innate emotions informs models that assess the subjective valuation of random prospects concerning both their value and probability. The disputation of the foundational assumptions used to describe the effect of emotions on reasoning led to the adoption proposed by this dissertation of another factor in models used for decision making under risk. A factor that accounts for the "sense of freedom" associated with choices cogently superior to those ordinarily determined by unchecked innate emotions. In this general context, Palpational Rationality offers a dual descriptive and normative vantage point that includes the somatic and supra-

somatic marking effects that certain emotions have on reasoning and decision making. In its descriptive dimension, the model captures the process of decision making that is positively performed by the unrenewed human nature according to the somatic-marking effect of innate emotions. Regarding the normative dimension, the integrative model of Palpational Rationality also includes the liberating nature of this supra-somatic marking effect to correct subjective perceptions of choices from distortions concerning their value and probability. In the context of this integration, Palpational Rationality offers an alternative model of decision making for the most challenging moral and social situations, and for the formation of essential preferences associated with integral and sustainable development.

As detailed in chapter 6, historical, clinical and neuroimaging studies on focal brain damage suggest the connection between damage to the prefrontal cortices, and drastic emotional changes that impair normal reasoning. This research has produced evidence confirming the critical role that feelings seem to play in carrying out social and moral cognition. Likewise, recent neurobehavioral, neuroimaging and behavioral studies have yielded evidence of the role played by certain brain structures on belief attribution. These findings seem to lend support to Hume's view regarding the power of innate passions to affect reasoning, and of beliefs as a means to heighten emotions. The importance of beliefs and feelings for decision making has been complemented with the neurobehavioral evidence that implies the existence of unique cognitive capabilities of human brain structures to construct meta-somatic images. In this context, the relationship between beliefs and feelings as critical factors affecting decision making appears to support the effects that this dissertation assigns to the Sublime Palpation of Christian Freedom. This liberating imprint also seems to bear on distinctive preferences of individual and collective traits, which believers of Protestant inheritance form within the context of the Reformed Free Church explained in chapter 4. Thus, the perception of the Sublime Palpation, as in the case of Damasio's

notion of “sublime altruism,” appears to determine deeds and actions that have an intrinsic moral and social value superior to those naturally determined by somatic-based images of self-love. This accounts for the micro-level explanation that Palpational Rationality offers to the macro-level evidence correlating the Protestant “sense of freedom” with increased levels of economic and institutional development discussed in chapter 1.

Palpational Rationality builds upon Damasio’s rejection of Descartes’ dualistic view of human nature as limited to an ontological and cognitive dimension. The historical, clinical and neuroimaging studies of focal brain damage seem to confirm the understanding that Calvin and Luther drew from Augustine regarding human nature. According to this view, there is an essential “loving” dimension in human nature that complements its “being” and “thinking.” Given this expanded view, the Supra-Somatic Marker Hypothesis underlying Palpational Rationality builds upon the process followed by Damasio’s Somatic-marker hypothesis, as described in chapter 6. It proffers an extension of Damasio’s hypothesis to explain altruistic feelings and actions that “may go against the apparent grain of biology and culture,” or what Damasio calls “sublime human achievements” (Damasio 2005, 177).

Although the Supra-Somatic Marker Hypothesis is, as in the case of Damasio’s, the object of future research, evidence from recent neurobehavioral studies seem to provide the first confirmatory elements. As shown in chapter 6, recent neurobehavioral studies performed with Protestant believers have found evidence of “neural markers of religious conviction,” which elucidate critical elements described in the Supra-Somatic Marker Hypothesis proposed by this dissertation. Concerning the alternative developmental effect of Palpational Rationality in comparison to Weber’s emphasis on anxiety and predestination, these recent studies show that individuals’ orientation toward Protestant beliefs neutralize anxiety, and minimize the experience of errors affecting complex decision-making processes (Inzlicht et al. 2009). Likewise, recent findings

suggest that Protestant believers activate key brain regions when perceiving the image of God as a person (Schjoedt et al. 2009). These findings seem to support the focus that this dissertation places on the palpation of the Sublime Image of Christ's liberating ministry, rather than doctrines such as Predestination. Although these very recent studies provide an initial context for testing the Supra-Somatic Marker Hypothesis, the future directions of research of this dissertation involve its neurobehavioral testing from a different perspective. It focuses instead on the study of mechanisms through which the Sublime Palpation affects reasoning and decision-making processes associated with the design and implementation of developmental public policy. The future testing of the Supra-Somatic Marker Hypothesis will integrate specific elements of the model of decision making developed in chapter 5, concerning the effect of the Sublime Palpation on public policy decision-making models. As described in chapter 6, this constitutes a multidisciplinary approach that in recent years has become increasingly popular among schools of government and public affairs.

The approach characteristic of the decision-making model proposed by this dissertation contrasts with the historically dominating perspective of logical inference distinctive of Rational Choice Theory. As described in chapter 5, the most important outcome that results from using this multidisciplinary vista derives from the recognition that complex moral and social decisions are dominated by the subjective valuation of choices and their respective probabilities. In contrast to Weber's view, the relevance here attributed to Calvin's understanding of Christian Freedom coincides with the importance that Bernoulli attributes to freedom as a the individual state most powerfully affecting the subjective value of outcomes (Bernoulli 1954, 25). This view underscores the essential element of Palpational Rationality's decision-making model concerning the liberating effect that the Sublime Palpation has on the distorting effect generated by innate feelings.

As described in chapter 5, this distorting effect is one of the most accentuated in the perception of the value and probability of outcomes. Regarding value, greed or lusts are pleasure-seeking feelings that function as somatic markers with the largest subjective misrepresentations in the evaluation of gain outcomes. Conversely, anxiety and pain-averting feelings are the somatic markers with the largest distortions on the perception of value when contemplating the prospect of a loss. Based on a normalized form of Bernoulli's value function, Palpational Rationality's function represents the liberating imprint of the Sublime Palpation as the integral corrective effect on the distorted subjective perception of the value of outcomes caused by innate feelings (see chapter 5). Concerning the occurrence of outcomes, the supra-somatic effect of the Sublime Palpation seems to affect the distribution of the probability of outcomes, enabling believers to reduce the distortion of innate feelings on the probability distribution and its dispersion. Thus, based on a modification of Allais' and Prospect Theory's functions, Palpational Rationality represents the liberating effect of the Sublime Palpation of Christian Freedom as the integral corrective effect on the distorted subjective perception of the probability of outcomes. The general function of Palpational Rationality relies on the importance that Bernoulli attributes to freedom as the key individual state for outcome valuation. It also underscores the relevance that Allais lends to attitudes regarding risk for varying levels of perceptions of outcome probabilities. In this manner, Palpational Rationality's decision-making model proffers an alternative approach to Expected Utility Maximization and Prospect Theory.

The decision-making model described in this dissertation seeks to provide a more integrated approach towards understanding the process associated with the design and implementation of public policy. This dissertation adds to rational choice models the behavioral exceptions related to the assumption of strict rationality by incorporating into decision making the central role played by emotions related to core Protestant beliefs. This model extends Weber's template

of analysis to a more complete approach drawn from an alternative interpretation of Protestant beliefs and related emotions with recent evidence from neurobehavioral sciences. In view of complex challenges that decision makers face in developing countries, Palpatational Rationality provides a framework for understanding the mechanism through which the sense of freedom characteristic of individuals of Protestant inheritance affects decisions and preferences associated with increased levels of subjective well being, as well as social, economic and political development.

REFERENCES

- Ackerly, S. S., and A. L. Benton. 1948. Report of a case of bilateral frontal lobe defect. *Research Publications of the Association for Research in Nervous and Mental Disease* (27):479-504.
- Aghion, Philippe, Alberto Alesina, and Francesco Trebbi. 2002. Endogenous political institutions. *National Bureau of Economic Research* (Working Papers 9006).
- Aghion, Philippe, and Peter Hobitt. 1992. A model of growth through creative destruction. *Econometrica* 60:323-351.
- Ai, Amy L., Ruth E. Dunkle, Christopher Peterson, and Steven F. Bolling. 1998. The role of private prayer in psychological recovery among midlife and aged patients following cardiac surgery. *Gerontologist* 38 (5):591-601.
- Aichhorn, Markus, Josef Perner, Martin Kronbichler, Wolfgang Staffen, and Gunther Ladurner. 2006. Do visual perspective tasks need theory of mind? *NeuroImage* 30 (3):1059-1068.
- Allais, M. 1953. Le Comportement de l'Homme Rationnel devant le Risque: Critique des Postulats et Axiomes de l'Ecole Americaine. *Econometrica* 21 (4):503-546.
- Allais, Maurice, and Ole Hagen. 1979. *Expected utility hypotheses and the Allais Paradox: contemporary discussions of decisions under uncertainty with Allais' rejoinder, Theory and decision library; v. 21*. Dordrecht ; Boston: D. Reidel Pub. Co.
- Almond, Gabriel A. 1988. Separate Tables: Schools and Sects in Political Science. *PS: Political Science and Politics* 21 (4):828-842.
- Almond, Gabriel A., and Sidney Verba. 1963. *The civic culture; political attitudes and democracy in five nations*. Princeton, N.J.: Princeton University Press.
- Amodio, David M., and Chris D. Frith. 2006. Meeting of minds: the medial frontal cortex and social cognition. *Nature Reviews Neuroscience* 7 (4):268-277.
- Anderson, Steven W., Joseph Barrash, Antoine Bechara, and Daniel Tranel. 2006. Impairments of emotion and real-world complex behavior following childhood- or adult-onset damage to ventromedial prefrontal cortex. *Journal of the International Neuropsychological Society* 12 (02):224-235.
- Anderson, Steven W., Antoine Bechara, Hanna Damasio, Daniel Tranel, and Antonio R. Damasio. 1999. Impairment of social and moral behavior related to early damage in human prefrontal cortex. *Nature Neuroscience* 2 (11):1032.

- Andrews, Frank M., and Stephen Bassett Withey. 1976. *Social indicators of well-being : Americans' perceptions of life quality*. New York: Plenum Press.
- Aristotle. 1995. *On the heavens I and II*. Translated by S. Leggatt. Warminster: Aris & Phillips.
- Armstrong, Brian G. 1969. *Calvinism and the Amyraut heresy; Protestant scholasticism and humanism in seventeenth-century France*. Madison,: University of Wisconsin Press.
- Arrow, Kenneth J. 1982. Risk Perception in Psychology and Economics. *Economic Inquiry* 20 (1):1-9.
- Arrow, Kenneth Joseph. 1963. *Social choice and individual values*. 2d ed. New York: Wiley.
- . 1971. *Essays in the theory of risk-bearing*. Chicago,: Markham Pub. Co.
- Augustine. 1841. *Sancti Aurelii Augustini hipponensis episcopi Opera omnia*. Translated by J. P. Migne. Editio novissima, emendata et auctior, accurate Migne, cursuum completorum editore. ed. Parisiis,: venit apud editorem.
- . 1950. *The City of God*. New York: Modern Library. Original edition, .
- . 1982. *The literal meaning of Genesis*. Translated by J. H. Taylor. 2 vols, *Ancient Christian writers ; no. 41-42*. New York, N.Y.: Newman Press.
- Avempace. 1994. *Aristotle's Physics and its reception in the Arabic world: with an edition of the unpublished parts of Ibn Bajja's Commentary on the Physics*. Edited by P. Lettinck, *Aristoteles Semitico-latinus*, v. 7. Leiden ; New York: E.J. Brill.
- Azzi, Corry, and Ronald G. Ehrenberg. 1975. Household Allocation of Time and Church Attendance. *Journal of Political Economy* 83 (1):27-56.
- Bankston III, Carl L., and Min Zhou. 1996. The Ethnic Church, Ethnic Identification, And The Social Adjustment Of Vietnamese Adolescents. *Review of Religious Research* 38 (1):18.
- Baron, Hans. 1939. Calvinist republicanism and its historical roots. *Church History* 8:30-42.
- Barrash, Joseph, D. Tranel, and Steven W. Anderson. 2000. Acquired personality disturbances associated with bilateral damage to the ventromedial prefrontal region. *Developmental Neuropsychology* 18:355–381.
- Barrett, Justin L., and Frank C. Keil. 1996. Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts. *Cognitive Psychology* 31 (3):219-247.
- Barro, Robert J., and Rachel M. McCleary. 2002. Religion and Political Economy in an International Panel. *National Bureau of Economic Research* (Working Papers: 8931).
- . 2003. Religion and economic growth. *National Bureau of Economic Research* (Working Papers: 9682).

- Bartlett, Frederic C. 1995. *Remembering : a study in experimental and social psychology*. Cambridge ; New York: Cambridge University Press.
- Baumeister, Roy F., Laura Smart, and Joseph M. Boden. 1996. Relation of threatened egotism to violence and aggression: The dark side of high self-esteem. *Psychological Review* 103 (1):5-33.
- Bayle, Pierre. 1995. *Dictionnaire historique et critique*. Reprod. en fac-sim. ed. Genève ; [Paris]: Slatkine.
- Bechara, A. 1998. Dissociation of working memory from decision making within the human prefrontal cortex. *Journal of Neuroscience* 18:428–437.
- Bechara, A., A. R. Damasio, and G. P. Lee. 1999. Different contributions of the human amygdala and ventromedial prefrontal cortex to decision-making. *Journal of Neuroscience* 19:5473-5481.
- Bechara, A., H. Damasio, and A. R. Damasio. 2003. Role of the amygdala in decision-making. *Annals of the New York Academy of Sciences* 985:356–369.
- Bechara, Antoine, Antonio R. Damasio, Hanna Damasio, and Steven W. Anderson. 1994. Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition* 50 (1-3):7-15.
- Bechara, Antoine, Daniel Tranel, Hanna Damasio, and Antonio R. Damasio. 1996. Failure to Respond Autonomically to Anticipated Future Outcomes Following Damage to Prefrontal Cortex. *Cereb. Cortex* 6 (2):215-225.
- Bell, Daniel. 1976. *The coming of post-industrial society : a venture in social forecasting*. New York: Basic Books.
- . 1979. *The cultural contradictions of capitalism*. 2nd ed. London: Heinemann Educational.
- . 1988. *The end of ideology : on the exhaustion of political ideas in the fifties : with a new afterword*. Cambridge, Mass.: Harvard University Press.
- . 1996. *The cultural contradictions of capitalism*. 20th anniversary ed. New York: Basic Books.
- . 2002. *The radical right*. 3rd ed. New Brunswick, [N.J.]: Transaction Publishers.
- Benson, P. L.; Eklun, C. H. 1990. *Effective Christian education: A national study of Protestant congregations*. Minneapolis, MN.: Search Institute.
- Bernoulli, Daniel. 1954. Exposition of a New Theory on the Measurement of Risk. *Econometrica* 22 (1):23-36.

- Beza, Theodore. 1570-1582. *Summa sive descriptio et distributio causarum salutis electorum, et exitu reprobtorum*. In *Tractationes theologicae*. Geneva.
- Bollinger, Brooke, and Rob Palkovitz. 2003. The Relationship between Expressions of Spiritual Faith and Parental Involvement in Three Groups of Fathers. *Journal of Men's Studies* 11 (2):117-129.
- Borel, E. 1953a. Algèbre et calcul des probabilité. *Econometrica* 21:116-117.
- . 1953b. La théorie du jeu et les équations intégrales à noyau symétrique. *Econometrica* 21:97-100.
- . 1953c. Sur les jeux où interviennent l'hasard et l'habilité des joueurs. . *Econometrica* 21:101-115.
- Borg, Jana Schaich, Catherine Hynes, John van Horn, Scott Grafton, and Walter Sinnott-Armstrong. 2006. Consequences, Action, and Intention as Factors in Moral Judgments: An fMRI Investigation. *Journal of Cognitive Neuroscience* 18 (5):803-817.
- Brackett, Marc A., John D. Mayer, and Rebecca M. Warner. 2004. Emotional intelligence and its relation to everyday behaviour. *Personality and Individual Differences* 36 (6):1387-1402.
- Brady, Henry E., Sidney Verba, and Kay Lehman Scholzman. 1995. Beyond SES: A Resource Model of Political Participation. *American Political Science Review*, Vol. 89, Issue 2, p. 271, June 1995.
- Brady, Henry, Kay Scholzman, Sidney Verba. 1995. Beyond SES: A Resource Model of Participation. *American Political Science Review* June:271-94.
- Brecht, Martin. 1985. *Martin Luther*. 1st English language ed. 3 vols. Minneapolis: Fortress Press.
- Brewster, Karin L., Elizabeth C. Cooksey, David K. Gulkey, and Ronald R. Rindfuss. 1998. The Changing Impact of Religion on the Sexual and Contraceptive Behavior of Adolescent Women in the United States. *Journal of Marriage & the Family* 60 (2):493-504.
- Brickner, Richard Max. 1936. *The intellectual functions of the frontal lobes; a study based upon observation of a man after partial bilateral frontal lobectomy*. New York,: The Macmillan company.
- Brooks, Arthur C. 2006. *Who really cares : the surprising truth about compassionate conservatism : America's charity divide--who gives, who doesn't, and why it matters*. New York, N.Y.: Basic Books.
- Brunner, Emil. 1950. The Christian Doctrine of God. In *Dogmatics*. Philadelphia,: Westminster Press.

- Burgess, Paul W., Sam J. Gilbert, and Iroise Dumontheil. 2007. Function and localization within rostral prefrontal cortex (area 10). *Philosophical Transactions of the Royal Society B: Biological Sciences* 362 (1481):887-899.
- Burrell, Sidney Alexander. 1964. *The role of religion in modern European history*. New York: Macmillan.
- California Institute of Technology. *Brain, Mind, and Society Phd program*. California Institute of Technology 2009 [cited. Available from <http://www.hss.caltech.edu/~steve/quartz.html>].
- Call, Vaughn R. A., and Tim B. Heaton. 1997. Religious influence on marital stability. *Journal for the Scientific Study of Religion* 36 (3):382-392.
- Calvin, Jean. 1948. *Commentaries on the book of the prophet Daniel*. Translated by T. Myers. 2 vols. Grand Rapids: Eerdmans.
- . 1949. *Commentary on the book of Psalms*. Edited by J. Anderson. Grand Rapids: W.B. Eerdmans Pub. Co.
- . 1956. *Commentary on the Gospel according to John*. Translated by W. Pringle. 2 vols. Grand Rapids: Baker Books.
- . 1960. *Institutes of the Christian Religion*. Edited by J. T. McNeill and F. L. Battles. Philadelphia: Westminster Press. Original edition, 1559.
- Caruso, David R., John D. Mayer, and Peter Salovey. 2002. Relation of an Ability Measure of Emotional Intelligence to Personality. *Journal of Personality Assessment* 79 (2):306-320.
- Castelli, Fulvia, Francesca Happé, Uta Frith, and Chris Frith. 2000. Movement and Mind: A Functional Imaging Study of Perception and Interpretation of Complex Intentional Movement Patterns. *NeuroImage* 12 (3):314-325.
- Chow, Tai L. 2008. *Gravity, black holes, and the very early universe : an introduction to general relativity and cosmology*. New York: Springer.
- Clark, L. 2004. The neuropsychology of ventral prefrontal cortex: decision-making and reversal learning. *Brain and Cognition* 55:41-53.
- Clotfelter, Charles T. 1992. *Who benefits from the nonprofit sector?* Chicago: University of Chicago Press.
- Coleman, James S. 1988. Social Capital in the Creation of Human Capital. *American Journal of Sociology* 94 (Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure):S95-S120.
- Coleman, James Samuel. 1990. *Foundations of social theory*. Cambridge, Mass.: Belknap Press of Harvard University Press.

- Conway, Michael, and Constantina Giannopoulos. 1993. Dysphoria and decision making: Limited information use for evaluations of multiattribute targets. *Journal of Personality and Social Psychology* 64 (4):613-623.
- Craig, Edward, and Routledge (Firm). 1998. *Routledge encyclopedia of philosophy*. 10 vols. London ; New York: Routledge.
- Damasio, A. R., D. Tranel, and H. Damasio. 1991. Somatic markers and the guidance of behavior: Theory and preliminary testing. In *Frontal lobe function and dysfunction*, edited by H. S. Levin, H. M. Eisenberg and A. L. Benton. New York: Oxford University Press.
- Damasio, Antonio R. 2005. *Descartes' error: emotion, reason, and the human brain*. London: Penguin.
- Damasio, Antonio R., Daniel Tranel, and Hanna Damasio. 1990. Individuals with sociopathic behavior caused by frontal damage fail to respond autonomically to social stimuli. *Behavioural Brain Research* 41 (2):81-94.
- Damasio, H., T. Grabowski, R. Frank, A.M. Galaburda, and A. R. Damasio. 1994. The return of Phineas Gage: the skull of a famous patient yields clues about the brain. *Science* 264:1102-1105.
- Dantine, J. 1966. Les Tabelles sur la Doctrine de la Prédestination par Théodore de Bezè. *Revue de Théologie et de Philosophie* 16:365-377.
- Demarest, Bruce A. 1984. "Amyraldianism". In *Evangelical dictionary of theology*, edited by W. A. Elwell. Grand Rapids, Mich.: Baker Book House.
- Descartes, René. 1664. *Renati Descartes Principia philosophiæ*. Nunc demum hac editione diligenter recognita & mendis expurgata. ed. Londini: Excudebat J.F. pro Jona Hart.
- DiMaggio, Paul. 1994. Culture and Economy. In *The Handbook of Economic Sociology*, edited by N. J. Smelser and R. Swedberg. Princeton, NJ: Princeton University Press.
- Dixon, Richard D., Diane E. Levy, and Roger C. Lowery. 1988. Asking the "Born-Again" Question. *Review of Religious Research*, 1988, 30, 1, Sept, 33-39.
- Dollahite, David C. 1998. Fathering, faith, and spirituality. *Journal of Men's Studies* 7 (1):3-15.
- Douglass, Jane Dempsey. 1983. Christian freedom in Calvin's theology: the foundation and significance of Christian freedom. *Princeton Seminary Bulletin* 4 (2):69-83.
- Dowey, Edward A. 1994. *The knowledge of God in Calvin's theology*. Expanded ed. Grand Rapids, Mich.: W.B. Eerdmans Pub. Co.
- Duffield, G. E., and Ford Lewis Battles. 1966. *John Calvin*. Appleford, Abingdon (Berks.),: Sutton Courtenay P.

- Dunn, B. D., T. Dalgleish, and A. D. Lawrence. 2006. The somaticmarker hypothesis: a critical evaluation *Neurosci. Biobehav. Rev.* 30 239–271.
- Easterly, William. 2001. The Middle Class Consensus and Economic Development. *Journal of Economic Growth* 6 (4):317-35.
- Easterly, William, and Ross Levine. 1997. Africa's Growth Tragedy: Policies and Ethnic Divisions. *Quarterly Journal of Economics* 112 (4):1203-1250.
- Edgeworth, Francis Ysidro. 1932. *Mathmetical physics: an essay on the application of mathematics to the moral sciences*. London: The London School of Economics and Political Science.
- Edgeworth, Francis Ysidro, and Philip Mirowski. 1994. *Edgeworth on chance, economic hazard, and statistics, The Worldly philosophy*. Lanham, Md.: Rowman & Littlefield.
- Edgeworth, Francis Ysidro, and Royal Economic Society (Great Britain). 1925. *Papers relating to political economy*. London,: Published on behalf of the Royal Economic Society by Macmillan and Co., limited.
- Edwards, John A., and Gifford Weary. 1993. Depression and the impression-formation continuum: Piecemeal processing despite the availability of category information. *Journal of Personality and Social Psychology* 64 (4):636-645.
- Edwards, Jonathan. 1746. *A treatise concerning religious affections in three parts; Part I. Concerning the nature of the affections, and their importance in religion*. Edited by American Imprint Collection (Library of Congress). Boston: Printed for S. Kneeland and T. Green in Queen-street.
- Edwards, Ward. 1954. The theory of decision making. *Psychological Bulletin* 51 (4):380-417.
- Ehrenberg, Ronald G. 1977. Household Allocation of Time and Religiosity: Replication and Extension. *Journal of Political Economy* 85 (2):415-23.
- Einstein, Albert. 2007. Physics and reality. In *A stubbornly persistent illusion : the essential scientific works of Albert Einstein*, edited by S. W. Hawking. Philadelphia, Pa. ; London: Running press.
- Einstein, Albert, and Robert W. Lawson. 1931. *Relativity; the special and general theory*. New York,: P. Smith.
- Eisenstadt, S. N. 1968. *The Protestant ethic and modernization; a comparative view*. New York: Basic Books.
- Ellison, Christopher G. 1998. Introduction to the symposium: Religion, health, and well-being. *Journal for the Scientific Study of Religion* 37 (4):692-694.
- Ellison, Christopher G., John P. Bartkowski, and Kristen L. Anderson. 1999. Are there religious variations in domestic violence? *Journal of Family Issues* 20 (1):87-113.

- Ellison, Christopher G., and Jeffrey S. Levin. 1998. The religion-health connection: Evidence, theory, and future directions. *Health Education & Behavior* 25 (6):700-720.
- Ellison, Christopher G., and And Others. 1996. Conservative Protestantism and the Parental Use of Corporal Punishment. *Social Forces* 74 (3):1003-1028.
- Ellison, Christopher G., and Darren E. Sherkat. 1993. Conservative protestantism and support for corporal punishment. *American Sociological Review* 58 (1):131-144.
- Elsbach, Kimberly D., and Pamela S. Barr. 1999. The Effects of Mood on Individuals' Use of Structured Decision Protocols. *Organization Science* 10 (2):181.
- Emmons, Robert A.; McCullough, M. E. 1999. Religion in the Psychology of Personality. *Journal of Personality* 67 (6): whole issue.
- Enright, Robert D., and Richard P. Fitzgibbons. 2000. *Helping clients forgive: an empirical guide for resolving anger and restoring hope*. 1st ed. Washington, DC: American Psychological Association.
- Erber, Ralph. 1991. Affective and semantic priming: Effects of mood on category accessibility and inference. *Journal of Experimental Social Psychology* 27 (5):480-498.
- Eslinger, P. J., L. M. Grattan, H. Damasio, and A. R. Damasio. 1992. Developmental consequences of childhood frontal lobe damage. *Arch Neurol* 49 (7):764-769.
- Extremera, Natalio, and Pablo Fernández-Berrocal. 2006. Emotional Intelligence as Predictor of Mental, Social, and Physical Health in University Students. *The Spanish Journal of Psychology* 9 (1):45-51.
- Fanfani, Amintore. 1972. *Catholicism, Protestantism and capitalism*. New York,: Arno Press.
- Feldman, Stanley. 1993. The Rational Public: Fifty Years of Trends in Americans' Policy Preferences.
- Feldman, Stanley, and Marco Steenbergen. 2001. Social welfare attitudes and the humanitarian sensibility. In *Citizens and politics: Perspectives from political psychology*, edited by J. H. Kuklinski: Cambridge University Press.
- Feldman, Stanley, and John Zaller. 1992. The Political Culture of Ambivalence: Ideological Responses to the Welfare State. *American Journal of Political Science* 36 (1, Feb.):268-307.
- Fenigstein, Allan, and Dominic Abrams. 1993. Self-Attention and the Egocentric Assumption of Shared Perspectives. *Journal of Experimental Social Psychology* 29 (4):287-303.
- Filsinger, Erik E., and Margaret R. Wilson. 1984. Religiosity, Socioeconomic Rewards, and Family Development: Predictors of Marital Adjustment. *Journal of Marriage and the Family* 46 (3):663-670.

- Fincham, Frank D., and Steven R. H. Beach. 2002. Forgiveness: Toward a public health approach to intervention. In *A clinician's guide to maintaining and enhancing close relationships.*, edited by J. H. Harvey and A. Wenzel. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.
- Finucane, Melissa L., Ali Alhakami, Paul Slovic, and Stephen M. Johnson. 2000. The Affect Heuristic in Judgments of Risks and Benefits. *Journal of Behavioral Decision Making* 13 (1):1-17.
- Fishburn, Peter C. 1983. Transitive Measurable Utility. *Journal of Economic Theory* 31 (2):293-317.
- Fishburn, Peter C., and Gary A. Kochenberger. 1979. Two-Piece Von Neumann-Morgenstern Utility Functions. *Decision Sciences* 10 (4):503.
- Fletcher, P. C., F. Happe, S. Ehlers, C. Gillberg, R. J. Dolan, R. S. J. Frackowiak, C. D. Frith, and U. Frith. 1996. Abnormal functional anatomy in Asperger's syndrome during a "Theory of Mind" task. *NeuroImage* 3 (1, Supplement 1):S251-21.
- Fletcher, P. C., F. Happe, U. Frith, S. C. Baker, R. J. Dolan, R. S. J. Frackowiak, and C. D. Frith. 1995. Other minds in the brain: a functional imaging study of "theory of mind" in story comprehension. *Cognition* 57 (2):109-128.
- Forgas, Joseph P. 1995. Mood and judgment: The affect infusion model (AIM). *Psychological Bulletin* 117 (1):39-66.
- . 2000. Managing Moods: Toward a Dual-Process Theory of Spontaneous Mood Regulation. *Psychological Inquiry* 11 (3):172.
- Forgas, Joseph P., and Gordon H. Bower. 1987. Mood effects on person-perception judgments. *Journal of Personality and Social Psychology* 53 (1):53-60.
- Forste, Renata T., and Tim B. Heaton. 1988. Initiation of Sexual Activity among Female Adolescents. *Youth and Society* 19 (3):250-268.
- Franklin, Julian H., François Hotman, Théodore de Bèze, and Hubert Languet. 1969. *Constitutionalism and resistance in the sixteenth century; three treatises*. New York: Pegasus.
- Freeman, Richard B. 1986. Who Escapes? The Relation of Churchgoing and Other Background Factors to the Socioeconomic Performance of Black Male Youths from Inner-city Tracts. In *The black youth employment crisis*. Chicago and London: University of Chicago Press.
- Frey, B., and A. Stutzer. 2000. Happiness prospers in democracy. *Journal of Happiness Studies* 1:79-102.
- Friedman, Milton, and L. J. Savage. 1948. The Utility Analysis of Choices Involving Risk. *The Journal of Political Economy* 56 (4):279-304.

- Fukuyama, Francis. 1995. *Trust : the social virtues and the creation of prosperity*. New York: Free Press.
- Fulton, John, and Philip Schaff. 1872. *Index canonum: containing the canons called apostolical, the canons of the undisputed general councils, and the canons of the provincial councils of Ancyra, Neo-Cæsarea, Gangra, Antioch and Laodicea; in Greek and English, together with a complete digest of the whole code of canon law in the undivided primitive church*. New York: Pott, Young & Co.
- Funkenstein, Amos. 1986. *Theology and the scientific imagination from the Middle Ages to the seventeenth century*. Princeton, N.J.: Princeton University Press.
- Fuster, Joaquin M. 1997. *The prefrontal cortex : anatomy, physiology, and neuropsychology of the frontal lobe*. 3rd ed. Philadelphia: Lippincott-Raven.
- Galanter, E., and P. Pliner. 1974. Cross-modality matching of money against other continua. In *Sensation and measurement: papers in honor of S. S. Stevens*, edited by S. S. Stevens, H. R. Moskowitz, B. Scharf and J. C. Stevens. Dordrecht ; Boston: Reidel.
- Galilei, Galileo. 1957. *Discoveries and opinions of Galileo*. Edited by S. Drake. 1st ed, *Double-day anchor books ; A94*. Garden City, N.Y.: Doubleday.
- . 1963. *Dialogues concerning two new sciences*. Edited by H. Crew and A. d. Salvio. New York,: McGraw-Hill.
- . 1967. *Dialogue concerning the two chief world systems, Ptolemaic & Copernican*. 2d. ed. Berkeley,: University of California Press.
- Gardner, Howard. 1993. *Frames of mind : the theory of multiple intelligences*. 10th anniversary ed. New York, NY: BasicBooks.
- Gartner, J.; Larson, D. B.; Allen, G. D. 1991. Religious commitment and mental health: A review of the empirical literature. *Journal of Psychology & Theology* 19:6-25.
- George, Jennifer M. 2000. Emotions and leadership: The role of emotional intelligence. *Human Relations* 53 (8):1027-1055.
- Giddens, Anthony. 1971. *Capitalism and modern social theory; an analysis of the writings of Marx, Durkheim and Max Weber*. Cambridge [Eng.]: University Press.
- . 1972. *Politics and sociology in the thought of Max Weber*. London,: Macmillan.
- Glenn, Norval D. 1982. Interreligious Marriage in the United States: Patterns and Recent Trends. *Journal of Marriage and the Family* 44 (3):555-566.
- Gohm, Carol L. 2003. Mood regulation and emotional intelligence: Individual differences. *Journal of Personality and Social Psychology* 84 (3):594-607.
- Goldman-Rakic, P. 1992. Working memory and the mind. *Scientific American* 267:110-117.

- Goldscheider, C, and W.D Mosher. 1988. Religious Affiliation and Contraceptive Usage: Changing American Patterns, 1955-82. *Studies in Family Planning* 19 (1):48-57.
- Goodman, David C. 1973. *Science and religious belief, 1600-1900, Open University set book*. Bristol: J. Wright [for] the Open University Press.
- Gorski, Philip S. 1993. The Protestant Ethic Revisited: Disciplinary Revolution and State Formation in Holland and Prussia. *American Journal of Sociology* 99 (2):265-316.
- Gorsuch, R. L. 1995. Religious aspects of substance abuse and recovery. *Journal of Social Issues* 51:65-83.
- Gray, Jeremy R. 1999. A bias toward short-term thinking in threat-related negative emotional states. *Personality and Social Psychology Bulletin* 25 (1):65-75.
- Greeley, Andrew M. 1996. *Religious change in America*. 1st Harvard University Press pbk. ed, *Social trends in the United States*. Cambridge, Mass.: Harvard University Press.
- Greene, Joshua D., Leigh E. Nystrom, Andrew D. Engell, John M. Darley, and Jonathan D. Cohen. 2004. The Neural Bases of Cognitive Conflict and Control in Moral Judgment. *Neuron* 44 (2):389-400.
- Greene, Joshua D., R. Brian Sommerville, Leigh E. Nystrom, John M. Darley, and Jonathan D. Cohen. 2001. An fMRI Investigation of Emotional Engagement in Moral Judgment. *Science* 293 (5537):2105.
- Greenslade, S. L. 1956. *Early Latin theology; selections from Tertullian, Cyprian, Ambrose, and Jerome, The Library of Christian Classics (LCC), v. 5*. Philadelphia: Westminster Press.
- Gritzmacher, S. A.; Bolton, B.; Dana, R. H. 1988. Psychological characteristics of Pentecostals: A literature review and psycho-dynamic synthesis. *Journal of Psychology and Theology* 16:233-245.
- Grossman, Gene M., and Elhanan Helpman. 1991. *Innovation and growth in the global economy*. Cambridge: MIT Press.
- Guillen, Mauro. 1994. *Models of Management: Work, Authority, and Organization in a Comparative Perspective*. Chicago, IL: University of Chicago Press.
- Guth, J. L., T. G. Jelen, L. A. Kellstedt, C. E. Smidt, and K. D. Wald. 1988. The Politics of Religion in America: Issues for Investigation. *American Politics Quarterly* 16 (3):357-397.
- Hagen, Ole. 1979. Towards a positive theory of preferences under risk. In *Expected utility hypotheses and the Allais Paradox : contemporary discussions of decisions under uncertainty with Allais' rejoinder*, edited by M. Allais, O. Hagen and M. Allais. Dordrecht ; Boston: D. Reidel Pub. Co.
- Haidt, Jonathan. 2001. The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review* 108 (4):814-834.

- Hajcak, Greg, Nicole McDonald, and Robert F. Simons. 2003. Anxiety and error-related brain activity. *Biological Psychology* 64 (1/2):77.
- Hall, B. 1966. Calvin against the Calvinists. In *John Calvin*, edited by G. E. Duffield and F. L. Battles. Appleford, Abingdon (Berks.); Sutton Courtenay P.
- Hamilton, Gary G. 1994. Civilization and Organization of Economies. In *The Handbook of Economic Sociology*, edited by N. J. Smelser and R. Swedberg. Princeton, NJ: Princeton University Press.
- Hammond, Judith A., Bettie S. Cole, and Scott H. Beck. 1993. Religious Heritage and Teenage Marriage. *Review of Religious Research* 35 (2):117.
- Hankins, Thomas L. 1985. *Science and the Enlightenment, Cambridge history of science*. Cambridge ; New York: Cambridge University Press.
- Hansson, B. 1975. The appropriateness of the expected utility model. *Erkenntnis* 9:175-194.
- Harkness, Kate L., Mark A. Sabbagh, Jill A. Jacobson, Neeta K. Chowdrey, and Tina Chen. 2005. Enhanced accuracy of mental state decoding in dysphoric college students. *Cognition & Emotion* 19 (7):999-1025.
- Harlow, J. M. . 1868. Recovery from the passage of an iron bar through the head. *Publications of the Massachusetts Medical Society* 2:327-347.
- Harrison, John R. 1978. *The library of Isaac Newton*. Cambridge [Eng.] ; New York: Cambridge University Press.
- Hart, Stephen. 1996. *What does the Lord require?: how American Christians think about economic justice*. 1st pbk. ed. New Brunswick, N.J.: Rutgers University Press.
- Harvard University. *Decision Research Laboratory* 2009 [cited. Available from <http://decisionlab.harvard.edu/>].
- Hawking, S. W. 1998. *A brief history of time*. London ; New York: Bantam Press.
- Heatherton, Todd F., and Kathleen D. Vohs. 2000. Interpersonal evaluations following threats to self: Role of self-esteem. *Journal of Personality and Social Psychology* 78 (4):725-736.
- Heatherton, Todd F., and Carrie L. Wyland. 2003. Assessing self-esteem. In *Positive psychological assessment: A handbook of models and measures*, edited by S. J. Lopez and C. R. Snyder: American Psychological Association.
- Heaton, Tim B., and Edith L. Pratt. 1990. The Effects of Religious Homogamy on Marital Satisfaction and Stability. *Journal of Family Issues* 11 (2):191-207.
- Hebb, D. O., and W. Penfield. 1940. Human behavior after extensive bilateral removals from the frontal lobes. *Archives of Neurology and Psychiatry* (44):421-438.

- Heekeren, Hauke R., Isabell Wartenburger, Helge Schmidt, Hans-Peter Schwintowski, and Arno Villringer. 2003. An fMRI study of simple ethical decision-making. *Neuroreport* July 14 (9):1215-1219.
- Helm, Paul. 2007. Calvin, the "two issues," and the structure of the Institutes. *Calvin Theological Journal* 42 (2):341-348.
- Helson, Harry. 1964. *Adaptation-level theory*. New York,: Harper & Row.
- Hetherington, Norriss S. 1993. *Encyclopedia of cosmology : historical, philosophical, and scientific foundations of modern cosmology, Garland reference library of the humanities ; v. 1250*. New York: Garland Pub.
- Hicks, John. 1939. *Value and capital; an inquiry into some fundamental principles of economic theory*. Oxford,: Clarendon press.
- Hill, Christopher. 1964a. *Puritanism and revolution: studies in interpretation of the English Revolution of the 17th century*. New York,: Schocken Books.
- . 1964b. *Society and Puritanism in pre-Revolutionary England*. New York,: Schocken Books.
- Hill, Peter C. 1999. Giving religion away: What the study of religion offers psychology. *International Journal for the Psychology of Religion* 9 (4):229-249.
- Hill, Peter C., and Ralph W. Hood. 1999. *Measures of religiosity*. Birmingham, Ala.: Religious Education Press.
- Hornak, J., J. O'Doherty, and J. Bramham. 2004. Reward-related reversal learning after surgical excisions in orbito-frontal or dorsolateral prefrontal cortex in humans. *Journal of Cognitive Neuroscience* 16:463–478.
- Hudson, Winthrop Still. 1961. *American Protestantism, The Chicago history of American civilization*. [Chicago]: University of Chicago Press.
- . 1988. The Weber thesis reexamined. *Church History* 57:56-67.
- Hume, David. 1978. *A treatise of human nature*. Edited by L. A. Selby-Bigge and P. H. Nidditch. 2nd ed. Oxford, New York: Clarendon Press; Oxford University Press.
- . 2007. *Dialogues concerning natural religion and other writings*. Edited by D. Coleman, *Cambridge texts in the history of philosophy*. Cambridge, UK ; New York: Cambridge University Press.
- Huntington, Samuel. 1993. The Clash of Civilizations? *Foreign Affairs* 73 (2):22-49.
- Huntington, Samuel P. 1996. *The clash of civilizations and the remaking of world order*. New York: Simon & Schuster.

- . 2004. *Who are we? : American national identity and the challenges it faces*. New York: Simon & Schuster.
- Hutch, Richard A. 1978. Jonathan Edwards' analysis of religious experience. *Journal of Psychology & Theology* 6 (2):123-131.
- Hyma, Albert. 1951. *Renaissance to Reformation*. Grand Rapids,: Eerdmans.
- . 1965. *The Christian renaissance; a history of the "Devotio moderna."* 2d ed. Hamden, Conn.,: Archon Books.
- Iannaccone, Laurence R. 1984. Consumption Capital and Habit with an Application to Religious Participation, Economics, University of Chicago, Chicago.
- . 1988. A Formal Model of Church and Sect. *American Journal of Sociology* 94 (Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure):S241-S268.
- . 1991. The Consequences of Religious Market Structure: Adam Smith and the Economics of Religion. *Rationality and Society*, 1991, 3, 2, Apr, 156-177.
- . 1994. Why strict churches are strong. *American Journal of Sociology* 99:1180-1211.
- . 1998. Introduction to the Economics of Religion. *Journal of Economic Literature* 36 (3):1465-1495.
- Iannaccone, Laurence R., and Sean F. Everton. 2004. Never on Sunny Days: Lessons from Weekly Attendance Counts. *Journal for the Scientific Study of Religion*, 2004, 43, 2, June, 191-207.
- Iannaccone, Laurence R., Daniel V. A. Olson, and Rodney Stark. 1995. Religious Resources and Church Growth. *Social Forces* 74 (2):705-731.
- Inglehart, Ronald. 1990. *Culture shift in advanced industrial society*. Princeton, N.J.: Princeton University Press.
- . 1997. *Modernization and postmodernization: cultural, economic, and political change in 43 societies*. Princeton, N.J.: Princeton University Press.
- Inglehart, Ronald, and Wayne E. Baker. 2000. Modernization, Cultural Change, and the Persistence of Traditional Values. *American Sociological Review*, 2000, 65, 1, Feb, 19-51.
- Inglehart, Ronald, Roberto Foa, Christopher Peterson, and Christian Welzel. 2008. Development, freedom, and rising happiness: A global perspective (1981-2007). *Perspectives on Psychological Science* 3 (4):264-285.
- Inglehart, Ronald, and Christian Welzel. 2005. *Modernization, cultural change, and democracy : the human development sequence*. Cambridge, UK ; New York: Cambridge University Press.

- Inzlicht, Michael, Ian McGregor, Jacob B. Hirsh, and Kyle Nash. 2009. Neural Markers of Religious Conviction. *Psychological Science* 20 (3):385-392.
- Isen, Alice M., Kimberly A. Daubman, and Gary P. Nowicki. 1987. Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology* 52 (6):1122-1131.
- James, William. 1902. *The varieties of religious experience; a study in human nature; being the Gifford lectures on natural religion delivered at Edinburgh in 1901-1902*. New York: Longmans Green.
- Jeffrey, Richard C. 1983. *The logic of decision*. 2nd ed. Chicago: University of Chicago Press.
- Jelen, Ted G. 1993a. The Political Consequences of Religious Group Attitudes. *The Journal of Politics* 55 (1):178-190.
- . 1993b. *The political world of the clergy*. Westport, Conn.: Praeger.
- . 1998. Research in Religion and Mass Political Behavior in the United States: Looking Both Ways after Two Decades of Scholarship. *American Politics Quarterly* 26 (1):110-134.
- Jelen, Ted G., C.E. Smidt, and C. Wilcox. 1993. The political effects of the born-again phenomenon. In *Rediscovering the religious factor in American politics*, edited by D. C. a. K. Leege, Lyman A. Armonk, N.Y.: M.E. Sharpe.
- Jennings, M. Kent, and Laura Stoker. 2004. Social Trust and Civic Engagement across Time and Generations. *Acta Politica*, 2004, 39, 4, Dec, 342-379.
- Jevons, William Stanley. 1874. *The principles of science : a treatise on logic and scientific method*. 2 vols. London: Macmillan and Co.
- . 1881. *Elementary lessons in logic: deductive and inductive*. New ed. London and New York,: Macmillan and co.
- . 1886. *Political economy, Science primers*. New York,: D. Appleton.
- Johnson, Eric J., and Amos Tversky. 1983. Affect, generalization, and the perception of risk. *Journal of Personality and Social Psychology* 45 (1):20-31.
- Jones-Correa, Michael A., and David L. Leal. 2001. Political Participation: Does Religion Matter? *Political Research Quarterly* 54 (4):751-770.
- Jorgenson, Dale Weldeau. 1998. *Growth*. 2 vols. Cambridge, Mass.: MIT Press.
- Jorgenson, Dale Weldeau, Frank M. Gollop, and Barbara M. Fraumeni. 1999. *Productivity and U.S. economic growth*. San Jose: toExcel.

- Kachadourian, Lorig K., Frank Fincham, and Joanne Davila. 2004. The tendency to forgive in dating and married couples: The role of attachment and relationship satisfaction. *Personal Relationships* 11 (3):373-393.
- Kahn, Joan R., Ronald R. Rindfuss, and David K. Guilkey. 1990. Adolescent Contraceptive Method Choices. *Demography* 27 (3):323-35.
- Kahneman, Daniel, Paul Slovic, and Amos Tversky. 1982. *Judgment under uncertainty : heuristics and biases*. Cambridge ; New York: Cambridge University Press.
- Kahneman, Daniel, and Richard Thaler. 1991. Economic Analysis and the Psychology of Utility: Applications to Compensation Policy. *The American Economic Review* 81 (2, Papers and Proceedings of the Hundred and Third Annual Meeting of the American Economic Association):341-346.
- Kahneman, Daniel, and Amos Tversky. 1979. Prospect Theory: An Analysis of Decision under Risk. *Econometrica* 47 (2):263-292.
- . 1984. Choices, values, and frames. *American Psychologist* 39 (4):341-350.
- Kahneman, Daniel, Peter P. Wakker, and Rakesh Sarin. 1997. Back to Bentham? Explorations of Experienced Utility. *The Quarterly Journal of Economics* 112 (2, In Memory of Amos Tversky (1937-1996)):375-405.
- Kant, Immanuel. 2007. *Critique of pure reason*. Edited by N. K. Smith. Rev. 2nd ed. Houndmills, Basingstoke, Hampshire ; New York: Palgrave Macmillan.
- Katelaar, T., and G. L. Clore. 1997. Emotion and reason : the proximate effects and ultimate functions of emotion. In *Cognitive science perspectives on personality and emotion*, edited by G. Matthews. Amsterdam ; New York: Elsevier.
- Kearns, Jill N., and Frank D. Fincham. 2004. A prototype analysis of forgiveness. *Personality and Social Psychology Bulletin* 30 (7):838-855.
- Keeney, Ralph L., and Howard Raiffa. 1976. *Decisions with multiple objectives : preferences and value tradeoffs*. New York: Wiley.
- Kendall, R. T. 1976. *The influence of Calvin and Calvinism upon the American heritage*. London: Evangelical Library.
- . 1979. *Calvin and English Calvinism to 1649, Oxford theological monographs*. Oxford [Eng.]: Oxford University Press.
- Kendler, K. S.; Gardner, C. O.; Prescott, C. A. 1997. Religion, psychopathology, and substance use and abuse. A multimeasure, genetic-epidemiologic study. *American Journal of Psychiatry* 154:322-329.

- Kirkpatrick, Lee A. 1998. God as a substitute attachment figure: A longitudinal study of adult attachment style and religious change in college students. *Personality and Social Psychology Bulletin* 24 (9):961-973.
- Kitayama, Shinobu. 1997. Affective influence in perception : some implications of the amplification model In *Cognitive science perspectives on personality and emotion*, edited by G. Matthews. Amsterdam ; New York: Elsevier.
- Kitayama, Shinobu, Susan Howard, Paula M. Niedenthal, and Shinobu Kitayama. 1994. Affective regulation of perception and comprehension: Amplification and semantic priming. In *The heart's eye: Emotional influences in perception and attention*. San Diego, CA, US: Academic Press.
- Kittel, Gerhard, Geoffrey William Bromiley, and Gerhard Friedrich. 1964. *Theological dictionary of the New Testament*. Grand Rapids, Mich.: Eerdmans.
- Klein, Ernest. 1971. *A comprehensive etymological dictionary of the English language; dealing with the origin of words and their sense development thus illustrating the history of civilization and culture*. Unabridged, one vol. ed. Amsterdam, New York,: Elsevier Pub. Co.
- Knack, Stephen, and Philip Keefer. 1997. Does Social Capital Have an Economic Payoff? A Cross-Country Investigation. *The Quarterly Journal of Economics* 112 (4):1251-1288.
- Koechlin, Etienne, and Alexandre Hyafil. 2007. Anterior Prefrontal Function and the Limits of Human Decision-Making. *Science* 318 (5850):594-598.
- Koenig, H. G., S. Ford, and L. K. George. 1993. Religion and anxiety disorder: An examination and comparison of associations in young, middle-aged, and elderly adults. *Journal of Anxiety Disorder* 7:321-342.
- Koenig, H. G., L. K. George, K. G. Meador, D. G. Blazer, and P. B. Dyck. 1994. Religious affiliation and psychiatric disorder among Protestant baby boomers. *Hospital and Community Psychiatry* 45 (6):586-596.
- Koenig, H. G.; George, L. K.; Meador, K. G.; Blazer, D. G.; Ford, S. M. 1994. Religious practices and alcoholism in southern adult population. *Hospital and Community Psychiatry* 45:225-231.
- Koenigs, Michael, and Daniel Tranel. 2007. Irrational Economic Decision-Making after Ventromedial Prefrontal Damage: Evidence from the Ultimatum Game. *J. Neurosci.* 27 (4):951-956.
- Koenigs, Michael, Liane Young, Ralph Adolphs, Daniel Tranel, Fiery Cushman, Marc Hauser, and Antonio Damasio. 2007. Damage to the prefrontal cortex increases utilitarian moral judgements. *Nature* 446 (7138):908-911.
- Köhler, Walter. 1904. Book Review *Theologische Jahrbuch* 24:579.
- Kolko, Gabriel. 1959. A Critique of Max Weber's Philosophy of History. *Ethics* 70 (1):21-36.

- . 1961. Max Weber on America: Theory and Evidence. *History and Theory* 1 (3):243-260.
- Krause, N. 1995. Religiosity and self-esteem among older adults. *Journal of Gerontology: Psychological Sciences* 50B:236-246.
- Krueger, Paul, Theodor Mommsen, Rudolf Schöll, and Wilhelm Kroll. 1954. *Corpus iuris civilis*. Berolini,: Apud Weidmannos.
- Larson, Lyle K., and Walter Goltz. 1989. Religious Participation And Marital Commitment. *Review of Religious Research* 30 (4):387.
- LeDoux, Joseph E. 1993. Emotional memory systems in the brain. *Behavioural Brain Research* 58 (1):69-79.
- Leege, David C., and Lyman A. Kellstedt. 1993. *Rediscovering the religious factor in American politics*. Armonk, N.Y.: M.E. Sharpe.
- Lenski, Gerhard Emmanuel. 1961. *The religious factor; a sociological study of religion's impact on politics, economics, and family life*. 1st ed. Garden City, N.Y.: Doubleday.
- Leone, Luigi, Marco Perugini, and Richard P. Bagozzi. 2005. Emotions and decision making: Regulatory focus moderates the influence of anticipated emotions on action evaluations. *Cognition & Emotion* 19 (8):1175-1198.
- Levi, Margaret, and Laura Stoker. 2000. Political Trust and Trustworthiness. *Annual Review of Political Science*, 2000, 3, 475-508.
- Levin, J. S. 1989. *Religious factors in aging, adjustment, and health: A theoretical overview*.
- Levin, J. S., and J. R. Taylor. 1997. Age differences in patterns and correlates of the frequency of prayer. *Gerontologist* 37:75-88.
- Levin, Jeffrey S., and Linda M. Chatters. 1998. Religion, Health, and Psychological Well-Being in Older Adults. *Journal of Aging and Health*, 1998, 10, 4, Nov, 504-531.
- Little, David. 1984. *Religion, order, and law : a study in pre-Revolutionary England*. University of Chicago Press ed. Chicago: University of Chicago Press.
- Loewenstein, George F., Elke U. Weber, Christopher K. Hsee, and Ned Welch. 2001. Risk as Feelings. *Psychological Bulletin* 127 (2):267.
- Loewenstein, George, and Ted O'Donoghue. 2006. "We Can Do This the Easy Way or the Hard Way": Negative Emotions, Self-Regulation, and the Law. *University of Chicago Law Review* 73 (1):183-206.
- Loewenstein, George, Scott Rick, and Jonathan D. Cohen. 2008. Neuroeconomics. *Annual Review of Psychology* 59 (1):647-672.

- Long, Stephen H., and Russell F. Settle. 1977. Household Allocation of Time and Church Attendance: Some Additional Evidence. *Journal of Political Economy* 85 (2):409-13.
- Lucas, Robert E. 2002. *Lectures on economic growth*. Cambridge, Mass.: Harvard University Press.
- Luce, R. Duncan, and David H. Krantz. 1971. Conditional Expected Utility. *Econometrica* 39 (2):253-271.
- Luce, R. Duncan, and Louis Narens. 1985. Classification of concatenation measurement structures according to scale type. *Journal of Mathematical Psychology* 29 (1):1-72.
- Luo, Qian, Marina Nakic, Thalia Wheatley, Rebecca Richell, Alex Martin, and R. James R. Blair. 2006. The neural basis of implicit moral attitude--An IAT study using event-related fMRI. *NeuroImage* 30 (4):1449-1457.
- Luther, Martin. 1955. *Luther's works*. Edited by H. C. Oswald, H. T. Lehmann and J. J. Pelikan. American ed. Saint Louis: Concordia Pub. House.
- . 2000. *D. Martin Luthers Werke*. Sonderedition der Kritischen Gesamtausgabe (Weimarer Ausgabe). ed. Weimar: H. Bachlau.
- Lüthy, Herbert. 1970. *From Calvin to Rousseau; tradition and modernity in socio-political thought from the Reformation to the French Revolution*. New York,: Basic Books.
- Maccrimmon, K. R., and S. Larsson. 1979. Utility Theory: Axioms versus Paradoxes. In *Expected utility hypotheses and the Allais Paradox : contemporary discussions of decisions under uncertainty with Allais' rejoinder*, edited by M. Allais, O. Hagen and M. Allais. Dordrecht ; Boston: D. Reidel Pub. Co.
- MacDonald, Douglas A. 2000. Spirituality: Description, measurement, and relation to the Five Factor Model of personality. *Journal of Personality* 68 (1):153-197.
- Machina, Mark J. 1982. "Expected Utility" Analysis without the Independence Axiom. *Econometrica* 50 (2):277-323.
- MacKinnon, Malcolm H. 1988a. Part I: Calvinism and the Infallible Assurance of Grace: The Weber Thesis Reconsidered. *British Journal of Sociology* 39 (2):143-177.
- . 1988b. Part II: Weber's Exploration of Calvinism: The Undiscovered Provenance of Capitalism. *British Journal of Sociology* 39 (2):178-210.
- . 1994. Believer Selectivity in Calvin and Calvinism. *British Journal of Sociology* 45 (4):585-595.
- Maclaurin, Colin. 1968. *An account of Sir Isaac Newton's philosophical discoveries*. New York,: Johnson Reprint Corp.

- Mahoney, Annette, and Kenneth I. Pargament. 2004. Sacred Changes: Spiritual Conversion and Transformation. *Journal of Clinical Psychology* 60 (5):481-492.
- Mahoney, Annette, Kenneth I. Pargament, Tracey Jewell, Aaron B. Swank, Eric Scott, Erin Emery, and Mark Rye. 1999. Marriage and the spiritual realm: The role of proximal and distal religious constructs in marital functioning. *Journal of Family Psychology* 13 (3):321-338.
- Maia, T. V. 2004. A re-examination of the evidence for the somatic marker hypothesis: What participants really know in the Iowa gambling task. *Proceedings of the National Academy of Sciences* 101:16075-16080.
- Mandelbrote, Scott. 1993. 'A Duty of the Greatest Moment': Isaac Newton and the Writing of Biblical Criticism. *The British Journal for the History of Science* 26 (3):281-302.
- Maneker, Jerry S., and Robert P. Rankin. 1991. Religious affiliation and marital duration among those who file for divorce in California, 1966-1971. *Journal of Divorce and Remarriage* 15 (3):205-218.
- Manes, F. 2002. Decision-making processes following damage to the prefrontal cortex. *Brain* 125:624-639.
- March, James G. 1978. Bounded Rationality, Ambiguity, and the Engineering of Choice. *The Bell Journal of Economics* 9 (2):587-608.
- Markowitz, Harry. 1952. The Utility of Wealth. *The Journal of Political Economy* 60 (2):151-158.
- Marschak, Jacob. 1950. Rational behavior, uncertain prospects and measurable utility. *Econometrica* 18 (2):111-141.
- Marshall, Alfred. 1890. *Principles of economics*. London and New York,: Macmillan and co.
- Martin, John H. 2003. *Neuroanatomy : text and atlas*. 3rd ed. New York, N.Y.: McGraw-Hill.
- Matthews, Gerald. 1997. *Cognitive science perspectives on personality and emotion*. Amsterdam ; New York: Elsevier.
- Mayer, John D., Yvonne N. Gaschke, Debra L. Braverman, and Temperance W. Evans. 1992. Mood-congruent judgment is a general effect. *Journal of Personality and Social Psychology* 63 (1):119-132.
- Mayer, John D., and Ellen Hanson. 1995. Mood-congruent judgment over time. *Personality and Social Psychology Bulletin* 21 (3):237-244.
- Mayer, John D., A. T. Panter, Peter Salovey, David R. Caruso, and Gill Sitarenios. 2005. A Discrepancy in Analyses of the MSCEIT--Resolving the Mystery and Understanding Its Implications: A Reply to Gignac (2005). *Emotion* 5 (2):236-237.

- McCullough, M. E.; Pargament, K. I.; Thoresen, C. E. (Eds.). 2000. *Forgiveness: Theory, research, and practice*. New York: Guilford.
- McCullough, Michael E., Robert A. Emmons, and Jo-Ann Tsang. 2002. The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology* 82 (1):112-127.
- McCullough, Michael E., and C. R. Snyder. 2000. Classical source of human strength: Revisiting an old home and building a new one. *Journal of Social & Clinical Psychology* 19 (1):1-10.
- McIntosh, D. N.; Silver, R. C.; Wortman, C. B. 1993. Religion's role in adjustment to a negative life event: Coping with the loss of a child. *Journal of Personality and Social Psychology* 65:812-821.
- McNeill, John T. 1954. *The history and character of Calvinism*. New York,: Oxford University Press.
- Mellers, Barbara, and Alan Schwartz. 1999. Emotion-Based Choice. *Journal of Experimental Psychology / General* 128 (3):332.
- Mendez, Mario F., Eric Anderson, and Jill S. Shapira. 2005. An Investigation of moral judgement in frontotemporal dementia. *Cognitive & Behavioral Neurology* 18 (4):193-197.
- Menger, Karl. 1923. *Grundsätze der Volkswirtschaftslehre*. 2. Auflage mit einem Geleitwort von Richard Schüller aus dem Nachlass hrsg. von Karl Menger. ed. Wien,: Hölder-Pichler-Tempsky.
- . 1934. *Alte Probleme: neue Lösungen in den exakten Wissenschaften*. Edited by H. Thirring, H. F. Mark, F. Scheminzky and H. Hahn. Leipzig und Wien: F. Deuticke.
- . 1979. *Selected papers in logic and foundations, didactics, economics, Vienna circle collection ; v. 10*. Dordrecht ; Boston: D. Reidel Pub. Co.
- Merriam-Webster Inc. 2005. *Merriam-Webster's Collegiate Dictionary*. Springfield, Mass: Merriam Webster.
- Migne, J. P., and John Batteridge Pearson. 1965. *Index alphabeticus omnium doctorum, patrum, scriptorumque ecclesiasticorum quorum opera scriptaque vel minima in Patrologia Latina reperiuntur (MPL)*. [Ridgewood, N.J.]: Gregg Press.
- Miller, Greg. 2009. On the origin of the nervous system. *Science* 325:24-26.
- Mishkin, F. and M. Savastano. 2001. Monetary Policy Strategies for Latin America. *Journal of Developmental Economics* Vol. 66 (2001):P. 426.
- Moll, Jorge, Ricardo de Oliveira-Souza, Ivanei E. Bramati, and Jordan Grafman. 2002. Functional Networks in Emotional Moral and Nonmoral Social Judgments. *NeuroImage* 16 (3, Part 1):696-703.

- Moll, Jorge, Ricardo de Oliveira-Souza, Paul J. Eslinger, Ivanei E. Bramati, Janaina Mourao-Miranda, Pedro Angelo Andreiuolo, and Luiz Pessoa. 2002. The Neural Correlates of Moral Sensitivity: A Functional Magnetic Resonance Imaging Investigation of Basic and Moral Emotions. *J. Neurosci.* 22 (7):2730-2736.
- Monroe, Michelle Renee, John J. Skowronski, William MacDonald, and Sarah E. Wood. 2005. The mildly depressed experience more post-decisional regret than the non-depressed. *Journal of Social & Clinical Psychology* 24 (5):665-690.
- Mosher, William D., Linda B. Williams, and David P. Johnson. 1992. Religion and Fertility in the United States: New Patterns. *Demography* 29 (2):199-214.
- Muller, Chandra, and Christopher G. Ellison. 2001. Religious involvement, social capital, and adolescents' academic progress: evidence from the national education longitudinal study of 1988. *Sociological Focus* 34 (2):155-183.
- Müller, Richard A. 2005. The placement of predestination in Reformed theology: issue or non-issue? *Calvin Theological Journal* 40 (2):184-210.
- Muller, Sheila D. 1985. *Charity in the Dutch Republic : pictures of rich and poor for charitable institutions*. Ann Arbor, Mich.: UMI Research Press.
- Murray, Noel, Harish Sujan, Edward R. Hirt, and Mita Sujan. 1990. The influence of mood on categorization: A cognitive flexibility interpretation. *Journal of Personality and Social Psychology* 59 (3):411-425.
- Myers, David G. 1992. *The pursuit of happiness : who is happy--and why*. 1st ed. New York: W. Morrow.
- Nelson, Richard R., and Sidney G. Winter. 1982. *An evolutionary theory of economic change*. Cambridge, Mass.: Belknap Press of Harvard University Press.
- Newton, Isaac. 1999a. *Isaac Newton's observations on the prophecies of Daniel and the Apocalypse of St. John : a critical edition*. Edited by S. J. Barnett and M. E. Mills, *Mellen critical editions and translations* ; v. 2. Lewiston: E. Mellen Press.
- . 1999b. *The Principia : mathematical principles of natural philosophy*. Edited by I. B. Cohen and A. M. Whitman. Berkeley: University of California Press.
- North, Douglass Cecil. 1990. *Institutions, institutional change, and economic performance, The Political economy of institutions and decisions*. Cambridge; New York: Cambridge University Press.
- North, Douglass Cecil, and Robert Paul Thomas. 1973. *The rise of the Western world; a new economic history*. Cambridge [Eng.]: University Press.
- Ochsner, Kevin N., Silvia A. Bunge, James J. Gross, and John D. E. Gabrieli. 2002. Rethinking Feelings: An fMRI Study of the Cognitive Regulation of Emotion. *J. Cogn. Neurosci.* 14 (8):1215-1229.

- Ongur, D., and J. L. Price. 2000. The Organization of Networks within the Orbital and Medial Prefrontal Cortex of Rats, Monkeys and Humans. *Cereb. Cortex* 10 (3):206-219.
- Ozer, Daniel J., and Steven P. Reise. 1994. Personality assessment. *Annual Review of Psychology* 45:357-388.
- Paek, Ellen Sue Kyung. 2004. The role of religiosity in emotional intelligence: An empirical study of Christians, Dissertation Abstracts International: Section B: The Sciences & Engineering, Univ Microfilms International.
- Pareto, Vilfredo 1906. *Manuale di economia, politica, con una introduzione sulla scieza sociale*. Edited by S. E. Libreria. Milan, Italy.
- Pargament, Kenneth I., Bruce W. Smith, Harold G. Koenig, and Lisa Perez. 1998. Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion* 37 (4):710-724.
- Park, Jerry Z., and Christian Smith. 2000. 'To Whom Much Has Been Given...': Religious Capital and Community Voluntarism Among Churchgoing Protestants. *Journal for the Scientific Study of Religion* 39 (3):272.
- Pearce, Lisa D., and William G. Axinn. 1998. The Impact of Family Religious Life on the Quality of Mother-Child Relations. *American Sociological Review* 63 (6):810-828.
- Persson, Torsten, and Guido Enrico Tabellini. 2000. *Political economics: explaining economic policy, Zeuthen lecture book series*. Cambridge, Mass.: MIT Press.
- . 2003. *The economic effects of constitutions, Munich lectures in economics*. Cambridge, Mass.: MIT Press.
- Petersen, Lerry R., and Gregory V. Donnenwerth. 1997. Secularization and the Influence of Religion on Beliefs about Premarital Sex. *Social Forces* 75 (3):1071-1088.
- Philpott, Daniel. 2001. *Revolutions in sovereignty : how ideas shaped modern international relations, Princeton studies in international history and politics*. Princeton N.J.: Princeton University Press.
- Piedmont, Ralph L. 1999. Does spirituality represent the sixth factor of personality? Spiritual transcendence and the Five-Factor Model. *Journal of Personality* 67 (6):985-1013.
- Portes, Alejandro. 1998. Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology* 24 (1):1.
- Posner, M. I., and S.E. Petersen. 1990. The attention system of the human brain. *Annual Review of Neuroscience* 13:25-42.
- Princeton University. *Center for the Study of Brain, Mind, and Behavior (CSBMB)* 2009 [cited. Available from <http://www.csbmb.princeton.edu/>].

- Putnam, Robert D. 2000. *Bowling alone: the collapse and revival of American community*. New York: Simon & Schuster.
- . 2002. *Democracies in flux: the evolution of social capital in contemporary society*. Oxford; New York: Oxford University Press.
- Putnam, Robert D., Lewis M. Feldstein, and Don Cohen. 2003. *Better together: restoring the American community*. New York: Simon & Schuster.
- Putnam, Robert D., Robert Leonardi, and Raffaella Nanetti. 1993. *Making democracy work: civic traditions in modern Italy*. Princeton, N.J.: Princeton University Press.
- Pyle, Ralph E. 1993. Faith and Commitment to the Poor: Theological Orientation and Support for Government Assistance Measures. *Sociology of Religion* 54 (4):385-401.
- Quartz, Steven R. 2009. Reason, emotion and decision-making: risk and reward computation with feeling. *Trends in Cognitive Sciences* 13 (5):209-215.
- Quiggin, J. 1982. a theory of anticipated utility. *Journal of Economic Behavior & Organization* 3:323-343.
- Rachfahl, F. 1924. *Staat, Gesellschaft, Kultur und Geschichte*. Jena: G. Fischer.
- Raghunathan, Rajagopal, and Michel Tuan Pham. 1999. All Negative Moods Are Not Equal: Motivational Influences of Anxiety and Sadness on Decision Making. *Organizational Behavior & Human Decision Processes* 79 (1):56-77.
- Ramanathan, Ramu. 1998. *Introductory econometrics with applications*. 3rd ed, *The Dryden Press series in economics*. Fort Worth: Dryden Press.
- Rilling, James K., Alan G. Sanfey, Jessica A. Aronson, Leigh E. Nystrom, and Jonathan D. Cohen. 2004. The neural correlates of theory of mind within interpersonal interactions. *NeuroImage* 22 (4):1694-1703.
- Rolls, Edmund T. 2000. The Orbitofrontal Cortex and Reward. *Cereb. Cortex* 10 (3):284-294.
- Rolls, Edmund T., J. Hornak, D. Wade, and J. McGrath. 1994. Emotion-related learning in patients with social and emotional changes associated with frontal lobe damage. *Journal of Neurosurgery and Psychiatry* 57:1518-1524.
- Romer, Paul Michael. 1983. *Dynamic competitive equilibria with externalities, increasing returns and unbounded growth*. microform.
- . 1990. Endogenous technological change. *Journal of Political Economy* 98:71-102.
- Roof, Wade Clark, and William McKinney. 1987. *American mainline religion: its changing shape and future*. New Brunswick, N.J.: Rutgers University Press.

- Rousseau, Jean-Jacques. 1968. The Social Contract. In *Jean-Jacques Rousseau*, edited by L. G. Crocker. New York,: Macmillan.
- Ruby, Perrine, and Jean Decety. 2003. What you believe versus what you think they believe: a neuroimaging study of conceptual perspective-taking. *European Journal of Neuroscience* 17 (11):2475-2480.
- Sacerdote, Bruce, and Edward L. Glaeser. 2001. Education and Religion. *National Bureau of Economic Research* (Working Papers: 9682).
- Salovey, P., and J. Mayer. 1990. Emotional intelligence. *Imagination, Cognition, and Personality* 9. (3):185-211.
- Samuelson, P. A. 1953. Utility preference and probability. Paper read at the International Symposium on Risk, 1952, at Paris.
- Samuelson, Paul Anthony. 1947. *Foundations of economic analysis, Harvard economic studies*, v. 80. Cambridge,: Harvard University Press.
- . 1951. *Equilibrium points in game theory*. Santa Monica, Calif.,: Rand Corp.
- Samuelsson, Kurt. 1961. *Religion and economic action*. Stockholm Svenska bokförlaget ; [c1961].
- Sanfey, Alan G., George Loewenstein, Samuel M. McClure, and Jonathan D. Cohen. 2006. Neuroeconomics: cross-currents in research on decision-making. *Trends in Cognitive Sciences* 10 (3):108-116.
- Sanfey, Alan G., J. K. Rilling, and J. A. Aronson. 2003. The neural basis of economic decision-making in the Ultimatum Game. *Science* 300:1755–1758.
- Saroglou, Vassilis. 2002. Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences* 32 (1):15-25.
- Savage, L. J. 1952. An axiomatization of reasonable behavior in the face of uncertainty. Paper read at the International Symposium on Risk, 1952, at Paris.
- Savage, Leonard J. 1954. *The foundations of statistics*. New York,: Wiley.
- Saver, Jeffrey L., and Antonio R. Damasio. 1991. Preserved access and processing of social knowledge in a patient with acquired sociopathy due to ventromedial frontal damage. *Neuropsychologia* 29 (12):1241-1249.
- Saxe, R., and N. Kanwisher. 2003. People thinking about thinking people: The role of the temporo-parietal junction in "theory of mind". *NeuroImage* 19 (4):1835-1842.

- Scanzoni, John, and Cynthia Arnett. 1987. Enlarging the Understanding of Marital Commitment via Religious Devoutness, Gender Role Preferences, and Locus of Marital Control. *Journal of Family Issues* 8 (1):136-156.
- Schilbach, Leo, Simon B. Eickhoff, Anna Rotarska-Jagiela, Gereon R. Fink, and Kai Vogeley. 2008. Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the "default system" of the brain. *Consciousness and Cognition* 17 (2):457-467.
- Schimmel, Solomon. 1992. *The seven deadly sins: Jewish, Christian, and classical reflections on human nature*. New York, Toronto: Free Press; Maxwell Macmillan Canada; Maxwell Macmillan International.
- Schjoedt, Uffe, Hans StÅ,dkilde-JÃ,rgensen, Armin W. Geertz, and Andreas Roepstorff. 2009. Highly religious participants recruit areas of social cognition in personal prayer. *Social Cognitive and Affective Neuroscience* 4 (2):199-207.
- Schlozman, Kay Lehman, Sidney Verba, and Henry E. Brady. 1995. Participation's Not a Paradox: The View from American Activists. *British Journal of Political Science*, Vol. 25, Issue 1, p. 1, January 1995.
- Schwarz, Norbert. 1986. Feelings as information : informational and motivational functions of affective states. In *Handbook of motivation and cognition : foundations of social behavior*, edited by R. M. Sorrentino and E. T. Higgins. New York: Guilford Press.
- Schwarz, Norbert, and Gerald L. Clore. 1983. Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology* 45 (3):513-523.
- Sen, Amartya Kumar. 1999. *Development as freedom*. 1st. ed. New York: Knopf.
- Shah, James Y., Ron Friedman, and Arie W. Kruglanski. 2002. Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality and Social Psychology* 83 (6):1261-1280.
- Sherkat, Darren E., and Christopher G. Ellison. 1999. Recent Developments and Current Controversies in the Sociology of Religion. *Annual Review of Sociology* 25:363-394.
- Shiv, Baba, George Loewenstein, and Antoine Bechara. 2005. The dark side of emotion in decision-making: When individuals with decreased emotional reactions make more advantageous decisions. *Cognitive Brain Research* 23 (1):85-92.
- Shiv, Baba, George Loewenstein, Antoine Bechara, Hanna Damasio, and Antonio R. Damasio. 2005. Investment Behavior and the Negative Side of Emotion. *Psychological Science* 16 (6):435-439.
- Shreve-Neiger, Andrea K., and Barry A. Edelstein. 2004. Religion and anxiety: A critical review of the literature. *Clinical Psychology Review* 24 (4):379-397.

- Simon, Herbert. 1985. Human Nature in Politics: The Dialogue of Psychology with Political Science. *American Political Science Review* 79 (2 June):293-304.
- Simon, Herbert A. 1955. A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics* 69 (1):99-118.
- . 1978. Rationality as Process and as Product of Thought. *The American Economic Review* 68 (2):1-16.
- Sinclair, Robert C. 1988. Mood, Categorization Breadth, and Performance Appraisal: The Effects of Order of Information. *Organizational Behavior & Human Decision Processes* 42 (1):22.
- Skinner, Quentin. 1978. *The foundations of modern political thought*. Cambridge; New York: Cambridge University Press.
- Slovic, Paul. 1995. The construction of preference. *American Psychologist* 50 (5):364-371.
- Slovic, Paul, M. Finucane, E. Peters, and D. G. MacGregor. 2002. The affect heuristic. In *Heuristics and biases : the psychology of intuitive judgment*, edited by T. Gilovich, D. W. Griffin and D. Kahneman. Cambridge, UK ; New York: Cambridge University Press.
- Smith, Adam. 1976. *An inquiry into the nature and causes of the wealth of nations*. Chicago: University of Chicago Press. Original edition, 1776
- . 2000. *The theory of moral sentiments, Great books in philosophy*. Amherst, N.Y.: Prometheus Books.
- Smith, Peter B., Mark F. Peterson, and Shalom H. Schwartz, et al. . 2002. Cultural values, sources of guidance, and their relevance to managerial behavior: A 47-nation study. *Journal of Cross-Cultural Psychology* 33 (2):188-208.
- Smith, Tom W. 1998. The Likes and Dislikes of the Religious Right. Paper read at Annual Meeting of the American Sociological Association (ASA), 1998.
- Solow, Robert M. . 1956. A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics* 70:65-94.
- Sombart, Werner, and Mordecai Epstein. 1915. *The quintessence of capitalism: a study of the history and psychology of the modern business man*. London,: T. F. Unwin.
- Sombart, Werner, and Mortimer Epstein. 1998. *The quintessence of capitalism : a study of the history and psychology of the modern business man, The early sociology of class ; v. 4*. London ; New York: Routledge/Thoemmes.
- Starbuck, Edwin Diller. 1906. *The psychology of religion; an empirical study of the growth of religious consciousness*. London,: Walter Scott.

- Stark, Rodney. 1972. The Economics of Piety: Religious Commitment and Social Class. In *Issues in social inequality*, edited by G. W. a. F. Thielbar, Saul D. Boston: Little.
- Stevenson, William R. 1999. *Sovereign grace: the place and significance of Christian freedom in John Calvin's political thought*. New York: Oxford University Press.
- Stolzenberg, Ross M., Mary Blair-Loy, and Linda J. Waite. 1995. Religious Participation in Early Adulthood: Age and Family Life Cycle Effects on Church Membership. *American Sociological Review*, 1995, 60, 1, Feb, 84-103.
- Strawbridge, W. J.; Cohen, R. D.; Shema, S. J. 1997. Frequent attendance at religious services and mortality over 28 years. *American Journal of Public Health* 87:957-961.
- Stuss, Donald T., and D. Frank Benson. 1986. *The frontal lobes*. New York: Raven Press.
- Tapanya, Sombat, and Richard Nicki. 1997. Worry and intrinsic/extrinsic religious orientation among Buddhist (Thai) and Christian. *International Journal of Aging & Human Development* 44 (1):73.
- Tawney, R. H. 1962. *Religion and the rise of capitalism; a historical study*. Gloucester, Mass.,: P. Smith.
- Thomas, G. Michael. 2000. Constructing and clarifying the doctrine of predestination: Theodore Beza's letters during, and the in the wake of, the Bolsec controversy (1551-1555). *Reformation & Renaissance Review* (4):7-28.
- Thornton, Arland, and Donald Camburn. 1989. Religious Participation and Adolescent Sexual Behavior and Attitudes. *Journal of Marriage and the Family* 51 (3):641-653.
- Toon, Peter. 1967. *The emergence of hyper-Calvinism in English Nonconformity, 1689-1765*. London,: Olive Tree.
- Torrance, James B. 1982. The Westminster Confession in the Church today :. In *Papers prepared for the Church of Scotland Panel on Doctrine*
edited by A. I. C. Heron and Church of Scotland. Panel on Doctrine. Edinburgh: Saint Andrew Press.
- Tversky, Amos. 1972. Elimination by aspects: A theory of choice. *Psychological Review* 79 (4):281-299.
- Tversky, Amos, and Daniel Kahneman. 1986. Rational Choice and the Framing of Decisions. *The Journal of Business* 59 (4):S251-S278.
- Ulbrich, Holley, and Myles Wallace. 1983. Church Attendance, Age, and Belief in the Afterlife: Some Additional Evidence. *Atlantic Economic Journal* 11 (2):44-51.
- . 1984. Women's Work Force Status and Church Attendance. *Journal for the Scientific Study of Religion* 23 (4):341-350.

- VanOyen Witvliet, Charlotte. 2001. Forgiveness and health: Review and reflections on a matter of faith, feelings, and physiology. *Journal of Psychology and Theology* 29 (3):212-224.
- Verba, Sidney, Henry Brady, and Kay Lehman Schlozman. 1995. *Voice and equality: civic voluntarism in American politics*. Cambridge, Mass.: Harvard University Press.
- Verba, Sidney, Kay Lehman Schlozman, Henry Brady, and Norman H. Nie. 1993. Race, Ethnicity and Political Resources: Participation in the United States. *British Journal of Political Science* 23 (4):453-497.
- von Neumann, John, and Oskar Morgenstern. 1944. *Theory of games and economic behavior*. Princeton,: Princeton university press.
- . 2004. *Theory of games and economic behavior*. 60th anniversary ed. Princeton, N.J. ; Woodstock: Princeton University Press.
- Vorauer, Jacquie D., and Michael Ross. 1999. Self-Awareness and Feeling Transparent: Failing to Suppress One's Self. *Journal of Experimental Social Psychology* 35 (5):415-440.
- Wallace, Dewey D., Jr. 1992. Predestination. In *Encyclopedia of the Reformed faith*, edited by D. K. McKim and D. F. Wright. Louisville, Ky. Edinburgh: Westminster/John Knox Press ; Saint Andrew Press.
- Wallace, J. M., Jr.; Forman, T. A. 1998. Religion's role in promoting health and reducing risk among American youth. *Health Education and Behavior* 25:721-741.
- Walras, Léon. 1874. *Éléments d'économie politique pure; ou, Théorie de la richesse sociale*. Lausanne,: L. Corbaz & cie; [etc.
- . 1984. *Elements of pure economics, or, The theory of social wealth*. Philadelphia, PA: Orion Editions.
- Walras, Léon, and Claude Mouchot. 1993. *Théorie mathématique de la richesse sociale et autres écrits d'économie pure*. Paris: Economica.
- Walzer, Michael. 1965. *The revolution of the saints; a study in the origins of radical politics*. Cambridge, Mass.: Harvard University Press.
- . 1985. *Exodus and revolution*. New York: Basic Books.
- Watts, Fraser N. 1996. Psychological and religious perspectives on emotion. *International Journal for the Psychology of Religion* 6 (2):71-87.
- Weber, Max. 1978. *Economy and society: an outline of interpretive sociology*. Edited by G. Roth and C. Wittich. 2 vols. Berkeley: University of California Press.

- . 1988. *Gesammelte Aufsätze zur Religionssoziologie*. Edited by U. f. Wissenschaft/Uni-Taschenbücher. 3. - 8. Aufl. ed. Tübingen: Mohr.
- . 2001. *The Protestant Ethic and the Spirit of Capitalism*. Edited by T. Parsons and A. Giddens. London: Routledge. Original edition, 1930
- Welch, Michael, David Sikkink, Eric Sartain, and Carolyn Bond. 2004. Trust in God and Trust in Man: The Ambivalent Role of Religion in Shaping Dimensions of Social Trust. *Journal for the Scientific Study of Religion* 43 (3):317-343.
- Wells, Adrian, and Gerald Matthews. 1994. *Attention and emotion : a clinical perspective*. Hove (UK) ; Hillsdale (USA): L. Erlbaum.
- Welzel, Christian, Ronald Inglehart, and Hans-Dieter Kligemann. 2003. The theory of human development: A cross-cultural analysis. *European Journal of Political Research* 42 (3):341-379.
- Westfall, Richard S. 1993. *The life of Isaac Newton*. Cambridge [England] ; New York, NY, USA: Cambridge University Press.
- White, Michael. 1999. *Isaac Newton : the last sorcerer*. Reading, MA: Perseus Books.
- Wilcox, W. Bradford. 1998. Conservative Protestant childrearing: Authoritarian or authoritative? *American Sociological Review* 63 (6):796-809.
- Williams, C. Arthur, Jr. 1966. Attitudes toward Speculative Risks as an Indicator of Attitudes toward Pure Risks. *The Journal of Risk and Insurance* 33 (4):577-586.
- Williamson, John. 1999. What Should The Bank Think About the Washington Consensus? In *World Development Report 2000*. Washington DC: The World's Bank.
- Witte, John. 1996. Moderate Religious Liberty in the Theology of John Calvin. *Calvin Theological Journal* 31 (2):359-403.
- Wong-McDonald, Ana, and Richard L. Gorsuch. 2000. Surrender to God: An additional coping style? *Journal of Psychology and Theology* 28 (2):149-161.
- Woodberry, Robert D., and Christian S. Smith. 1998. Fundamentalism et al: Conservative Protestants in America. *Annual Review of Sociology* 24:25-56.
- Young, Liane, Fiery Cushman, Marc Hauser, and Rebecca Saxe. 2007. The neural basis of the interaction between theory of mind and moral judgment. *Proceedings of the National Academy of Sciences* 104 (20):8235-8240.
- Zak, Paul J., and Stephen Knack. 2001. Trust and Growth. *Economic Journal* 111 (470).
- Zeidner, Moshe, Richard D. Roberts, and Gerald Matthews. 2004. The emotional intelligence bandwagon: Too fast to live, too young to die? *Psychological Inquiry* 15 (3):239-248.

CURRICULUM VITAE

José Campanella

jcampane@bu.edujcampanella@post.harvard.edu

Ph.D. candidate in Political Science at Boston University. Master in Public Policy at Harvard University with specialization in applied microeconomics, politic and economic development. Full-time work experience as Chief Legal Advisor in the Presidency of Venezuela and in non-profit organizations. Summa cum Laude Law degree from the Catholic University of Venezuela, and ranked first in law graduating class.

Education

- | | |
|-------------------|---|
| 2001 –
present | BOSTON UNIVERSITY, Department of Political Science,
Boston, MA.
Ph.D. in Political Science
Candidate to a Ph.D. degree in Political Science with a doctoral dissertation entitled <i>The Protestant Ethic of Development</i> . |
| 1998-2000 | HARVARD UNIVERSITY, John F. Kennedy School of Government,
Cambridge, MA.
Master in Public Policy
Obtained a Master's degree in Public Policy with specialization in Applied Microeconomics, and Political and Economic Development. Trained in Microeconomic Theory, Modeling and Econometrics at advanced levels. |
| 1989-1995 | UNIVERSIDAD CATÓLICA ANDRÉS BELLO,
Caracas, Venezuela.
Lawyer
Obtained a Law degree (Summa cum Laude), and ranked first in graduating class. |

Professional Experience

- | | |
|-----------|--|
| 1995-1997 | PRESIDENCY OF VENEZUELA, Central Information Office,
Caracas, Venezuela.
Chief Legal Advisor.
Reported to the State Minister, Chief of the Central Information Office of the Venezuelan Presidency. Directed the Legal Department of the Central Information Office, the National Radio, the Official Gazette, and the Official News Agency. Conducted all legal procedures related to those departments. |
| 1995-1997 | LEGAL ADVISORY COUNCIL OF THE VENEZUELAN PUBLIC ADMINISTRATION,
Caracas, Venezuela.
Legal Advisor.
Reported to the Venezuelan Attorney General. This Council is responsible for studying and formulating observations of governmental law and decree projects before being proposed and enacted by the President of Venezuela. |

- 1995-1997 **VENEZUELAN FIRST LADY SOCIAL AND ENVIRONMENTAL PROGRAM,**
Caracas, Venezuela.
Chief Legal Advisor.
Reported to the Venezuelan First Lady in a non-governmental program for urban and environmental improvement.

Teaching and Research Experience

- 2002, 2004 **BOSTON UNIVERSITY, Department of Political Science,**
Summer Boston, MA.
Semesters **Lecturer.**
Developed the course syllabus and taught the under-graduate course PO-312 "American Political Culture."
- 2001-2004 **BOSTON UNIVERSITY, Department of Political Science,**
Boston, MA.
Teaching Fellow.
Assisted in under-graduate level courses on American Politics, Political Analysis, Latin American History, and Introduction to Political Science.
- 2001 **HARVARD UNIVERSITY, Center for International Development (CID),** Cambridge, MA.
Research Assistant.
Assisted the CID Director on research, course development, and case studies.
- 1999-2001 **HARVARD UNIVERSITY, John F. Kennedy School of Government,** Cambridge, MA.
Course Assistant.
Assisted on microeconomics and macroeconomics graduate-level courses.
- 1990-1994 **UNIVERSIDAD CATÓLICA ANDRÉS BELLO,** Caracas, Venezuela.
Teaching Assistant
Assisted in under-graduate courses on Political Institutions, Philosophy of Law, Constitutional Law, and International Law.

Managerial Experience

- 1989-1994 **"GRANJAS UNIÓN" Company,** Maracay, Venezuela.
Administrative Management Supervisor.
Reported to the president of "Granjas Unión" Company, a family run company producing an average of 100 tons of bananas, and 50,000 chickens per month.

Internships

- 1999 **HARVARD INSTITUTE FOR INTERNATIONAL DEVELOPMENT (HIID),** Cambridge MA.
Research Assistant
Reported to the first president of the HIID. Elaborated a comparative statistic study of tax incentives and foreign direct investment strategies in non-OECD developing countries.

Awards and Achievements

- 1999 INTERNATIONAL CONTEST FOR INNOVATIVE IDEAS AND PROJECTS,
Organized by the Mexican presidential candidate from the P.A.N. party Vicente Fox,
Mexico City, Mexico
Co-awarded first prize
Project "Habitaculo Inteligente: housing alternatives for low income people."
- 1997 GRANT FROM THE VENEZUELAN GOVERNMENT AND THE VENEZUELAN FOUNDATION "GRAN MARISCAL DE AYACUCHO,"
Caracas, Venezuela
Recipient of a two-year grant to obtain a Master's degree in Public Policy.
- 1994 **UNIVERSIDAD CATÓLICA ANDRÉS BELLO, Legal Research contest**
Caracas, Venezuela
Second place awarded on the thesis "La Regulación del Estado de Excepción como Medio de Tuición de los Derechos y Garantías Constitucionales Fundamentales" (Regulation of the Emergency State as a Warrant to Fundamental Constitutional Rights).
- 1989 **UNIVERSIDAD CATÓLICA ANDRÉS BELLO, Legal Research contest**
Caracas, Venezuela
First place awarded on the thesis "*Teoría del Proceso de Integración Supranacional*" (*The Theory of the Supranational Integration Process.*)

Leadership and Community Work

- 2005-present **ACADEMIC ENGLISH PROGRAM at Park Street Church.**
Boston, MA.
Co-founder, coordinator, and instructor
- 2002-2007 **FRIENDSHIP FOR OVERSEA COLLEGE AND UNIVERSTIY STUDENTS (FOCUS) Committee at Park Street Church.**
Boston, MA.
Elected Chairman
- 1998 **KENNEDY SCHOOL STUDENT GOVERNMENT (KSSG)**
Cambridge, MA
Elected MPP1 representative to the KSSG, and Vice-President of Student Services Committee
- 1989-1990 **UNIVERSIDAD CATÓLICA ANDRÉS BELLO, Law Students Assembly**
Caracas, Venezuela.
Elected General Secretary

Languages

Spanish (Native), English (S:E R:E W:E), Italian (S:E R:E W:G), Latin, Greek, Biblical Hebrew.