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**Toward a Rule-Based Model of  
Human Choice: On the Nature of  
*Homo Constitutionalis***

*Roger D. Congleton*

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# Toward a Rule-Based Model of Human Choice: On the Nature of *Homo Constitutionalis*

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Anglo-American jurisprudence emphasizes the rule of reason; it grossly neglects the reason of rules. We play socioeconomic-legal-political games that can be described empirically only by their rules. But most of us play without an understanding or appreciation of the rules, how they came into being, how they are enforced, how they can be changed, and most important, how they can be normatively evaluated. (Brennan and Buchanan, 1985, preface).

## I. Introduction: *Homo Constitutionalis*

At several points during his long career, Buchanan wrote on human nature, the process of making choices, and weaknesses in the Neoclassical conceptions of the same. That line of his research stressed the selection and evolution of personal goals and constraints. It was not a major focus of his research, and his writing in this area often simply attempted to remind economists that their utility-maximizing model of man was just a “model” and one that has significant limitations. In his economic and constitutional research, he routinely used conventional rational choice models.<sup>1</sup>

Given the latter, it is possible that Buchanan regarded the *homo economicus* model to be adequate for most analytical purposes in spite of its weaknesses. Another possibility is that he was too simply busy on other projects to develop the rule-based, constitutional model of human nature that would bridge the gap between his comments on human nature and his work on political economy. This paper provides that missing model.

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<sup>1</sup> See Kirchgässner (2014) for a longer discussion of this point with respect to Buchanan’s work on constitutional political economy.

The model sketched out below is grounded loosely on Buchanan’s writings, but it is not an attempt to read his mind. Rather, it undertakes the task of developing a more complete model of human thought and action—one that is consistent with Buchanan’s remarks on human nature and ethics—and also with other work in psychology, biology, and philosophy. I believe that he would agree with most of what is written below, but that can no longer be put to the test, and it is not the main aim of the essay.

The analysis begins with what Hayek (1952) referred to as the “sensory order,” which is to say the idea that our information about the external world is provided by our various senses, none of which are perfect but which nonetheless cannot be too often mistaken or misleading without undermining our species’s prospects for survival. Our senses do not provide our “sensory order” but rather provide the data that our minds use to construct one.

This paper suggests that various systems of relatively stable rules ultimately determine our sensory orders—which is to say our perceptions concerning both the real and the possible. Systems of rules determine our understanding of the world, our beliefs about what can be changed, and the meanings of “better” and “best” as applied to choices among possible actions that might be undertaken. Our internal systems of rules thus largely determine how and what we choose to do in both our mental and physical universes.

The rule-based alternative to *homo economicus* sketched out in this essay is termed *homo constitutionalus*. It is a more general model of humankind than the utility-maximizing model used in economics and game theory. It addresses many of the weaknesses of the *homo economicus* model noted by Buchanan. And, although *homo constitutionalus* is not as mathematically tractable as *homo economicus*, special cases of the model can be used to model and predict choices and actions in well-understood circumstances. Indeed, the utility-maximizing model is one such special case. Simple autocorrelation (habitual) models of behavior are another.

## II. A Generalized Conception of Rules: Rules as “If-Then” Relationships

Buchanan often used the term “rules of the game” as a way of illustrating that choices take place within a hierarchy of rule-governed domains. Choices over rules bind choices made after those rules are adopted and implemented. One chooses rules for a game and then plays the game by choosing strategies allowed by the rules of the game. Such rules are taken

to be “given” or “binding” for choices made while playing the game of interest. Although he normally stressed just two-levels of choice, he occasionally mentioned that a hierarchy of rules existed. In *Limits to Liberty* (1975), for example, he reviews a three-level hierarchy of laws: (i) civil laws, (ii) constitutional law, and (iii) public policy decisions, which jointly frame a fourth level of choice: day-to-day decision making within a society characterized by the rule of law. His work also includes at least two other categories of rules: rules that provide procedures for making choices (Buchanan 1979, 1998, 2005) and rules that constrain choices to various subsets of the possible (Brennan and Buchanan 1985). Hierarchies, procedures, and constraints all play roles in the framework developed below.

Although Buchanan uses the term “rules” frequently, he never defined what he meant by a “rule.” For the purposes of this essay, rules are “if-then” relationships. Any and all relationships that can be characterized by if-then statements are said to be rules. Interpreted in this way, the term “rule” encompasses a very broad range of human experience and knowledge. If-then relationships include most—if not all—definitions, natural and social causal relationships, ethical propositions, moral maxims, personal routines for adapting to weather, work, and family, and also, rules for parlor games and politics. If-then relationships are by their nature systematic and allow predictions about consequences to be made.

The following examples illustrate if-then relationships that we all use or might use: (i) *If an object is round, orange colored, and releases orange drinkable juice when squeezed, then it is probably an orange.* (ii) *If one simultaneously drops two unequally sized oranges from the top of a tall building, then they will hit the ground at the same time.* (iii) *If a frost wipes out half of the Earth’s crop of oranges, then the price of orange juice will increase.* (iv) *If one drinks a glass of orange juice in the morning, then he or she is likely to be more alert for the next hour than if he or she had not done so and possibly a bit less likely to catch a cold.* (v) *If the light at a crosswalk is red, then one should not cross the street—except in an emergency.* (vi) *If one is in normal circumstances (not at war or threatened with death), then it is immoral and illegal to kill another person—even if one “sees red” because he or she has been insulted.* (vii) *If one is playing poker, then a hand in which every card has a red diamond on it beats a hand with two pairs or three of a kind.*

There are so many if-then relationships that it is useful to subdivide them into various categories such as natural law, constitutional law, regulatory law, moral maxims, rules of thumb, rubrics, and so forth. Such classification schemes are normally done with other if-then statements. For example, if a rule describes part of the standing procedures through which public policies are chosen, then it is a constitutional law, whether formally or informally so.

If-then relationships also characterize what we mean by true and false. (viii) The hypothesis “if O, then X” is perfectly true *if* it is always the case that *if* “O,” *then* “X.” (ix) It is stochastically true *if* “O” occurs, *then* probably “X” also occurs. Furthermore, (x) it is demonstratively false *if* “O” *then* not “X” (e.g., X is never observed when O occurs). (xi) Hierarchies among rules can also be expressed using if-then statements. Rule “b” can be applied, only if it is allowed under rule “a,” that is, if rule “a” allows rule “b,” then rule “b” can be applied whenever rule “a” is in force.

Note that only a small subset of the rules that we use characterize “rules of a game” or serve as “constraints.” The term “rules” has far broader scope than that implied by Buchanan’s usage of that term. Moreover, even in cases in which a system of rules is used to characterize a game, such rules normally do not fully characterize how a game is played or how one truly wins the game. Other higher-level “internalized” rules are taken as given by the designers of card and board games, and these have significant effects on the nature of and participation in the game.

For example, the formal rules of a game of poker characterizes the types of cards one should use, how they are to be distributed to players, the card strategies allowed, and provides a ranking of possible collections of cards (hands) at the end of a round of play. The rules imply that one wins a round (dealing of the deck) if he or she has the “highest” hand. However, the aim of winning in this sense may not be the main goal of individual card players. A variety of other rules in the minds of the players actually determine how they play the game, why they play the game, and who truly wins.

Such rules include internalized rules about various strategies one might use. Will one cheat—mark cards, try to see other player’s hands, be calm or emotive, threaten other

players with violence, file charges for fraud if others cheat, and so on? And will one try to win as many hands as possible or simply play because the conversations and reactions that arise during the course of play tend to be funny, entertaining, or informative. Many, perhaps most, participants in parlor games play the game simply to observe the reactions of fellow players and to be part of the associated conversations—they care little about winning in the manner the rules suggest. The number of hands won is of secondary importance to such players.

If conversation is the aim, then the more interesting the other players are, the greater are the rewards of participating. If winning money from side bets is the aim, then weaker and wealthier players are ideal poker companions. If a challenge to take one's mind off one's day-to-day life is the aim, one might want competent, honest, and humorous opponents, rather than overly chatty or incompetent ones.<sup>2</sup> (Competence in this case, refers to knowledge of the if-then rules of probability as applied to card games, and of psychology as applied to reading faces and body language.) Even in cases in which winning hands is the aim, it is often because winning improves one's reputation for shrewdness or generates status for persons in the greater world beyond the parlor games of interest.<sup>3</sup>

The rules for parlor games are only a subset of the rules one uses to determine how one plays “the game.” Who one plays with, how one selects strategies, and how one evaluates the merits of spending a night playing such games, are largely determined by other rules in the minds of the participants. How one plays a game, how one really wins, and who one plays with are all determined by other rules in the minds of the players at the table—rules that are entirely separate from the formal rules of poker. Those other internalized rules ultimately determine how the game is played. The same is true of constitutional rules, as

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<sup>2</sup> The poker games in Blacksburg that Buchanan attended included Robert Tollison and Winston Bush among others.

<sup>3</sup> The various “social” payoffs of parlor games are less obvious for games played on the Internet or against computers. Such games may provide relief from one's everyday toils as well as status within the context of the game through rankings of accumulated scores. The latter may generate self-confidence or self-esteem for the persons participating. Only a few “addicts” and “fanatics” allow the number of games won to be their entire reason for play (or life). Indeed, the derogatory nature of the terms “addicts” and “fanatics” implies that such persons are unusual—exceptions to the rule, exceptions to the less winning oriented theory of game playing sketched out above.

acknowledged by the terms written and unwritten constitutional laws.

It is these and other internalized rules that are the main focus of this essay.

### III. *Homo Constitutionalus*: Rule Bound But Not Rule Determined

Each person is, of course, a product of his own history, the cultural environment, the conventions and traditions that exist and the public literature that explains these, all of which combine to describe the inclusive status quo that cannot be literally superseded.... This statement does not, however, imply... that a person, any person, is locked permanently into a predisposition as determined by personal history, experience and social environment. (Buchanan, 2005, p. 102)

We move through time, constructing ourselves as artifactual persons. We are not, and cannot be, the “same person” in any utility-maximizing sense. (Buchanan, 1979/1999, 250–51)

The *homo constitutionalus* characterization of human nature begins with the observations that adults have many internalized rules, can internalize new rules and overturn previously internalized rules, and that doing so is often a matter of choice. These four observations imply that humans are rule bound but not fully rule determined. One is rule bound insofar as one’s internalized rules create dispositions to make particular choices, but one is free to choose insofar as new rules can be internalized and old ones revised or selectively ignored.<sup>4</sup>

Our internalized systems of rules have three sources: genetic, social, and personal. The first accounts for the largest subset of our rules and includes the biological foundations of our human capacities and prerequisites for sustaining a human life. Such rules distinguish humankind from other species. We have one mouth, 1 brain, 2 legs, 2 eyes, 10 fingers, etcetera. We cannot fly; can run only at moderate speeds; require water, food, and sleep to survive; can imagine alternative futures; and can communicate in a relatively finely grained manner with others of our species who speak the same language. The other two sources of internalized rules are of greater interest for the purposes of this essay because they are more variable. They are grounded in the capacities inherent in the human genotype but are not direct

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<sup>4</sup> For other complementary rule-based models of man see Hayek (1952), Newell and Simon (1972), Nozick (1994), or Seligman et al. (2016). This essay differs from others in its use of more general meaning of the term “rules,” by its emphasis on the internalization processes, and by its linkages to economics and Buchanan’s work, but there are many overlaps and common themes.



products of it. In the language of computer design, genetics provide the hardware and firmware; society and personal invention provide our software. Socially transmitted rules are largely what distinguish modern man from the ancient cave dwellers of the same genotype.

Most of our “software” has been learned from others. It is that which accounts for our longer and more comfortable lives. Socially transmitted rules initially were simply private or personal rules. They were invented or discovered by individuals at some point in the past, who found them useful for their own purposes. When new or refined rules reduce risks or enhance possibilities, they may be passed on to others in one’s family and tribe and subsequently across generations. When they are deemed counterproductive by others, they are less likely to be copied or passed along, except as examples of rules to be avoided. As the collection of useful rules expands through time, their origins tend to be forgotten and only the rules themselves are passed along to others and internalized—often without much thought.

The individual acts of learning that produce human knowledge account for the smallest subset of an individual’s own system of rules. They are the rules that were refined, invented, or discovered by that individual, many of which were catalyzed by conversations with others. Many, perhaps most of one’s private internalized rules will never go further than his or her own mind, but a few may be passed onto others, who find them sufficiently useful to be internalized and passed on to their friends, neighbors, and colleagues. Although this process arguably produces the smallest of our subsets of internalized rules, through time the accumulated individual innovations are the ultimate source of human progress. Without our ability to invent and learn new rules, we would still be cave dwellers (at best).

The remainder of this subsection provides a more thorough discussion of these three sources of our internalized rules and how they generate dispositions to engage in one or another responses to the choice settings confronted.

### **A. Genetically Transmitted Rules**

It is sometimes said, “we are what we eat,” but it would be more precise to say, “we eat to be what we are.” Although it is literally the case that most of our cells are composed of the raw materials collected through our mouths, the use that we make of those raw materials is a consequence of our biology, which in turn is a consequence of our genetic code(s).

That code provides the rules that determine both what we can eat and how what we eat is used to create our physical persons. It does not, however, determine precisely what we eat, nor precisely who we are. What we eat is largely determined by our knowledge of nature and how it may be used to please our taste buds, while sustaining life. Limoncello, spaghetti, meatballs, and panna cotta were not available to cave dwellers.

How the food is used depends in part on the extent and type of exercise that we undertake as well as our genotype. Our physical persons are bound by a huge number of if-then relationships, only a subset of which is understood by ourselves or the scientists who study human physiology and psychology.

We know, for example, that we need some water, some food, and some sleep on a regular basis. We understand why we need food and water but do not really understand why most of us need to spend about a third of our life preparing for or sleeping. Nor do we understand what—if anything—our dreams add to our ability to survive and pass our genes to the next generation. Yet, if we sleep well, then we always dream at least part of the time we are asleep.<sup>5</sup>

Genetically transmitted rules include those that produce and maintain the sense organs that provide us with data about the world and the brains that attempt to make sense of that data. We process this data more or less automatically, so we take for granted our many common conclusions about the nature of the world that we inhabit. The difficulty of making sense from a collection of raw data about the world was not fully appreciated until engineers and computer scientists attempted to devise machines—robots, self-driving cars, and voice-decoding software—to do what humans do automatically “without” much thought. Our “hardware,” “firmware,” and “software” have to be extraordinarily sophisticated—indeed marvelous—to do so.

One’s visual system allows one to distinguish among objects. One’s auditory system allows us to identify the sounds of a familiar voice. With training and practice, one can make

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<sup>5</sup> The dream state (REM) is one of the three phases of sleep. There are several theories of the purpose of dreams, most of which involve information processing of various kinds but a few of which simply regard them to be unnecessary correlates with a good sleep. See, for example, Freud (1913), Jung (1938/2005), Revonsuo (2000), or Zhang (2004).

sense of the sounds spoken by others and also of the many sounds that tend to be associated with opportunities for food, water, and danger. One's sense of touch allows one to distinguish among all sorts of materials. One's sense of balance allows one to stand on one foot, run, and climb trees. Together with our ability to learn, most of us can assemble an IKEA chair without years spent reprogramming ourselves. No robot can yet do all of these or even a significant subset of these things—even after a half century of hard work by thousands of very talented scientists and engineers.<sup>6</sup>

The basic parameters of our physical capacities to hear, see, lift, manipulate, and run are all biologically set—although with training we can get a bit better at each of these capacities, albeit within limits that are also genetically determined.

What is most relevant for the purposes of this essay are the internal systems of rules that affect how we make choices. A subset of these rules can be said to be “hard wired,” but there are many others that can be modified or overturned, just as training for a marathon can increase one's natural aerobic capacity, strength, and endurance beyond that of an ordinary person who does not train. For example, one can “overcome” one's instinctive fear of fire, heights, and death. One can hold onto hot objects to the point where one is burned, parachute from airplanes, charge enemy lines, or commit suicide.

The human ability to override genetically transmitted propensities, evidently improves our chances for survival. Our ability to learn new rules also makes us all more adaptable and malleable than simple models of genetic determinism suggest. These capacities both improve our chances of survival in an ever-changing world and extend the domain of humankind by increasing the number of ecosystems in which we can flourish.

Our capacities to communicate and learn new rules are among those that can be enhanced by informal and formal systems of education.

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<sup>6</sup> In the spring of 2018, two robots were able to assemble a relatively simple IKEA chair in about 20 minutes. However, the programming was limited to a single type of chair. Numerous videos of the robots are available. See, for example, <https://www.zdnet.com/article/robot-builds-an-ikea-chair-everyone-goes-nuts>. Needless to say, a cave dweller might well have taken longer but not a modern man or woman who had assembled such chairs before.

## **B. Socially Transmitted Rules**

Most of our socially transmitted rules were learned without giving alternative rules or principles much thought, as parents, friends, and neighbors encouraged us to reach particular conclusions about particular circumstances, evaluate the consequences of our actions in particular ways, and act in certain ways in particular circumstances or when our actions will have particular consequences.

Perhaps the most obvious of our socially transmitted skills is our native tongue, the if-then relationships between sounds, characters, and ideas learned in our households and communities when we were children. Currently, more than 5,000 languages exist and the one that most of us know best was learned during our childhood. So varied are these rules, that individuals who know just one of the 5,000 languages, are unable to communicate with persons who know only one of the 4,999 others. A few simple universal concepts—love, anger, hunger, etc.—might be gotten across by pointing, nods, general sorts of sounds, but not much else. Without a common language, our efforts to communicate resemble those used by dogs and chimpanzees.<sup>7</sup>

Socially transmitted rules differ among communities because the individual insights out of which a community's knowledge base is created tend to be path dependent, idiosyncratic, and context specific. Cave dwellers had greater use for fire and food than linguistics and economists—so more effort would go into teaching the rules most relevant for making fires, undertaking hunting expeditions of various kinds, and preparing meals than in teaching theories of language and relative prices. They would also put more effort into creating sounds and symbols for fire, hunting, and cooking than for past participles and equilibrium prices. Thus, there are significant differences in regional rules of life as is evident in differences among foodstuffs, cuisines, languages, housing, clothing, music, religions, and ethics. Such differences are evident throughout recorded history, and they are still commonplace;

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<sup>7</sup> Once one knows that languages are possible and exist, one might attempt to learn another. Absent a translator or teacher, the first steps in such a process also uses pointing, nods, and general sounds to establish various if-then relationships between sounds and ideas, as with learning the names for things and actions. In such cases, one hopes to gradually internalize these if-then relationships of the new language so that more subtle forms of communication become possible.

there are few Lutherans in Beijing and few Buddhists in Mecca, and there are Chicago and Virginia schools of political economy.

Our measures for physical phenomena such as colors, temperatures, the seasons, lightening, our periods of development, and the point at which one changes to another are also largely products of lessons learned during our early education.<sup>8</sup> Other rules learned as we “grow up” affect our routines for judging what is important or interesting about a given situation and the relative merits of alternatives. A hunter, farmer, geologist, architect, and tourist do not look at the same place in the same way. Many of our learned rules were internalized at such an early age and have played such an important role in our understanding of our self and the universe that they may be mistakenly regarded as “innate” or “hard wired.” although they are socially rather than genetically transmitted.

Socially “transmitted” rules tend to reduce variations within communities and amplify them among communities. Socially transmitted rules form the basis of our civilized conduct and civilizations. It is our gradual improvement in our understanding of the seasons, life cycles, and of the things that can be done with fire, plants, animals, metals, and electrons that account for our ability to dominate other species on the planet and to live relatively comfortable lives.

As the stock of knowledge increases and becomes more difficult to learn by watching and listening to others, innovations in education often take place. After grounding ideas are taught by one’s family and friends, children may be placed in an apprenticeship or under the supervision of rule-teaching specialists such as teachers and preachers. As mass education became commonplace, more of our if-then relationships were learned from such educational programs. This tends to increase the uniformity in our ideas about cosmology, chemistry, economics, and ethics insofar as our teachers were trained in similar colleges and universities. We may, for example, all agree that the earth is round, rotates, and revolves around the

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<sup>8</sup> This list reflects differences among cultures in the names for colors, measurement of years, assessment of ages and responsibilities associated with “growing up” (as for example with the youngest age at which one can work for a living, marry, or vote). Many of these have varied through time within a given society. Evidence that perceptions of color vary among individuals includes the phenomenon of “color blindness,” and other psychological (Özgen and Davies [2002]) and physiological evidence (Siok et. al [2009]).

sun rather than the earth being flat and the sun rising in the East and setting in the West. Most of us do so without direct knowledge of more than the latter. It is what we were taught.

Of course, not all of the rules passed along are correct or complete, and so both major and minor improvements in socially transmitted rules are always possible. It turned out that neither the earth nor the sun was the center of the universe—although the earth and sun are naturally centers of our attention.

### **C. Personally Modifying and Inventing Rules**

The third process through which rules are acquired accounts for only a small subset of our internalized rules, but the process through which such rules are developed is of major significance.<sup>9</sup> This process is the source of the rules that we create for ourselves through insights, accidental discoveries, and trial and error. Such rules include minor revisions of one's genetically and socially transmitted rules as well as major insights about how the world is put together. Minor innovations include how one organizes one's room, unique aspects of one's diet and clothing, and idiosyncratic word usage and inflection. Major innovations include Aristotelian, Newtonian, and Einsteinian physics; Smithian, Marxist, Marshallian, and Schumpeterian economics; the wheel, printing press, and integrated circuit. The ability to create slightly different rule-based systems make each of us a bit different from all others in our communities and all others of our species. Although we have much in common, we are all unique—even twins exhibit many differences.

The set of self-made rules tends to be small relative to the others for many reasons including our limited imagination and the fact that it is costly to revise one's collection of learned and inherited rules. Rules are not all independent of one another; thus changing one rule often requires significant modifications to others to avoid undermining systems of rules

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<sup>9</sup> This claim can be contested. Insofar as our "selves" emerge gradually from our early education and biological development, subsequent learning is always a bit active and allows individuals to develop their own interpretations of the lessons and information to which they were exposed. However, it is clear that relative to our genotypes, this body of self-created knowledge is small. And, insofar as that which is transmitted socially is accumulated knowledge, privately created rules—even when subject to a huge number of idiosyncratic variations—is also small relative to that created and learned by all previous generations.

that have worked tolerably well in the past. Moreover, there are emotional costs to changing strongly internalized rules: one may feel intensely guilty or disoriented when one violates an “important” rule learned from one’s parents, ministers, or teachers.

Being conventional has both survival and social benefits. The rules passed on through informal and formal educational systems reflect the innovations of many generations of persons in the past, whose cumulative knowledge will naturally dwarf that of even the most clever and unconventional man or woman. Because this is implicitly recognized, those who violate conventions may be disparaged. Many innovations—perhaps most—are rejected because they conflict with other already internalized rules that seem to work reasonably well or are valued by one’s community.

Nonetheless, without the innovations that do take place, there would be no conventions, no rules to be transmitted socially. It is individual innovations that are ultimately the source of all socially transmitted rules. Without innovations and the ability to pass them on to others, we would all be entirely dependent on the essentially static systems of rules and very limited ability to learn with which we were born.

#### **D. Survivorship and the Realism of Rules**

All three types of rules are affected by many tests associated with survivorship. Only rules that actually work better than previous ones or at least appear to do so tend to survive in the long run. This is true of biological rules including our species’s ability to recognize, imagine, learn, and communicate. It is also true of socially transmitted rules, including ones regarding diet, work, and play. It is also true of personally revised or adopted rules.

Of course, many mistakes are made by both mutation and by innovative individuals, but in the long run, these tend to be weeded out. A mutation may be fatal or simply do less well than more commonplace genes at garnering the calories and mates necessary to be transmitted to the next generation. A family or society may disappear because its rules induce the wrong response to a crisis. A person may mistakenly believe that he or she can succeed by remaining asleep in bed, or that he or she can leap off of a cliff or tall building without harm. The rule systems that produce such beliefs are not likely to be copied by others. Rules that tend to produce poor results are far less likely to be transmitted to future

generations than are rules that produce good ones.

Thus, the quality of our information-processing rules, natural laws, and routines for making choices tends to gradually improve through time. In this sense, our understandings and expectations tend to become more “realistic” through time—that is, more consistent with their survival and transmission to future generations—although individual rules and rule systems may remain far from perfect.<sup>10</sup> Such gradual progress is the basis of Hayek’s (1973) and Burke’s (1790) defense of cultural conservatism.

Unfortunately, nonconvexities in what may be regarded as the rules-to-survivorship function limit the extent to which small innovations can improve the systems of rules used to understand our true opportunities in the universe as it is. Both individuals and community adjustments tend to reach local maxima, rather than global ones—what Hayek (1973, pp. 99–100) refers to as dead ends. Aristotle’s theory of physics was used for centuries before it was replaced with Newtonian physics and molecular chemistry. The medieval system of governance and religion were stable systems of rules that required relatively large innovations—new ideas about both life and governance—to move from the medieval local maximum to the modern one. This required both luck and innovation to achieve (Congleton 2011).

Together survivorship and nonconvexities imply that our internalized rules and the societies built on those foundations exhibit a good deal of realism and stability, although they are not completely realistic or stable. The stability of our internalized rules implies that we ourselves are stable—that we have stable dispositions—which makes us predictable counterparts in life’s many social activities. That changes in one’s internalized rules are possible also allows social systems to evolve.

In the end, realism constrains our subjectivity and imagination. Survivorship implies

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<sup>10</sup> Dawkins (1989) originated the term “meme” and argued that ideas (memes) are similar to genes in that they are subject to repeated tests and most pass most of them to survive through time. Thus, only “good” ideas—ideas that can propagate themselves—survive in the long run. This term has been extended to include other aspects of cultures by other scholars in the period that followed. This paper focuses on a subset of potential memes, namely rules, and in particular rules that can be internalized. Although Dawkins coined the term “meme,” the idea of cultural evolution preceded Dawkins by at least a century. See Spencer (1851) for the first clear statement of social evolution.



that our internalized rules—even ones that may not appear to be rational—tend to provide useful realistic assessments of the world and its possibilities.<sup>11</sup>

#### **IV. Putting the Pieces Together: A Model of Choice and Experience Under Internalized Rules**

Having described where internalized rules come from and why they tend to be realistic and stable but imperfect, the next step is to provide a model of rule-bound choice. Choices determine both physical and mental actions. They include single actions—picking up a penny on the floor—and also long sequences of actions—as in a game of chess, travel from one country to another, career choices, the founding of a new company, or the writing of a book. Decisions to engage in various mental activities include remembering the past, sustained efforts to devise principles to account for past experience or to improve one’s future choices, decisions to go to sleep or not, and also such matters as whether to continue thinking about the ideas developed in this essay or not.<sup>12</sup>

As a possible model of ongoing rule-bound processes of choice, consider the following recursive process of winnowing and elimination. In the first phase, sensory data arrive, and internalized rules are used to characterize general features of a choice setting, including both key characteristics and possibilities for change. The “actual” or “status quo” is a subset of the possible. Where specifically am I, what is possible, what is not? In the second phase other rules are applied to determine the most important or relevant features of the choice setting. It is those features that will be given significant attention. In the third phase, those features—which include current conditions, possible choices and consequences—are evaluated by various systems of rules that anticipate and evaluate the consequences associated with physical and mental actions.

This winnowing process may yield a choice to engage in physical action (actions in the outer world) or conclude that more data and evaluation are necessary before a choice can be made (actions within one’s self). The latter, in effect, restarts the process at step 1 if more

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<sup>11</sup> See Frank (1988) for a book length exposition on the underlying rationality of many passions.

<sup>12</sup> This is not to say that mental activities involve no physical changes—merely to say that such changes are within ourselves, rather than in the world outside of ourselves.

external data are gathered, or at step 2 if a better understanding of what is important is undertaken, or step 3 if a clearer understanding of consequences and assessment of their relative merits seems worth additional time and attention. If the choice is to engage in additional winnowing and evaluation or to expand the range of possibilities considered, no external actions are necessary. New “data” can be produced within the mind without additional sensory input as old data are processed. When physical actions are undertaken, additional sensory data are generated, which also reinitiates the process. The process of choice occupies most of our waking hours. It is not a once in a lifetime event.

Essentially every choice—excepting suicidal ones—is subject to ongoing re-evaluation and revision. We do not close our eyes when walking from point A to point B, even in cases in which we “know” where our feet should be placed on the way from A to B. Instead, we continually update and judge whether we are making progress and adjust the placement of our feet and hands, and so on, until B is reached. Our awareness that we engage in such ongoing data collection, updating, and decision making is what is meant by self-awareness. As Descartes aptly put it, “I think therefore I am” (*Cogito, ergo sum*).<sup>13</sup>

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<sup>13</sup> That such ongoing decision making is not part of the *homo economicus* model is a weakness of that model, but also a strength. By treating decisions as once and forever events, the number of factors that need to be modeled (taken into account) is greatly reduced, which facilitates reaching clear conclusions—even if they are only approximately correct.

Figure 1: Identifying, Screening, Evaluating, and Choosing among Possibilities

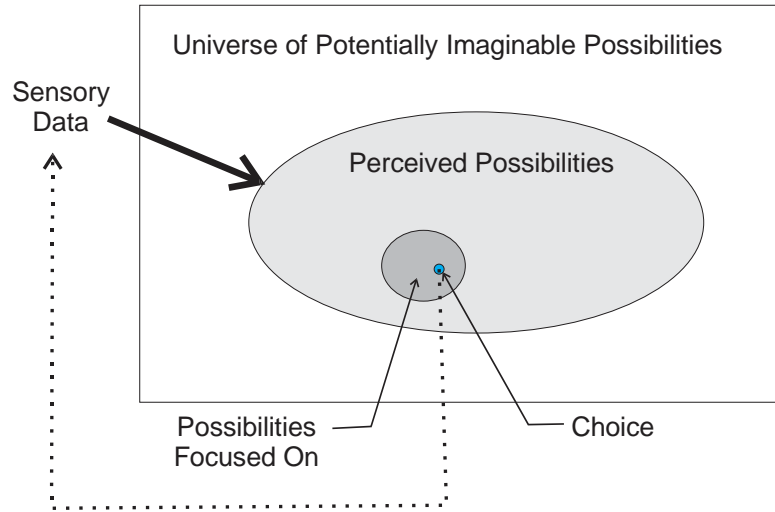


Figure 1 illustrates the case in which this process of winnowing leads to a physical action. It is essentially a Venn diagram with an associated feedback loop. Each step in the process uses systems of if-then relationships to reduce the domain of possibilities focused on in the next step. The process begins with sensory data and rules that discern one’s situation (choice setting) from that data. Those rules may be said to determine which part of the universe the choice takes place within. The second step uses rules to identify the most important (salient) features of that setting and the alternatives worthy of more attention. The third step applies more fine-grained rules to more carefully assess the relative merits of the most important and relevant possibilities: What should I actually do? Should I just follow my routines for this setting? Or, should I try something new? If so, what? All three steps can be regarded as “winnowing,” a process of eliminating alternatives from one’s attention.

Note that this process is not simply an evaluative process. Steps 2 and 3 require anticipating the actions that one can undertake and their likely consequences, both of which require an understanding of natural laws. Deciding which courses of action are worthy of attention also requires evaluation, and this is undertaken with various combinations of practical, aesthetic, and moral rules.

The amount of attention devoted to making a decision varies with the apparent importance of the physical or mental actions that may be undertaken and their associated

consequences. If speed seems important, the three steps will be done quickly without much analysis. If the choice seems to be a major one and speed is not important, several days—indeed years—may be spent identifying, winnowing down and evaluating alternatives. A decision to pursue a career, change religions, or marry someone will be given more attention than choosing a drink or meal at a restaurant or choosing a salutation when leaving friends at a restaurant.

Fortunately, we do not confront very many major choices. In a stable life, we mostly confront familiar choice settings, settings in which our standing routines work well. In such settings, our routines require only minor fine tuning for the oddities of a given time or place. As Hayek (1973) and Newell & Simon (1972) noted, such routines and rubrics free one's time and attention for other more significant or consequential decisions—or simply for pleasant day-dreaming.

In cases in which the action is physical, new sensory data are generated by the action which provides additional evidence about the consequences of the action, which allows our expectations and plans to be updated. If the results are more or less as anticipated, the plan of action is likely to be continued. If not, some “course corrections” may be undertaken—a pothole may be avoided, a crazy (non-norm-following) pedestrian dodged, the weather adjusted for or not, and so on. In other case, more analysis and reflection is necessary, because our standing routines work less well, as when one visits a foreign country for the first time or hears a new language, or experiences a major surprise.

In cases in which the course of action is internal—as with mental actions to “test” the coherence, generality, and consistency of a new theory or idea—new “data” are generated without sensory inputs, but the process of decision making is similar. Relevant details and alternatives are focused on, and winnowing takes place until a plausible rule, principle, or theory is identified or not and adopted or not.

The rules applied in each stage in the process may differ according to the choice setting at hand. For example, choice settings in warfare and romance are often said to differ from those in peace or in meetings between strangers. This is, of course, the implicit meaning of the expression “all is fair and love and war.” Context-specific rules apply different

criteria to identify possibilities and rank them according to the circumstances at hand.

For the purposes of this essay, the highly simplified model presented above is sufficient. It includes the major features of decision making stressed in Buchanan's work, without becoming nihilistic or solipsistic. It is also largely consistent with evidence from psychology and neural science. A more finely grained analysis would attempt to better understand the rule systems that an individual uses at each step in the winnowing process. Such efforts attract a good deal of attention in psychology and neurology and many book-length analyses have been undertaken, but such an analysis is not possible in a short essay nor likely to be of interest to its anticipated readership.<sup>14</sup>

## **V. Parallels between Self and Political Constitutions**

This subsection discusses parallels between self-constitutions and political constitutions. Such parallels are hinted at in a few clauses and asides in Buchanan's work but never really developed. A political constitution characterizes an organization with the authority to create and impose rules on persons within a particular territory. As organizations, governments are inherently rule bound, although the rules are not all written down. Their written constitutions specify the general process through which the government's leadership is chosen and major policy decisions are to be made. Many of the details, however, are left to be worked out by the government—as for example, the internal organization of parliament and election laws are often left unspecified by the constitutions of liberal democracies.

Both self- and political constitutions have hierarchies of rules and standing procedures for decision making; they also continually collect data and update their decisions. New policies are adopted and old ones revised every year. Constitutional rules limit the kinds of processes that can be used to make policy decisions by the persons elected to high office and

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<sup>14</sup> Hayek(1952), Pinker (1999), and Seligman et al (2016), for example, include book-length overviews of research on how the mind operates. Pinker notes that the human mind is adept at recognizing a wide range of shapes and objects—a very difficult capacity for computer programmer to replicate, but one that is far easier to do than many others that humans routinely undertake. His short discussion of the if-then systems of rules that loosely describe how the mind recognizes faces, places, and shapes of object takes more pages than included in this essay. And, Pinker deals only with capacities that he believes to be innate rather than learned.

to a lesser extent by officials holding offices at lower levels of government. A constitution's rules are stable, which is to say they are binding and not subject to repeated or rapid change, although they can be revised (amended).

A liberal constitution usually includes formal limits on the kinds of rules that can lawfully be adopted. In the U.S. constitution, the Bill of Rights limits the types of laws that can be produced by national legislatures and regulatory agencies. Its amendment procedures imply that such constraints can be changed, but both popular support for such reforms and the amendment procedure assures that neither the Bill of Rights nor the organization of government are likely to be rapidly and repeatedly reformed. They are not chiseled into stone but sufficiently stable to be taken as "relatively absolute absolutes" to use Buchanan's phrase.

Although political scientists and political economists often classify governments into two or three categories such as democracies, autocracies, and totalitarian regimes, a nation's political constitution is more complex than that coarse categorization. There is a continuum in the extent and division of authority to government and among office holders.

The "rules of the political game" are so complex and nuanced that they are rarely fully understood by those who are active participants in politics. For example, authority over policy is often divided up in many ways. Most legislative systems are recursive in the sense that there are many "loops" of review, revision, and selection that take place before an idea becomes law or policy. A proposal may be made by a single person or small group, then it is reviewed, revised, and voted on by another person or committee, then the same sequence occurs again with votes by yet another person or committee, which initiates another cycle of review, revision, and voting, and so on, until a bill becomes law or policy (or not). Veto power exists within subcommittees, committees, the legislature as a whole, and the government's chief executive (king, prime minister, chancellor, or president). Policy-making authority is further distributed among unelected staff within the legislative and executive branch and among bureaus and bureaucrats.

The hierarchical nature of government allows attention to be focused on the "top-level review" which in some cases may be that undertaken by voters (as in constitutional referenda) and in others the decisions of elected officials. The term "democracy" is often used

as a useful summary or approximation for the process of governance whenever the top officials are all directly or indirectly selected by voters in competitive elections. However, this top-down model of policy making is a highly simplified model of the complex decentralized process that actually produces suggestions for reform, evaluates such reforms, and implements any new laws and regulations adopted.

The model of rule-bound choice is similar in all respects to that of a political constitution except that only a single person is involved in the decisions reached. One's internal rules are hierarchical and veto power and agenda control often exists at several levels of our internal processes of reflection and winnowing. Several independent systems of rules may veto a course of action. One may reject an action or sequence of actions because it is too dangerous, takes too long, or is immoral.

An internalized collection of rules can be revised, but the process is costly and thus relatively few major reforms are undertaken. Many—perhaps most—of our internalized rules are sufficiently stable that a person's "personality" can be said to last a lifetime. Even relatively unimportant mannerisms change slowly in most cases after adulthood is reached. Major revisions are occasionally observed after a personal crisis—as is also true of political constitutions—but both are rare and not always successful.

Hypotheses that include stable rules, hierarchies, recursiveness, and gradual reform are all commonplace in psychological theories. For example, Freud regarded the mind as a loose hierarchy of decision-making authority, with the superego, ego and id (Freud 1923/2018). Maslow (1943) stressed the hierarchical nature of what he referred to as needs. Seligman et al. (2016) used a similar hierarchy of virtues and dispositions to identify traits that contribute to a good life. Such hierarchies imply that some aims or aspects of character development are given attention before others.

There are also coarse classifications of personality types undertaken by psychologists that are similar in many ways to those used by political scientists to classify governments. For example, Myers-Briggs (1962) developed widely used categorizations of "personality types" based on Jung's (1923) theory of types. Such types are accounted for in the present theory as differences in the constellations of internalized rules that characterize each person's

self-constitution. Another typography (Adorno et al. 1950) regards some persons to be authoritarian, which makes the connection between politics and psychology explicit. Such categories tend to be rough because they somewhat divide up what most will acknowledge to be a continuum in to discrete subsets. Such classifications are nonetheless useful for many purposes, as is the case for coarse classifications of colors, heights, weights, and age.

As true of the processes of government, many of our own standing procedures for making decisions are so complex that neither we, nor psychologists, can fully understand them. Pinker (1999) stressed their recursive and evolutionary—but still not fully understood—nature.<sup>15</sup> The still-mysterious parts of the process of self-governance and decision making can be regarded as judgement or intuition for the purposes of this essay, and they play nontrivial roles at every point in the process of identifying alternatives, focusing attention on a subset of the alternatives, and taking whatever course of action is decided upon.

## VI. Revising and Generalizing Internalized Rules

Recognition of the temporal dimensionality of choice provides one “reason for rules”—rules that will impose binding constraints on choice options after the rules themselves have been established. That is to say, in either a private-choice or a public-choice role, persons may choose to restrict their own futures, and such behavior may be wholly rational (Brennan and Buchanan, 1985, p. 77).

That a subset of our “soft-wired” rules are products of our unique experiences, assessments of that experience, and epiphanies about alternatives never experienced has several important implications. It implies that a person’s constitution—one’s complex system of rules—is not entirely “given,” but evolves through time as one makes choices, observes consequences, and reassesses the relative merits of the rules already in one’s mind. This evolution is bounded by one’s physical and mental capacities, but the bounds are sufficiently large to allow for a huge range of variation in individuals. As positive and normative rules are adjusted or extended to new circumstances, we become somewhat different persons because

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<sup>15</sup> Although the model of self-governance sketched out above is consistent with all of the above psychological theories, the *homo constitutionalus* perspective developed in this paper is most similar to what Pinker refers to as the computational-evolutionary model of the mind, although without committing to a completely deterministic perspective or to narrow claims about the rules that govern our thoughts and actions.



we understand the world and behave a bit differently than our former selves—a point mentioned several times in Buchanan’s writings.

### **A. Self-Evolution**

How much we change through time depends in part on experiences, partly on one’s grounding norms with respect to tradition and innovations, and partly on one’s ability and will to change oneself, which like other abilities varies somewhat among individuals. It is also limited by the same processes that support the internalization of rules. To unlearn or override if-then relationships can be very difficult. Even simply retraining oneself to drive on the left rather than the right side of the road—which involves revising a relatively small number of if-then relationships and ought-tos—is disorienting and time consuming, although most people can do so.

The more central and important the rules under revision are to one’s sense of the universe and self, the more “connections” (e.g., supportive and cross-linking if-then relationships) one must overturn and the greater the emotional costs and time and attention required to undertake a successful revision of one’s self-constitution. To withdraw from a comfortable romance, career, religion, or ideology—even when experience implies one should—can be nearly impossible.

As a consequence, our selves exhibit considerable stability, continuity, and path dependence. One’s persona in retirement is not so different from that in one’s middle-aged period, which is not so different from that in one’s twenties. When two acquaintances meet after not seeing each other for a decade, a very common remark is “you haven’t change a bit,”—which is to say their personalities—their systems of if-then rules—is still fundamentally the same as it was 10 years before. Of course, there are also exceptions, persons who have significantly changed their rules for understanding, screening, evaluating, and acting. Such changes happen to us all as we “grow up” but occur less frequently within adults.

For people who substantially revise their internal constitutions, meetings of old friends elicit comments such as “you’re so different” or “I liked you better when you were your old self.” Change is always possible, but changes are evidently easier at some stages of life and settings than others, and for some systems of internalized rules than others.

## **B. Principles as Generalizations of Context-Specific Rules**

The context-specificity of many of our internalized rules implies that some rules work less well when our choice settings change. As rule failures are noticed, “amendments” to our internal constitutions may be considered and adopted—not all of them consciously so. The aim of such reforms is to refine one’s existing rule systems so that they work better in the new circumstances, where “betterness” is judged via other internalized rules, including ones that induce one to defer to the opinions of others or tradition.

In the course of such amendments, it is likely to be noticed that some rules are more general than others in the sense that they work well in a greater variety of circumstances. Because it takes time to develop new rules and mistakes are made before new rule systems are fully worked out, general rules have obvious advantages. They allow individuals to more easily and effectively live in new choice settings.

As the value of general rules comes to be recognized, some individuals may devote time and attention to discerning and developing such rules. Such persons may be called wise, thoughtful, or insightful. They attempt to generalize the rules most people appear to use by identifying common strengths and weaknesses of those rules. They may also recognize how existing rules can be revised to broaden their applicability. When one seeks advice from such a person, it is often because one’s existing rules cannot be easily generalized to new circumstances. Scientists, philosophers, and theologians all attempt to discern such increasingly general if-then relationships, but everyone does this to some extent.

When more general rules are discovered, efforts may be made to persuade others to adopt the new rules. Persuading others to adopt new rules or general principles is not an easy task, even when the proposed new rule is actually an improvement. Truly general “principles” are always more general than useful at the time they are developed. Their usefulness is evident only after choice settings change. Moreover, many proposed generalizations prove to be false and provide little if any improvement over narrower rules when circumstances actually do change.

As long as new rules yield essentially the same choices in the choice settings most often experienced as the old rules, why invest the time and energy necessary to master new, more

general rules? This natural conservatism is one of the reasons that individual dispositions and cultures evolve slowly and incrementally rather than in great leaps. How often does it matter whether the sun rises in the East or the earth rotates clockwise at a constant speed while the sun remains in place? In spite of the revolution induced by Copernicus five centuries ago, most of us still use the expressions “sunrise” and “sunset” rather than “first and last sun sight” or equivalent phrases describing our rotational journey to a point where the sun can be seen or not.

Nonetheless, many rules are gradually refined and generalized. This is true of natural laws that are developed to characterize relationships in the external world, ethical rules that characterize moral conduct and the good life, and principles for selecting new rules or revising old ones.

## **VII. Rationality as a Principle for Rules and Decision Making**

“Rationality” and “consistency” are two such higher-level principles for evaluating rules. Proponents of rationality insist that one’s theories and overall pattern of choice should be as free from contradiction as possible. Freedom from internal contradiction is facilitated through the use of general rules. Freedom from contradiction in one’s choices is facilitated by carefully considering the consequences associated with one’s actions. Because one’s internalized rules are largely assembled in a haphazard way from family, friends, and others in one’s community, they are not necessarily or even usually entirely consistent with one another. Some rules, for example, may encourage “living for today” and others “planning ahead.” Rationality is thus not simply a consequence of being human but of conscious effort and survivorship insofar as consistent natural laws exist. For example, enlightenment scholars used various consistency tests to discard a wide variety of medieval customs and conventions that “didn’t make sense,” “were overly complicated,” or were “insufficiently general.”

All individuals that accept the rationality principle attempt to reach conclusions that are self-consistent, realistic, and universal. Nonetheless, rationality by itself does not induce complete convergence in the rules used by devotees of rationality. Aristotle and Adam Smith were both scholars who employed rational methodologies, but they wrote at different times,

experienced very different lives, and read quite different books and stories. Their lists and theories of virtue are similar, but not identical, as noted by Smith himself. Bentham's and Kant's ethical theories were developed at roughly the same time and were both grounded in the rationality principle. However, they reach different conclusions about the domain of moral choice and one's moral duties within those domains.

In contrast to devotees of the rationality principle, other persons may acknowledge the usefulness of the rationality principle for some purposes but insist that it is not a universal guide for conduct or for selecting rules. Such persons will attempt to be rational only in circumstances in which it appears to be especially useful. As a consequence, they will exhibit rationality (realism, generality, and consistency) in some of their decisions but not others.

They might, for example, rationally undertake the design of a house, their career, and financial planning but make no effort to be consistent when engaging in hobbies, romance, or conversations with friends and family. They might watch a football game on television alone, but still cheer out loud when their favorite team scores or prevents their opponent from scoring. Other screening and evaluative rules would be used in choice settings in which rationality does not appear to be especially useful.

Persons who are "less than rational," may still exhibit a great deal of consistency in their choices, but that consistency emerges from properties of the rules that they have internalized, rather than from self-conscious efforts to "rationalize" their routines and intuitions.<sup>16</sup> Contradictory rules often fail the test of time, because they tend to be mistake and regret prone. Screening and evaluative rules that often contradict one another also tend to consume time and attention as contradictions are sorted out and regrets accumulate. Inconsistent rules thus tend to be revised or replaced with more general and realistic rules through time because they work better, rather than because they are "rational." This evolutionary aspect of

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<sup>16</sup> The "framing effect" identified by Tversky and Kahneman (1981) may be regarded as information that induces one to use one set of evaluative principles rather than another. That choices change because of framing implies that the overall collection of evaluative rules is not entirely self-consistent (transitive). Nonetheless, within a particular type of choice setting (frame), choices may still be self-consistent on average—sufficiently so that economic models can shed useful light on behavior.

the rules that parents pass on to their children tends to produce more internal consistency than the persons using those rules realize.

Both devotees of rationality and others may recognize that part of their behavior is “irrational” or “nonrational,” which is to say inconsistent with forward-looking, realistic, consistent analysis of one’s interests and of the means for promoting them. Among rationalists, such irrational choices would be regarded as errors or evidence of weakness of will. Among nonrationalists, such irrational behavior may be celebrated as a type of freedom from their own internalized rules and routines. In either case, the irrational is recognized only because rational choices are known to be possible.

In choice settings in which one’s rules are entirely self-consistent, the results of behavior can be represented using the utility-maximizing model. Even though no conscious effort to maximize “utility” has been undertaken, the theory of “revealed preference” implies that any pattern of self-consistent behavior can be characterized with a utility function.<sup>17</sup> The utility-maximizing models of economics and game theory are thus perfectly reasonable models of choice in settings in which one’s rules are consistent with one another. This could well be the case within grocery stores and investment banks.

For devotees of rationality, such domains may be quite large, and they will be embarrassed by cases in which inconsistencies emerge. For others, there will be choice settings in which consistency is evident, but their overall pattern of decisions will exhibit many inconsistencies as, for example, different systems of rules are applied to make choices in different types of choice settings.

### **VIII. Does *Homo Constitutionalis* Solve Problems Associated with Conventional Rational Choice Models?**

The individual is presumed to be facing the following question: What ethical rule shall I adopt as a guide to my behavior in subsequent actions? There are two alternatives before him. He can adopt a rule, which we shall call “the moral law,” or he can adopt a rule which, loosely, we shall call “the private maxim.” By selecting the first, the individual commits himself to act in subsequent situations on the basis of some-

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<sup>17</sup> See Samuelson’s (1948) and Houthakker’s (1950) theories of revealed preference.

thing like the generalization principle...By selecting the second rule instead, he commits himself in advance to no particular principle of behavior. He retains full freedom to act on the basis of expedient considerations in each particular instance that arises. (Buchanan 1965, p. 2).

The rule-based model of human choice sketched out above can be regarded as a generalization of the utility-maximizing model, one that includes that model as a special case but that can account for inconsistencies and personal and cultural evolution. Choices remain purposeful but now include choices about which rules to internalize and how to apply the various rules one has internalized. That we are aware that our own systems of rules are imperfect also makes sense of various products such as self-help books that make little sense in the utility-maximizing model. That we have the ability to learn and internalize rules makes the “self” and “self-interest” partly endogenous.

There are many cases in which people fail to behave as predicted by utility maximization, but which are predictable under the *homo constitutionalus* model. For example, experiments on a variety of social dilemmas find far more cooperative and ethical behavior than can be accounted for by narrow self-interest, ignorance, or confusion.<sup>18</sup> Economic experimenters believe that their subjects attempt to maximize monetary rewards, because this is what *homo economicus* would do in such circumstances. Yet, in many cases, most of the subjects in the experiments behave in other ways—they fail to “properly” optimize.

However, if moral rules and similar norms affect behavior, then the manner of play also matters. *Homo constitutionalus* will assess the relative merits of actions with practical and moral interests in mind. The rewards associated with small monetary payments can easily be less than the rewards of playing in accordance with one’s internalized norms—or with routines that have been profitably used in other circumstances. The cost of such moral or routine behavior in most experiments is a trivial reduction in one’s monetary payoffs. Indeed, if one plays with other moral persons, the payoffs are often increased by such “irrationality.” Differences in the behavior among subjects can largely be explained by differences in their internalized rules.<sup>19</sup>

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<sup>18</sup> See, for example, Tversky and Kahneman (1981, 1984), Andreoni (1995), or Pinker (1999).

<sup>19</sup> See for example, Vanberg and Congleton (1992) or Wilson et al. (2012).

Another puzzle for the *homo-economicus* model is the framing effect(s) identified by Tversky and Kahneman (1982, 1984). Subjects were found to make choices among risky outcomes according to the manner in which the setting and risks were described. *Homo economicus* would be unaffected by such “framing effects” because he, she, or it always maximizes expected income or utility. *Homo constitutionalus*, in contrast, is subject to framing effects whenever the rules used to select among alternatives are context specific. Framing in such cases determines which rules are applied, which determines the choices ultimately made. The existence of framing effects is a predictable consequence of internalized rule systems that are context specific and not entirely self-consistent.

That one’s internalized systems of rules imperfectly account for laboratory settings is not surprising, because one’s internalized rule systems emerged for other choice environments and are not likely to be perfect for the lab. If laboratory settings became commonplace for individuals, their internalized systems of rules would gradually be revised in the direction that maximizes the rewards of lab performance—which might still include a variety of other considerations than the small monetary rewards on offer.

## **IX. The Rule-Based Sensory Order: A Model of Everything?**

There is a sense in which this short essay covers just about everything, and it is meant to. By defining rules as “if-then relationships,” it clarifies what is meant by the somewhat loose usage of the term “rules” that characterizes most papers about rules. By doing so, it reminds readers of the many types of if-then relationships that we use every day. The laws of natural and social science are rules in this sense. Most laws enforced by government have this character, as do most ethical principles and moral maxims, and many of our rubrics and routines. Our capacities for internalizing and revising rules have generated the rule systems that we each use to understand the world, determine possibilities, and decide what to do.

Choices are influenced by a variety of if-then relationships—not all of which are subject to our control—but many of which are. Without our abilities to gradually learn and improve our understandings of natural laws and our own interests, self-improvement and human progress would be impossible. And, there would be little that an individual could do beyond the mandates of their genetic makeup. We would all be ants or monkeys, rather than

humans. It is our ability to use our understanding of if-then relationships to change both ourselves and the world we live in that demonstrates that individual choices matter.

With respect to social science, that rules can be learned and revised and used to guide decisions has a variety of implications. If common rules exist, both social sciences and psychology are possible. Without such rules, human behavior could not be expressed as conditional propensities or natural laws, and only vague statistical predictions would be possible. That differences exist among our internalized rules accounts for the individuality of human experience, the limits of social science, and the irreducible error terms of both social science and psychology.

With respect to economics and political economy, the internalization of rules has a number of implications. If all the rule-based systems internalized by individuals are internally consistent and aim only for survival, income, and domination, the utility-based models that are widely employed may be sufficient to understand human nature. However, when the rules internalized include moral principles, lack consistency, and change through time, analysis that assumes narrow self-interest will be limited in its ability to explain human behavior, social outcomes, or human progress.

The model developed in this essay stresses the subjectivity and individuality of experience, but it does not imply that “anything can happen,” as some scholars stressing subjectivism tend to. Rather, the biological and social evolutionary foundations of our inherited and learned rules imply that many, perhaps most, of our grounding rules have survival value: they address commonplace problems associated with the emergence of homo sapiens as a species and the subsequent emergence of civil society. The rules for understanding the world—our sensory order—have to be realistic, and our rules for assessing our interests must actually tend to do so if they are to be passed on to others.

The rules we invent for ourselves in developed societies are less constrained by survivorship pressures, but even here there are limits on the rules one can apply in everyday life. Many less than life-threatening delusions are compatible with survival in societies that live well away from the margins of survival. Self-delusion in such societies is not necessarily fatal. In prosperous societies, the evolution of rules is propelled by other higher-level principles



that can be used to separate “crazy” from “realistic” or “reasonable” rules. Rationality is one such principle, although it is not the only one. That the rationality principle has been more widely taught and so has become more widely internalized during the past two centuries. This may well be the best explanation for the acceleration of prosperity that took place during the same period. Rules that are realistic allow one to more accurately anticipated the consequences of one’s actions, which clearly helps to improve plans of all sorts whenever consequences matter.

Overall, this essay is one that Buchanan might well have enjoyed and had sympathy with, although that can no longer be known with any certainty. However, its aim is not to obtain his imagined approval but to integrate and extend some ideas from his work and connect them with others from philosophy and evolutionary psychology. The result is a coherent model of man, one that accounts for our individual sensory orders, commonalities among them, and behavior that cannot easily be brought into the utility-maximizing models of decision making widely used in economics and game theory.

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