

2016

In the Light of Evolution: Human Nature, Political Behavior, and Making Sense of Our Social Identity

Corby F. Burger
DePauw University

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In the Light of Evolution:

Human Nature, Political Behavior, and Making Sense of Our Social Identity

Corby F. Burger
Honor Scholar Program
DePauw University
April 14, 2016

“Nothing in biology makes sense except in the light of evolution.”

- Theodosius Dobzhansky,
American Biology Teacher (1973)

“It has been said that nothing in biology makes sense except in the light of evolution. It can now also be said that nothing in human behavior makes sense except in that same light. Cast it on ourselves, and we find that human nature is real, definable, and to some extent predictable.”

- Melvin Konner,
The Tangled Wing (2003)

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Acknowledgements

I am immensely privileged to have completed a project of this magnitude as an undergraduate. The Honor Scholar Thesis has provided an outlet for expressing my academic voice and for this I am extremely grateful. This thesis would not have been possible without the dedicated faculty and staff that make the Honor Scholar program possible. My thanks goes out to Associate Director Amy Welch and Program Secretary Peg Lemley for their work in organizing the thesis process.

I would like to thank Professor of Political Science Deepa Prakash for her seemingly endless commitment of time, energy, and advice. I am extremely lucky to call such a brilliant, generous person my friend and mentor. Thank you to Professor Brett O'Bannon, my academic advisor, for inspiring me to choose political science as my undergraduate major. Additionally, I am grateful for the time and expertise of Professor Jeffery Dunn of the Philosophy Department, who participated in my thesis defense.

This project would not exist without the encouragement of Dr. Kevin Moore, Professor of Psychology and Director of the Honor Scholar Program. His course, *Evolution and Human Nature*, captured my intellectual imagination and provided the initial spark for the ideas expressed in this thesis. He has been instrumental in providing advice, edits, and conceptual clarification at every step in the thesis process. Studying applied evolution is an intensely personal experience, as it forces confrontation with deep-seeded beliefs about religion,

purpose, and meaning. The complexity of the subject requires a skillful, nuanced approach. I am grateful to have had such an outstanding educator to guide me down this path.

I am especially grateful to the political scientists, psychologists, sociologists, economists, anthropologists, and evolutionary scientists whose work I draw on throughout this endeavor. My project owes everything to the efforts of these individuals. Additionally, I deeply respect the committed scholars of my generation who have chosen to make these questions their life's work. I admire your unrelenting devotion to the pursuit of truth.

Thank you to my loving parents, John and Sherrie Burger, who have made incredible sacrifices so that I can pursue my dreams. Everything I am, I am because of you.

Preface

During the first semester of my junior year, my intellectual life was infiltrated by a magnificently simple, yet overwhelmingly powerful idea: the theory of evolution. Of course, I had learned about evolution in high school. I memorized the terminology, studied the phylogenetic tree, and read about Darwin sailing the *Beagle* to the Galapagos to look at finches - or was it tortoises? Clearly, this was not an expansive or comprehensive view of evolutionary theory, this was the study of evolution by name alone. The superficiality of my evolutionary education was shattered after I enrolled in a course entitled *Evolution and Human Nature*. This transcendent intellectual experience transformed evolution from an interesting biological fact into a pervasive influence on how I see the world. Socialized patterns of gender discrepancies, male propensity for violence, out-group oriented xenophobia, selfishness, altruism, and social cohesion all became irreversibly enlightened by the study of our evolutionary past. It was as if a veil had been lifted, exposing me to the intensely organic character of my human identity.

In the midst of this personal renaissance, I sought out ways to apply an evolutionary perspective to the issues I was studying in political science. I saw evolutionary theory as an indispensable supplement to the social sciences. History is often touted as an essential tool for examining social phenomena, so how could I ignore the impact of four billion years of history in the form of natural

selection? I felt like Charley in an intellectual chocolate factory, and evolutionary psychology was my golden ticket.

As this course progressed, I began to bridge more and more parallels between our evolved identity and social behavior. Political science lacks the satisfaction of absolute truths, as the complexity of social behavior often escapes irrefutable theory. I looked to the empirical refuge of the natural sciences as a source of somewhat more reliable predictions and conclusions about human nature and the ubiquities of human action. I found myself trying to approach the problem in a way that clarified the raw material, the human element, of political science.

I was utterly confused at why I hadn't been exposed to these ideas before. I remember thinking one day that social scientists must just take evolution as a given. It may be such a big idea, present in such overwhelming proportion, that it was simply outside the scope of more precise scholarship. "Of course evolution matters, now let me tell you about the impact of *Citizens United* on campaign financing." This is a fair assertion, because not every conversation warrants an evolutionary reference. What I found absolutely astounding, inexplicable really, was that my search for interdisciplinary research between evolutionary theory and political science turned up almost nothing of prominence. In fact, a substantial amount of scholarship was actually arguing *against* integrating an evolutionary perspective into the social sciences!

My three-way honeymoon with evolutionary theory and political science was over before I even opened the first bottle of champagne. As I began to read

more and more about the intersection of biology and politics, my initial enthusiasm began to simmer down. Social constructivists prodded me to ponder, where is culture in all of this? An atrocious history of biological determinism, eugenics, and Social Darwinism made me wonder if I was just playing with fire, soon to be burnt by ideas that I found morally repulsive. I began to sympathize with the hesitation. Ideas have power, and beliefs about the political world are uniquely consequential. Despite this much-needed caution, I still believed that to ignore the vastness of our evolutionary past was to overlook the inescapable reality of the present. I climbed down from a zealous pulpit and began to rebuild my evolutionary creed.

This thesis is in many ways a reflection on my intellectual journey over the past two years. This is a deeply personal undertaking, and it is worth noting that I am still struggling to define my personal philosophy in relation to these issues. I am drawn to these sorts of questions because they allow me to “see the forest for the trees,” and provide an exciting exercise in tying the currents of history, culture, power, and identity to the socio-political present. To me, there is no greater endeavor than the search for social truth, even if no such thing exists.

Building off this intimate motivation, my aim is to reach out to those that are skeptical of integrating evolutionary theory into the social sciences. The roots of this ambition can be traced to my commitment to the pervasiveness of evolution and my continued love of political science research. My primary objective is to create a source of interdisciplinary dialogue by highlighting the potential relevance of evolutionary approaches and perspectives to social inquiry.

I also want to present an account of one approach - evolutionary psychology - that breaks down existing stereotypes about the evolutionary sciences. I specifically hope to present a version of evolutionary psychology that deadens the ever-present critique that evolutionary theory does not account for the influence and importance of culture. I argue that we are social beings who have evolved highly sensitive, complex, and context specific psychological mechanisms for navigating the social world. I want to show that genetic determinism is not intrinsic to the evolutionary perspective. Additionally, evolutionary psychology tells us something about the influence of psychological mechanisms in affecting human behavior, but it does not give way to normative answers or a naturalistic moral system.

Despite these limitations, this paper *does* argue that the study of social institutions, cultural practices, and individual behavior can be critically informed by the light of evolutionary theory. Evolution tells us something profound about who we are, and guides our ability to make determinations on how social conditions and political institutions interact with the psychological mechanisms that affect social and political behavior. I go about this goal by clarifying evolutionary concepts, pointing out possible avenues of exploration, and constructing a preliminary framework for understanding the epistemological utility of evolutionary psychology.

This thesis is guided by certain fundamental questions. What can we learn from our evolved nature? How can we use this in understanding political behavior and social context? What are the limits of using evolution to bring about the world

in which we wish to live? In short, the audience I wish to reach are those concerned with the same sincere questions that Paul Gauguin asked in the title of his post-impressionist musing on sorrow, death, and the meaning of life:

Where do we come from? What are we? Where are we going?

Introduction

To take evolution to be true is to concede our biological existence to the power of a singular idea. This is a terrifying proposition, as it challenges the ethical and cultural foundations on which we have traditionally constructed social discourse. Evolutionary science implies the existence of “human nature,” as it tells us something about the ubiquitous character of emotion, reason, and behavior. This is a cause of much concern. In the realm of the social sciences, “Darwin’s Dangerous Idea” has been mostly excluded in mainstream social discourse, and if included it is almost universally rejected as being irrelevant to the study of social behavior. [1]

What is perplexing about this rejection is that political science has a long and storied philosophical history of searching for human nature. For millennia, philosophers have sought to define the fixed terms of the human experience. Plato arduously constructed his version of the perfectly “just” political entity by dividing its members according to their natural capacities, entrenching class associated determinism into his normative vision. [2] In the 16th century, Thomas Hobbes tried his hand at solidifying the legitimacy of monarchical government by articulating his vision of man in the State of Nature, a primal period antecedent to the societal institutions of the state. [3] From Hobbes’ unsettling conclusion that life is “solitary, poor, nasty, brutish, and short,” to Rousseau’s fantasy of the

¹ Dennet, D. (1995) *Darwin’s Dangerous Idea: Evolution and the meanings of life*. Simon & Schuster.

² Plato. *The Republic*. Jowett, B. (1941) New York: The Modern Library.

³ Hobbes, Thomas. (1651) *Leviathan or the matter, forme, and power of a common wealth ecclesiasticall and civil*.

“noble savage,” political theorists have sought to uncover what makes human beings ubiquitously human. [4] Additionally, these works are an integral part of any basic education in political theory. If the prevalence of these works is taken to be an indication of their importance within the discipline, then consensus suggests that reading authors like Hobbes and Rousseau is a valuable undertaking – if only to point out the folly of their ways. Political scientists are apt to struggle against the essentialists of the past, but many reject an exchange with a scientific account of human nature in the present.

Appearing at the chronological midpoint between Thomas Hobbes and the modern day, Charles Darwin’s *On the Origin of Species* introduced evolution by natural selection. This beautifully simple, yet explosively universal idea would bring about a revolution in how we think about our organic identity. Evolutionary theory provides us with the only scientifically tenable explanation of the origins of humankind, making this secular revelation one of the greatest discoveries in the history of humanity. Evolution is the foundation of the life sciences, but it is disproportionately underutilized outside of the biological sciences. [5] From the very beginning, Darwinian approaches stimulated intense debate about how to reconcile a naturalistic origin of humanity with the established traditions of Western philosophy, religion, and the humanities. [6] One hundred and fifty years later we are still struggling to grapple with our evolved identity in relation to culture, political power, and social forces.

⁴ Rousseau, Jean-Jacques, (1754) *Discourse on Inequality*.

⁵ *Public's Views on Human Evolution*. Pew Research Centers Religion Public Life Project . N.p., 30 Dec. 2013. Web. 14 Apr.

The intersection of biology and social behavior came into contemporary focus with E.O. Wilson's 1975 publication *Sociobiology*, a book that would lend its name to an entirely new field of behavioral sciences. [7] Wilson's book set out to examine social behavior through an evolutionary lens, using natural selection to explain contemporary behavioral patterns. His groundbreaking work was praised by some as a new paradigm for social research. These initial evolutionary apologists proclaimed evolution to be a panacea for simplifying the complexity of human behavior, with some calling for a revolution within the social sciences. [8] Many of these naturalists heralded an empirical replacement for the ungrounded philosophical abstractions that had long formed the theoretical basis of social science.

Conversely, critics accused Wilson of biological determinism and likened his conclusions to the horrors of Social Darwinism and eugenics. Many advanced a "blank slate" conception of the mind. This view asserts a position similar to Locke's view of the overriding centrality of experience and culture, along with an implicit (or on occasion, explicit) acceptance of a view akin to Cartesian Dualism, in which the mind exists separately from the neurological structures of the brain. In the field of applied evolution, the idea that the mind contains no predetermined mechanisms for behavior is commonly referred to as the Standard Social

⁷ Wilson, E. O. (1975) *Sociobiology: The new synthesis*. Cambridge, MA. Harvard University Press.

⁸ Barkow, J. (Eds.) (2006) *Missing the Revolution: Darwinism for social scientists*. New York, NY. Oxford University Press.

Science Model (SSSM). [⁹] This critique stems from the deep-seated resentment of any notion of a human nature in 20th century social science literature. This argument claims that all behavior is determined by social and cultural conditions, and there exist no innate tendencies that affect action and individual choice. One example of this backlash was the 1986 adoption of the UNESCO Seville Statement on Violence, which rejected “the notion that organized human violence is biologically determined.” [¹⁰] It should be noted that the SSSM in some ways oversimplifies the mainstream tenets of the discipline. But this term proves to be a useful heuristic device in tracing historical objections to the existence of a biological “human nature.”

This thesis will argue that both the SSSM and an approach that cedes too much to genetic determinism are mistaken. As Steven Pinker writes in his much-cited critique of the blank slate paradigm, “the main problem is that the blank slates don’t do anything. No one can deny the central importance of learning, cultural, and socialization in all aspects of the human experience. The question is, how do they work.” [¹¹] I will present evidence that attempts to provide an incremental step in the long and tedious journey of finding answers to this question. There are valuable lessons to be learned by integrating knowledge and perspectives from the natural sciences to the study of social behavior.

In addition, I want to show that although the social sciences could be greatly informed by the evolutionary perspective, their approach is not discredited

⁹ Barkow, J., Cosmides, L., & Tooby, J., (1992) *The adapted mind: Evolutionary psychology and the generation of culture*. Oxford University Press.

¹⁰ Pinker, S. (1997) *How the Mind Works*. W. W. Norton & Company, p. 44 and 49

¹¹ Pinker, S. (2003) *The blank slate: the modern denial of human nature*. Penguin Books.

by it. Understanding social influence requires investigation at another level, a cultural and social level. Also, evolution ultimately cannot (and should not) provide normative answers to the structure of social policy. To see ourselves as a product of evolution is to break down the established divide in separating humanity from the natural world, sparking questions concerning our purpose, our future, and the essence of our soul. However, evolution's unceasing disruption of traditional notions of human identity does not lead us to conclusions about what sort of society we want to become. My conclusion preserves the value of conventional social science while calling for a more integrated approach.

As the field of sociobiology matured, new ways of conceptualizing the evolutionary mechanisms of consciousness and behavior, alongside developments in cognitive science and neuroscience, crafted the subfield of evolutionary psychology. This approach seeks to use evolutionary theory to understand the cognitive, physiological, and emotional mechanisms that influence human behavior, and this approach has been largely unexplored and underemphasized within mainstream political science literature. There are varying approaches and terminology for the application of evolution to human behavior, but I have chosen to focus on evolutionary psychology because it spans a broad range of theory and research. It is also widely used within the relevant literature on applied evolution.

Ultimately, this thesis sets out to provide an exploratory synthesis – a pilot study or first step, not a conclusive account – of two disciplines: political science and evolutionary psychology. First, I will provide background information on

relevant principles and processes of evolutionary theory while supplying a foundational description of the principles and process of evolutionary psychology. The second section introduces the primary concepts of evolutionary theory as applied to human behavior, wrestles with critiques and historical misuses, and ultimately constructs a more nuanced vision of the utility of evolutionary psychology and its application to socio-political phenomena. Third, I ground these assertions in a discussion of social inequality, highlighting the unique ability of evolutionary psychology to enlighten our understanding of social and political behavior in the face of social constraints. The conclusion will develop a preliminary framework for conceptualizing the descriptive and normative functions of evolutionary theory within political science.

Section 1: Evolutionary Psychology Defined

Defining the process

Charles Darwin's *On the Origin of Species* revolutionized the way that we think about life on earth. [¹²] Delivering more than a simple description of the similarities and differences between organisms, Darwin's work explained the mechanism for biological change over time. He sought to understand not just how, but *why* species are so especially suited to their environments. The process of natural selection would become the backbone of Darwinian theory, as it explains the ever-present forces that have shaped life on earth since it first appeared over 3.7 billion years ago.

The process of natural selection requires three essential elements. [¹³] The first is *variation*, meaning that organisms differ in the traits that they possess. Without variation, there would be no distinguishing characteristics to differentiate fitness outcomes and therefore no disparities in reproductive success. This leads to the second element of natural selection, *inheritance*. This entails that variation based on genotypic differences be passed from generation to generation through a biological medium (in humans DNA) at differing frequencies. The third pillar of natural selection is *differential reproduction*, in that the inheritable variations have consequential effects on an organism's survival and reproductive success. The

¹² Darwin, C. (1854) *On the origin of species*.

¹³ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

conditions of life on earth meet all three of these requirements, allowing natural selection to act as the primary vehicle by which selection pressures have come to craft the vast diversity of life on earth.

Despite the immense power of natural selection in shaping adaptive traits linked to survival, Darwin realized that it could not account for the entire range of variation found in the biological world. After all, how could a peacock's tail make it more suitable to its environment? This extra pomp is metabolically costly and seems to provide no obvious benefit to survival. Also, what could possibly explain phenotypic differences between males and females if they live in the same ecosystem? Why would males and females show any differences if they both existed in the same environment of evolution? Understanding the full extent of variant traits requires the complementary process of sexual selection. [14]

Adaptations resulting from sexual selection are not selected for because they are beneficial to an organism's survival, but because they impact reproductive success. There are two complementary components to this theory. The first is intersexual competition, or preferential mate choice. If there is a consensus between members of one sex regarding desired qualities – such as security, resource access, or traits that display overall health – the organisms of the opposite sex that exhibit these qualities will have higher reproductive success and thus pass these traits on to the next generation in greater proportion. [15] This helps to account for the evolution of the peacock's tail. Studies have shown

¹⁴ Darwin, C. (1854) *On the origin of species*.

¹⁵ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

that females prefer males with the largest and most flamboyant tails, probably because they signal general good health. The gradual accumulation of reproductive advantage of those male peacocks that exhibited the largest, most elaborate tails has led to the gradual evolution of their present form.

The second facet of sexual selection is intrasexual competition, which involves competition between members of the same sex to in order to gain access to desired partners. Intrasexual selection accounts for the competitions between same-sex organisms as they challenge each other for resources that determine reproductive success. Primate research shows that the prevalence of aggression in human males is likely a product of intrasexual competition. [¹⁶] Those males most able to defend their resources, stake claim to assets of others, or win status through violence are also those with the highest rates of reproductive success. Reproductive inequality between members of the same sex slowly selects for traits that prove instrumental in gaining reproductive access to a member of the opposite sex.

Building on George C. Williams' *Adaption and Natural Selection*, David Buss describes three products of the evolutionary process: adaptations, by-products, and evolutionary noise. [¹⁷] [¹⁸] Elaborating on the differences between these elements helps to establish a more nuanced appreciation for how evolution has come to shape the characteristics of organisms. First, natural selection

¹⁶ Peterson, D. & Wrangham R. (1997) *Demonic Males: Apes and the origins of human violence*. Mariner Books.

¹⁷ Williams, G. C. (1966) *Adaption and Natural Selection a critique of some current evolutionary thought*. Princeton University Press

¹⁸ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

brings about *adaptations* that help to solve problems of survival or reproduction existing in the *Environment of Evolutionary Adaptedness* (EEA). In order to assert that a characteristic is an adaptation, the trait must be shown to be reliable, efficient, and economic. Is the trait evident in most members of the species and does it reliably perform in the environmental context in which it arose? Does the trait solve a particular fitness problem faced by organisms in a certain environment? Is the characteristic worth the physiological, reproductive, and energy costs required for its development? [¹⁹] According to Steven Pinker, adaptations are traits with “improbable usefulness,” meaning that these characteristics are too precisely in-tune to an adaptive problem to be explained by chance alone. [²⁰]

If natural selection is the process by which genetic frequency is manipulated, what explains the initial emergence of genetic variance that gives rise to variant traits? The answer lies in genetic mutations. Although the vast majority of mutations provide no adaptive benefit, those few that provide some degree of fitness advantage (enhanced probability of survival and reproduction) are passed down to subsequent generations with greater frequency. These adaptations occur over a *period of evolution*, which ranges widely based on environmental context, trait complexity, and the time at which the initial mutation occurred.

¹⁹ Williams, G. C. (1966) *Adaptation and Natural Selection a critique of some current evolutionary thought*

²⁰ Pinker, S. (1997) *How the mind works*. New York, NY: Norton

The Environment of Evolutionary Adaptedness (EEA) “refers to the statistical composite of selection pressures that occurred during an adaptation’s period of evolution responsible for producing the adaptation.” ^[21] The EEA is a reference to the selection forces, or adaptive conditions, through which characteristics arise. This should not be conceptualized as a particular time or place, but stretches back into “deep evolutionary time.” EEA is a holistic concept that takes into account the progression of environmental forces that have worked to shape changes in genetic information over time.

Take for example the EEA of the eye, which refers to the entire breadth of selection pressures that have come to shape vision structures over hundreds of millions of years. The first organisms possessing anything close to what we would consider an eye appeared only 550 million years ago. ^[22] Probably beginning as a simple patch of light-sensitive cells, survival advantages and incremental selection forces have given rise to the intricate structures of the human eye over a protracted timeline of evolutionary adaptedness. ^[23] As those organisms with sharper vision found themselves more apt to avoid predators or collect resources, they passed on these traits to the next generation with higher frequency as visual organ structures became more and more complex.

Despite the “miraculous” intricacy of our optic organ, the eye is far from perfect. It is particularly sensitive to damage, developmental deficiencies, and degradation from age; and millions of fragile blood vessels stream along the

²¹ Tooby and Cosmides 1992. *Psychological foundations of culture*. In J. Barkow, L. Cosmides, & J. Tooby (eds.) *The adapted mind* (pp.19-136). New York. Oxford University Press.

²² Nilsson, Dan-Erik. *PBS. Evolution: Darwin’s Dangerous Idea*. PBS, 2012. Web. 10 Apr. 2016.

²³ Nilsson, Dan-Erik. *PBS. Evolution: Darwin’s Dangerous Idea*. PBS, 2012. Web. 10 Apr. 2016.

surface of the eye as opposed to being buried in the protective interior. [²⁴] Far from an architect of flawless design, natural selection is a gradual, non-intentional process that advances in no direction except that determined by environmental constraints. Organisms do not foresee their needs and actively work to evolve a beneficial trait. Rather, the process of selection occurs because of the marginal advantage provided by a certain beneficial trait. These changes are incremental, occurring in steps from generation to generation.

Giraffes did not look to leaves in the top of the trees and decide that it would be advantageous to have long necks to reach higher leaves. Rather, the accumulation of the relative advantage of those with higher necks led to the gradual and unintended development of long necks because those with a fitness advantage (greater access to food that provided advantages that outweighed the costs associated with changes in neck length and structure) were able to more effectively pass these traits to the next generation. Evolution is not the “survival of the fittest,” but the “survival of the fitter.” This is to say that evolution in no way progresses towards perfection, as the forces that shape organismal development are blindly dependent on the environment pressures that have constrained life since the beginning of time.

The EEA can be easily misinterpreted, especially in the context of human evolution. The origins of our biological composition stretch back into deep evolutionary time, but when considering a number of factors that distinguish humanity from other species, one important frame of reference for EEA involves

²⁴ Nilsson, Dan-Erik. *PBS. Evolution: Darwin's Dangerous Idea*. PBS, 2012. Web. 10 Apr. 2016.

small-scale, social groups of hunter-gatherers. Humans have spent 99% of our (human) evolutionary history in these micro-societies. [²⁵] As a result, our characteristics as a species have likely been profoundly shaped by the environmental pressures of hunter-gatherer life. Evolutionary psychology and related fields draw on this setting as an important component of many predictive theories. We can suspect that traits that would have been advantageous in this context would be traits that we see in humankind today. This stems from the sheer proportion of time *Homo sapiens* spent adapting to this environment. We can piece together an image of what life was like in hunter-gatherer societies through direct and indirect evidence. “Key elements of the ancestral environment of humans can be accurately described by reference to [existing] hunter-gatherer societies, paleontological findings, and comparative studies of our closest primate relatives.” [²⁶] Despite our knowledge of our hunter-gatherer identity, short-term environments would have been constantly changing and it is extraordinarily difficult to pinpoint an exact timeframe for the Environment of Evolutionary Adaptedness of a specific trait.

Along with adaptations, the second product of evolution are by-products. These characteristics do not solve an adaptive problem, but are “carried along” with traits that have adaptive utility. By-products “happen to be coupled with

²⁵ Barkow, J., Cosmides, L., & Tooby, J., (1992) *The adapted mind: Evolutionary psychology and the generation of culture*. Oxford University Press.

²⁶ Tooby and DeVore (1987) *The reconstruction of hominid behavioral evolution through strategic modeling*. In WG Kinzey (ed), *The evolution of human behavior. Managerial and decision economic*, 27, 103-129

those adaptations” and thus become common in a species. [²⁷] Some critics accuse evolutionary psychology of overemphasizing the adaptational utility of psychological mechanism. This accusation of *panadaptationism* stems from the incorrect assumption that if some cognitive mechanisms are the result of adaptations, then all facets of human behavior must be associated with some evolutionary advantage. [²⁸]

This critique is often raised in the debate concerning male violence, especially sexual violence. Opponents of an evolutionary explanation for male violence assert that evolutionary psychology justifies rape and sexual assault by determining these acts to be “naturally” advantageous. However, Thornhill and Palmer have shown that sexual violence may very well be an atrocious and maladaptive by-product of male aggression and sexual desire. [²⁹] The normative nuance of evolutionary theory will be discussed in greater detail in Section 3, but it is still important to note that pointing out the evolutionary origins of a certain behavior in no way justifies that act.

The final product of natural selection can be described as evolutionary noise. These traits arise due to the random effects of chance mutations and developmental processes. These are characteristics that have not been selected for or selected against, and result from physical structural constraints, or more or

²⁷ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.p.36

²⁸ Alcock, J. (2015) *Where do we stand with respect to evolutionary studies of human behavior*. In Turner, J., Machalek, R., & Maryanski, A. (Eds.) *Handbook On Evolution and Society*. (2015) Paradigm Publishers.

²⁹ Thornhill, R., Palmer, C. (2000) *A natural history of rape: biological bases of sexual coercion*. Cambridge, Mass. MIT Press.

less coincidental genetic transfer at high frequencies. Another form of evolutionary noise derives from developmental processes. The shape of the belly button serves no adaptive function, but exists due to its indirect connection to a critical developmental stage. Evolutionary noise can be said to occur at the fringe of natural selection, arising without a direct role in resolving an adaptive hurdle.

Health and the Evolved Body

The process of evolution has created both body and mind. The physiological interactions we have with the environment are intuitively discernable; we touch, we sing, we feel pain. The flesh and bone of our corporal existence seem unavoidably biological. The mind is not so readily linked with the natural, although it is just as much a function of biology as any other feature. The following discourse will examine the dysevolutionary mismatch between physical health and modern society to provide an argument by analogy for pursuing an investigation of the relationship between evolved psychological mechanisms and contemporary socio-political behavior.

In *The Story of the Human Body*, evolutionary biologist Daniel Lieberman discusses the paradoxical condition of health in the modern world. Lieberman argues that in many ways we live in the healthiest period of human existence, as wealthy nations usher in an unsurpassed era of public health by capitalizing on an endless deluge of medical breakthroughs. Despite this progress, many preventable diseases such as obesity, diabetes, heart disease, depression, and

anxiety continue to plague millions around the world, and appear to be increasing in frequency – in some cases dramatically so. Lieberman argues that the evolutionary story of our bodies is critical in describing the “dysevolutionary mismatch” between policy, societal conditions, and our evolved nature. His analysis suggests that our adapted response psychology interacts negatively with the chronic stress, caloric abundance, and sedentary lifestyle that typify modern life. He advocates incorporating an evolutionary perspective into the arena of public health, claiming that “society’s general failure to think about human evolution is a major reason we fail to prevent preventable diseases.”^[30] These evolutionary mismatches place a heavy toll on public health infrastructure, and the United States spends more than two trillion dollars annually on healthcare costs, with more than 70 percent of these illnesses classified as preventable.^[31]

What does it mean for a trait to be mismatched to the conditions we find ourselves in today? In an ancestral environment, humans struggled to maintain an energy surplus and this selected for a potent attraction to high-calorie, sugary foods. The overwhelming proportion and availability of high calorie, low-fiber foods in our modern diet interacts with this evolved tendency to consume these energy-rich foods at a high rate. This drives up obesity rates and increases susceptibility to type 2 diabetes. Additionally, our stress response evolved to induce a *temporary* state of heightened sensitivity toward a potentially harmful

³⁰ Lieberman, D. (2013) *The story of the human body: Evolution, Health, and Disease*. Random House. p. xi.

³¹ Lieberman, D. (2013) *The story of the human body: Evolution, Health, and Disease*. Random House. p. 351

external stimulus. The chronic stress experienced by many people today is profoundly different from that of our evolutionary predecessors, resulting more from social pressures than from immediate instances of flight or fight. Stress induces the release of cortisol, a hormone that stimulates an urge to bring energy into the body through caloric consumption. The interplay between our evolved appetites, food abundance, and stress reactions give rise to a situation where our evolved tendencies are mismatched to the context in which we live.

Lieberman espouses a belief that culture is critical in influencing the manner in which we interact with the environment. In *Catching Fire: How Cooking Made us Human*, another work focused on our evolved relationship with food, Richard Wrangham provides a vivid account of how cooking is an instrumental component in the history of human evolution. ^[32] He cites numerous studies that have found that the body absorbs substantially more calories and nutrients from cooked food than raw food, creating an energy incentive to commit time to preparing food. Cooking is a method of increasing caloric efficiency by “outsourcing” a portion of the digestion process. He postulates that cooking was instrumental in providing the context in which the human brain, a massive energy consumer, was able to develop. He notes differences between the guts of apes and those of humans, concluding that cooking allowed humankind to divert investment in a bigger gut towards cerebral tissue and a brain with high-energy demands.

³² Richard Wrangham (2013) *Catching Fire: How Cooking Made us Human*. Profile Books

This case illustrates the notion of gene-cultural coevolution, a view in which genetic and cultural factors exist in a symbiotic and interrelated relationship. Lieberman points to cultural evolution as a potent force in shaping the mismatched environmental context of modern life. “The rate and power of cultural evolution has vastly outpaced the rate and power of natural selection, and the bodies we inherited are still adapted to a significant extent to the various and diverse environmental conditions in which we evolved over millions of years.”^[33]

So how do we go about turning the tables on these negative consequences? “Education and empowering” may be generally ineffective in making a lasting difference, as human beings are not predisposed to making long-term calculations concerning calorie consumption or mental health. There was just no need to develop this sort of instinct when our ancestral environment was replete with instantaneous threats to caloric intake. The primary mechanism for change lies in our ability to manipulate the cultural context that drives our interaction with the environment. This can be done by rethinking social and economic policy.

Cultural changes affect norms that influence action or inaction, and policy decisions are potent social factors that shape the interactions between culture and biology. Lieberman argues that “... interactions between the bodies we inherited, the environments we create, and the decisions we sometimes make

³³ Lieberman, D. (2013) *The story of the human body: Evolution, Health, and Disease*. Random House. p. 349

have set in motion an insidious feedback loop.”^[34] This feedback loop occurs when policy decisions exacerbate the conditions of dysevolutionary mismatch. Lieberman advocates a sort of “libertarian paternalism,” in which government intervention encourages decisions that align with positive health outcomes while preserving the freedom of choice to defy the intent of these policies. He suggests that, “an evolutionary perspective suggests that we sometimes need help from external forces in order to help ourselves.”^[35] These initiatives could include increased excise taxes, stricter standards on food labeling, regulation of marketing tactics used to pass sugar-packed foods as “fat-free,” and ending politically-entrenched farming subsidies that encourage the production of high-fructose corn syrup.

If we are able to build policy prescriptions from an evolutionary description of our physiology, is it possible to use this approach in seeking answers to the psychological underpinnings that guide political behavior? There appears to be a substantially greater willingness to accept an evolutionary description of our bodies as opposed to the function of one specific body system - our brain (minds). Considering the relationship between physical health and our evolutionary history seems more approachable than efforts to relate adaptive processes to the intimidating complexity of human psychology. Politics is often thought to exist outside of organic reality, in a realm of ideas, values, and cultural norms. What is so powerful about evolutionary psychology and other evolutionary

³⁴ Lieberman, D. (2013) *The story of the human body: Evolution, Health, and Disease*. Random House. . p.xii

³⁵ Lieberman, D. (2013) *The story of the human body: Evolution, Health, and Disease*. Random House. . p.361

approaches, is that these intangible energies associated with political thought are seen as consistent, even predicted, by an evolutionary perspective. Our mind is an evolved entity, a product of the gradual selection of neural mechanisms that has given rise to our remarkable capabilities for speech, thought, action, and politics. Political behavior does not exist outside of the constraints of our biological identity. Thus, an evolutionary epistemology allows us to formulate powerful conclusions concerning the nature of political action, the meaning of social constraints, and the power of environmental influence.

Building Evolutionary Ideas

Before delving into a discussion of the political utility of evolution psychology, it is important to clarify the process by which evolutionary ideas are formed. A frequent criticism of evolutionary psychology claims that evolutionary scientists do not approach their work with scientific integrity, instead arriving at their conclusions through “just-so” stories. A “just-so” story is an attempt to supply an observed behavioral pattern with an organic origin by constructing an arbitrary evolutionary narrative explaining what is already known to be true. This criticism is commonly attributed to Jay Gould, an ardent critic of sociobiology in the 1970s, who viewed the emerging field as a “particular theory about human nature, which has no scientific support.” [³⁶] *Particular* in this case is taken to mean arbitrary or idiosyncratic. “These pseudoscientists [sociobiologists] start

³⁶ Allen, E., Beckwith, B., Chorover, S., Culver, D., Duncan, M., & Gould, S.J. (1976) *Sociobiology – Another biological determinism*. *BioScience* 26, 182-186

with an assumption...that they then support by selective data collection before constructing some sort of wild theory (namely a just-so story) about the evolutionary basis for what they assumed was true from the beginning.” [37]

Although still prevalent in contemporary assessments, Gould mischaracterizes the epistemological approach of the evolutionary behavioral sciences. The process of investigating an evolutionary basis for behavior begins, as any science would, on a set of testable presumptions. In the case of evolutionary approaches, researchers begin with a hypothesis that is grounded in evolutionary theory. They speculate on what sort of behavioral traits may have been selected for in ancestral conditions, and then go about testing the validity of their prediction by comparing their hypothesis with observed reality. In other words, an evolutionary narrative is not crafted to fit a particulate set of data. Rather, evolutionary theory is used to construct testable hypotheses based on what is expected to be true. This approach does not differ substantially from standard processes of good science found in other empirical disciplines.

In his text on evolutionary psychology, David Buss provides a four-tier framework for understanding the method of analysis behind evolutionary psychology. [38] The first level of thought is *general evolutionary theory*, which encompasses the broad application of natural selection and sexual selection as a mechanism for genetic change over time. Applying the theory of evolution to a specific adaptive problem leads to *middle-level evolutionary theories*. Middle-

³⁷ Alcock, J. (2015) *Where do we stand with respect to evolutionary studies of human behavior*. In Turner, J., Machalek, R., & Maryanski, A. (Eds.) *Handbook On Evolution and Society*. (2015) Paradigm Publishers.

³⁸ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

level assertions are broad in scope and can be empirically tested. One such theory argues that members of the sex that invests the most resources in their offspring will evolve to be more particular about mate selection than members of the opposite sex. Conversely, members of the sex that contributes the least resources are expected to have evolved to be less selective. Also, the members of the low-investing sex are anticipated to have higher levels of intrasexual competition as they struggle to gain access to a high-investing (and thus more selective) mates. The epistemological origin of this conclusion is grounded in evolutionary theory, not direct observations of conditions presumed to be true.

The interesting thing about this assertion is that it does not presuppose that the high-investing sex must be female, although lengthy gestation and the energy demands of lactation makes this more likely to be the case for humans. Male pipefish seahorses receive eggs from the female and incubate them as they carry them in a special pouch. These males commit extensive time and energy towards protecting their offspring during the incubation phase. In line with this evolutionary hypothesis, the female sea horses compete aggressively with each other for access to the most impressive males, while the males remain highly selective about what females to mate with.

If verified by observational data, a middle-level analysis can provide a path towards *specific evolutionary hypotheses*. In relation to parental investment, one could hypothesize that women have evolved mate preferences for men who are both able and willing to contribute resources to them and their children. This assertion begins to delve into the world of evolutionary psychology as it

presupposes the existence of a “specific psychological mechanism – a desire – that is designed to solve a specific human adaptive problem, namely securing a mate who appears capable of investing in children.” [39] If we take as an important EEA for many human characteristics the range of settings associated with hunter-gather societies, it would be expected that the parameters of mate choice have aligned with traits that would be advantageous in this environment. For example, women may prefer men who have “athletic prowess, good hand-eye coordination, and the physical endurance needed for hunting” because these traits demonstrate a capacity for resource commitment and protection. [40]

Specific hypotheses are then tested through empirical observations, and the verification of a specific evolutionary hypothesis leads to the formation of *predictive assessments*. One groundbreaking study compared the relative value males and females place on certain traits - earning capacity, ambition, industriousness, youth, physical attractiveness, and chastity - when searching for a partner across 37 cultures. [41] The results showed that women placed a higher value on cues for resources acquisition than did men, while men were more focused than were women on reproductive capacity in a potential partner. From this study, one could predict that women are more likely to prefer men that signal their willingness to invest in children or those associated with a higher social

³⁹ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.p.41

⁴⁰ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.p.41

⁴¹ Buss, D. (1989) *Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures*. Behavioral and Brain Sciences 12(1)

status. [⁴²] However, even the most fascinating prediction means nothing if it cannot endure repeated empirical investigation. Also, basing a prediction on a verified hypothesis does not automatically concede the validity of the assessment. The power of evolutionary theory relies on the weight of empirical support, not in the novelty or controversy of its predictions.

Evolutionary Psychology

All behavior requires physical structures, and the mind cannot escape the constraints of its material form. Psychology, as an effort to study human behavior and the processes of the mind, can be characterized as an empirical investigation of “human nature” through the examination of individual cases and the establishment of general principles. Evolutionary psychology goes one step further in asserting that every species has an *evolved* nature, or distinguishing behavioral characteristics that define them as a species. Evolutionary psychology allows us to connect the past with the present by mapping the machinery of evolution and gaining insight on the products of that process.

Evolved psychological mechanisms form the conceptual core of evolutionary psychology. These are evolved behaviors resulting from selection forces that shape the interactions between environmental stimuli and cognitive

⁴² This discussion serves as a sparse review of existing literature concerning evolved mate preferences. This example was mostly used as a demonstration for how predictive assessments are formed. For a more complete discussion of sexual selection, mate preferences, the crucial role of mothers in human evolution I recommend *Mother Nature* by Sarah Blaffer Hrdy.

processes. Again, I refer to Buss's textbook for conceptual clarification by looking at his six-stage definition for an evolved psychological mechanism:

(1) An evolved psychological mechanism exists in the form that it does because it solved a specific problem of survival or reproduction recurrently over evolutionary history.

(2) An evolved psychological mechanism is designed to take in only a narrow slice of information.

(3) The input of an evolved psychological mechanism tells an organism the particular adaptive problem it is facing.

(4) The input of an evolved psychological mechanism is transformed through decisions rules into output.

(5) The output of an evolved psychological mechanism can be psychologically active, information to other psychological mechanisms, or manifest behavior.

(6) The output of an evolved psychological mechanism is directed towards a solution to a specific adaptive problem. [⁴³]

In sum, psychological mechanisms evolved because they produced relatively advantageous behavior in response to specific classes of adaptive challenges presented by EEAs. These environmental forces selected for psychological mechanisms that generate action according to sets of decision rules, and these actions provided the organism a fitness advantage. Take for

⁴³ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education. p.46

example seeing a snake slither across the ground next to you. As your eyes pick up on the apparent threat, your body is hit with an instantaneous jolt of panic, heightening your senses and forcing a reactionary decision. This moment requires the rapid synthesis of a visual cue, neurological response and mechanical action. The evolved (and largely implicit) initial fear response generated by the amygdala produces outputs to other brain systems, and leads to a set of decisions, freezing up or fleeing, that helps to navigate what could be a dangerous situation. Those organisms that were able to quickly recognize and react to the sight of a snake were at a relative advantage as compared to those with a slower physiological response or worse vision.

Anthropologist Lynne Isbell argues that primates have evolved a latent fear of serpents, pointing to a profound sensitivity to snake images across primate species. ^[44] She also suggests that the acuity and color sensitivity of our visual system owes much to the selection pressures provided by poisonous snakes. Her work points to discrepancies in vision abilities between primate species that live in areas with poisonous snake populations as opposed to those that do not. She argues that snakes established an adaptive impetus that led to the development of color vision and optical clarity in many primate species. Her theory helps to explain why lemurs in Madagascar have the worst color vision of any primate. With no brightly-colored poisonous snakes in their ecosystem, they simply lacked the selection pressures that could have led to better structures for this aspect of sight.

⁴⁴ Isbell, Lynne. (2011) *The fruit, the tree, and the serpent: Why we see so well*. Cambridge, MA: Harvard University Press

But what about snake handlers? Why don't they freeze up or run away at the sight of every snake; are they somehow destined to become snake handlers due to a glitch in their psychological system? Of course not, response mechanisms affect action by fast-tracking cognitive processes, but the astounding "specificity, complexity, and numerousness of the evolved psychological mechanisms" of the human mind give way to a remarkable level of behavioral flexibility. [⁴⁵] The long evolutionary history of the brain allows for interplay between a tremendous number of different psychological processes. This multiplex of cognitive and affective systems defies behavioral rigidity through complex arrangements of psychological responses. Snake handlers are not missing a certain psychological mechanism, they simply rely on the inherent complexity of neural responses to modify and control their fear response.

Some critics object to the very existence of psychological mechanisms, or scoff at any biological basis for common behavioral traits. Opponents may claim that behavior is entirely a product of learning and cultural inputs as opposed to rigid characteristics infused through evolution. In truth, this critique is aimed an evolutionary straw-man. All evolutionary scientists acknowledge the profound impact of learning and cultural variance in shaping human behavior. In fact, the conceptual foundations of evolutionary sciences stress the importance of cultural learning and social input. Social constructs and cultural norms enter our minds through an interaction with environmental stimuli, just as all evolved behavior is the result of interactions with exogenous inputs.

⁴⁵ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

Evolutionary psychology does not value nature over nurture, or vice versa. From a singular molecular process to genetic progression across evolutionary time, the process of evolution is driven by interactions between an organism and their environment. Because selection pressures are context specific, behaviors are also highly dependent on situational circumstance. Psychological mechanisms often require outside stimulus in order to function, and our identity as cooperative, social beings means that humans have developed extensive mechanisms to respond to cultural and social inputs. [⁴⁶] Our ability to absorb information from the environment, transform it, and be changed by it *is* the process of learning. This astounding feature of the evolved mind requires the existence of cognitive mechanisms that allow for the perception, analysis, and storage of contextual interactions. The obvious fluidity of the human mind does not negate evolutionary claims. Quite the opposite is true; evolutionary theory sheds light on the mind's evolutionary advantage in having outstanding cognitive flexibility and a remarkable capacity to absorb new information from our material and social environment.

Relevant Criticisms

Although the degree of refutation varies greatly across different disciplines and subfields of economics, political science, and anthropology, the most persistent opposition towards any notion of human nature comes from those who

⁴⁶ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education. p.53

subscribe to social constructivism. At the turn of the 19th century, constructivist scholars set the stage for the modern rejection of human nature. [47] Subscribers to his view, and various offshoots that proliferated during the 20th century, insist that behavior is shaped solely by social inputs and that any notion of human predispositions to violence, greed, or even generosity is out of line with reality. Many argue that a search for human nature is conceptually perilous, and morally suspect, insisting that any vision of a latent human identity is ripe with bias, prejudice, and mistaken assumptions. The modern social sciences often cast aside evolutionary approaches by demonizing an epistemology they see as reductionist and ignorant of proximate social influence.

Margret Mead looked to entrench cultural transmission as the sole determinant of human behavior through a cross-cultural analysis of sexuality. Through her 1928 anthropological study of the Samoan people, she reported to have found a tropical paradise free from the constraints of gender roles and without competition, violence, or sexual abuse. In many ways, her account of Samoan society fit the ideals of Rousseau's fantasy of the "noble savage," leading many to blame the moral shortcomings of Western culture as the central source of these evils. [48]

Although initially seen as a deadly blow to any ubiquitous account of human social behavior, Mead's investigation seems to have broken down after an in-depth analysis of her data and methodology. A study by Derek Freeman

⁴⁷ Alcock, J. (2015) *Where do we stand with respect to evolutionary studies of human behavior*. In Turner, J., Machalek, R., & Maryanski, A. (Eds.) *Handbook On Evolution and Society*. (2015) Paradigm Publishers.

⁴⁸ Mead, M. (1928) *Coming of age in Samoa*. New York, NY. William Morrow & Company.

discovered that the Samoan islanders Mead had previous thought to be peaceful were actually intensely competitive, and they had higher rates of murder and rape than the United States. [⁴⁹] Donald Brown's *Human Universals* further supported Freeman's rebuttal, asserting that there is more to human nature than a simple "capacity for culture." [⁵⁰] Many linger on the dreams of a society free of violence, competition, or sex differences, and despite the demonstrated inadequacies of her data, references to Mead are frequent in texts critical of an evolutionary approach to human behavior.

Advocates of this "blank slate" conception of the mind argue that we can bring humanity into line with normative ideals exclusively through cultural means. "Centuries – no, millennia – of effort in this line have largely failed, but that does not seem to daunt the keepers of this buoyant faith." [⁵¹] Innumerable religious institutions and political powers have tried to bring human nature in line with their moral creeds. Yet even religious institutions, that deny the existence of noninterventionist evolution, acknowledge the struggle and sacrifice required to bring oneself in line with an idealistic code. If there is not such thing as human nature, then what intangible force are these idealists constantly fighting against?

Beyond the blank slate debate, there are also varying lines of criticism regarding the epistemological prejudice and historical misuse of the evolutionary perspective. A pressing critique, and one that is especially important in light of this thesis, is that evolutionary theory provides justification for immoral and

⁴⁹ Freeman, D. (1983) *Margaret Mead and Samoa: The Making and Unmaking of an Anthropological Myth*. Penguin Books.

⁵⁰ Brown, D. (1991) *Human Universals*. McGraw Hill.

⁵¹ Konner, M. (2003) *The tangled wing: biological constraints on the human spirit*. 2ed. Holt Paperback

bankrupt political systems. Previous attempts to use evolutionary thinking in understanding social conditions have sought to combine biological determinism with political power. Herbert Spencer was a renowned intellectual at the end of the 19th century, and applied “survival of the fitness” to his social critiques. [⁵²] He urged a resistance to humanitarianism in an effort to hasten the process of natural selection in weeding out the weak from the societal gene pool. This perverse ideology bled into political programs in the early 20th century under the auspices of social “Darwinism” and the Eugenics movements. An unholy alliance between biological determinism and large scale “progressive” efforts to improve humanity led to the sterilization of thousands based on their perceived “ignorance,” and provided a pseudo-intellectual backing for racial superiority. [⁵³] Eugenics was a dominating force in American ideology at the turn of the century, and inspired German biologist Ernst Haeckel to state that “politics is applied biology.” Haeckel’s (and other’s) defense of racism, nationalism, and genetic determinism was later used as a rational defense for the Nazi’s “final solution.” [⁵⁴]

These criticisms are powerful objections that demand a credible defense. Genetic determinism, a pseudoscientific charge that long plagued the evolutionary sciences, has been discredited. A more complex understanding of basic evolutionary theory leads us to conclude what should have been obvious

⁵² Spencer, H. (1864) *Principles of biology*.

⁵³ *Imbeciles' Explores Legacy Of Eugenics In America*. All things considered. NPR. NPR, n.d. Web. 15 Apr. 2016.

⁵⁴ Alcock, J. (2015) *Where do we stand with respect to evolutionary studies of human behavior*. In Turner, J., Machalek, R., & Maryanski, A. (Eds.) *Handbook On Evolution and Society*. (2015) Paradigm Publishers.

from the very beginning. Genes do not determine the worth of a person, nor do they completely account for the various characteristics and dispositions of different people. Genetic determinism ignored a foundational tenet of modern evolutionary thought; that the answer to the age-old question of nature vs. nurture is not one or the other, but an utter and resounding “both.”

More complete philosophical understandings have changed the way evolution interacts with larger normative questions. In 1903, philosopher G.E. Moore used the is-ought problem articulated by David Hume to assert that it is fallacious to claim “goodness” on the basis of what may be “beneficial” in nature. [55] This objection to biological determinism is referred to as the *naturalistic fallacy* and has since become a guiding principle for the application of evolutionary thought. In this view, evolved traits are not morally justified by their adapted existence. The evolutionary sciences aim to describe the conditions and constraints of our adapted identity; they do not strive to affirm normative judgments by describing the facts of the natural world (in which humans are very much embedded). As stated by Steven Pinker, “the goal of science is exploration, not justification.” [56]

A related and much-cited criticism of sociobiology is that separating the sexes based on evolved traits is inherently sexist. “Darwinians have spent the past 40 years trying to explain and justify [gender differences in sexual behavior] on evolutionary grounds.” [57] Evolution has been accused of stabilizing a

⁵⁵ Moore, G. E. (1903) *Principia Ethica*. Cambridge University Press.

⁵⁶ Pinker, S. (2003) *The blank slate: the modern denial of human nature*. Penguin Books.

⁵⁷ Slater, D. 2013. “Darwin was wrong about dating” *New York Times*, Jan. 13

patriarchal status quo by providing a genetic basis for what we conceive of as masculine and feminine traits. How could evolution possibly account for the fluidity of gender identity and sexual orientation? As stated time and time again, evolutionary psychologists realize that environmental context is a significant influence in the phenotypic expression of behavior.

Social influence on *how* gender differences are expressed in society does not run counter to an evolutionary approach. Cultural variations in perceptions of gender are indeed worthy of scholarly analysis and critique. However, the susceptibility of gender expression to social influence does not nullify the impact of our genes in shaping cognitive pathways linked to biological sex. Just as genes impact physical appearances, basic differences in the genetic configurations of males and females influence the function of neural networks and psychological mechanisms. This section of the thesis outlined the principles of the evolutionary approach and wrestled with some its most significant criticisms. The following discussion will focus on implementing the evolutionary perspective in our thinking about political action, policy formation, and social identity.

Section 2: Evolution and the Social Sciences

"It may be a reflection on human nature, that such devices should be necessary to control the abuses of government. But what is government itself, but the greatest of all reflections on human nature."

- James Madison, Federalist No. 51

"Science is the most durable and non-divisive way of thinking about the human circumstance. It transcends cultural, national, and political boundaries. You don't have American science versus Canadian science versus Japanese science."

- Sam Harris, Neurophilosopher [⁵⁸]

A Political Animal in the Modern World

The previous discussion outlined the foundational components of evolutionary psychology and addressed some prominent criticisms. The following section will look to explore how we can better understand political behavior by acknowledging the influence of our evolved psychological mechanisms. What, if anything, can an evolutionary perspective tell us about the origins of political action? What would it look like to apply evolutionary thinking to a set of policy problems? Would we be able to formulate better of policy as a result of these findings? How far does the reach of evolutionary theory go in supplementing our normative vision of the social world?

An evolutionary approach to modern politics involves an investigation of the adaptive challenges associated with social conflict and the formation of

⁵⁸ Yang, Peter. "Print: Atheism's Poster Boy Sam Harris on the Science of Morality." Wired.com. Conde Nast Digital, n.d. Web. 18 Apr. 2016

empirically verifiable predictions for corresponding adaptations. It also requires a nuanced understanding of how these adaptive solutions fit into the modern realities of mass politics. The following section will explore the intersection of evolution and political science in an effort to demonstrate the utility of incorporating evolutionary theory into the social science discourse. The discussion that follows is a preliminary investigation into the value of understanding our evolved nature in the context of political and social behavior. First, I will outline general guidelines for thinking about politics from an evolutionary perspective. Second, I will use evidence to show that human beings are evolutionarily primed to form coalitions and engage in the political prioritization of interests. Finally, I will draw on this evidence to argue for a revised behavioral model distinct from those prevalent in mainstream social science.

A social advantage

Social life emerges “when organisms designed for propagation of their own genes come to depend on each other.”^[59] This stripped down definition of organismal interaction provides the conceptual basis for applying evolutionary theory to questions of social exchange. Mid-range evolutionary theories are applicable to the study of politics, as political decision making falls under the same sort of cognitive constraints as all other psychological processes. Although

⁵⁹ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. pp. 1084

selection pressures work through fitness inequalities, it is important to clarify that human beings do not strive to maximize fitness outcomes through a conscious assessment of how social rules will affect their reproductive prospects. We have evolved psychological mechanisms, which are not explicitly conscious processes, which utilize environmental inputs and produce behavior that would have enhanced fitness in ancestral circumstances. [⁶⁰] The collective fitness advantage of certain behaviors selected for cognitive mechanisms that aligned for these sorts of advantageous social behaviors.

In 1971 Robert Trivers, while still a graduate student at Harvard, put forth an argument for reciprocal altruism among nonrelated organisms. As defined by Trivers, reciprocal altruism is behavior that temporarily reduces one's fitness and increases the fitness of another, with the expectation that the other organism will act in a similar way in the future. Trivers calculated the costs and benefits of such behavior and arrived at a clear representation of the benefits of mutually beneficial relationships between members of the same species. [⁶¹] Those organisms that worked together through reciprocal altruism gained a degree of fitness enhancement that selected for cooperative capacities in a multitude of species, including our own.

The importance of social cohesion in solving environmental challenges helped select for traits that have formed humans into a political animal. Our capacity to work together is itself an advantage, but it is important to remember

⁶⁰ Tooby, J. and Cosmides, L. (1990) *The past explains the present: Emotional adaptations and the structure of ancestral environments*. *Ethology and Sociobiology*, 11(4), 375-424.

⁶¹ Trivers (1971) *Evolution of reciprocal altruism*. *Quarterly Review of Biology*, 46, 35-57.

that evolution works on an individual level. Thus, social cohesion has instilled in individuals psychological mechanisms that specialize in the assessment of social information and allows for the amalgamation of interests. Being able to recognize and relate to rules and norms is an adapted skill formed in the crucible of small-scale group living.

The ability of human beings to centralize information through collective learning and cultural transmission is critical to our success as a species. [⁶²] Humans have a profound ability to collectivize interests in an effort to solve larger challenges, and subsequently pass down environmental information from generation to generation. Forming social groups is clearly advantageous, but what arise from this propensity are conflicts between members of a group over resource allocation. How do social groups structure power relationships? How do they deal with outsiders and insiders? How do they go about distributing resources? These are questions that are just as relevant now as they were in an ancestral environment. Social cohesion may be one of our greatest assets as a species, but it also presents unique challenges in distributing the fruits of our labor. These problems arise so frequently that we have created a catch-all term for the unending challenge of prioritizing interests within the context of a social group: politics. Evolutionary political psychology aims to apply lessons from the evolutionary psychology to the special social interactions that humans term political behavior.

⁶² Heinrich, J. *The secret of our success: How culture is driving human nature, domesticating our species, and making us smarter*. Princeton University Press.

If politics is taken to be the prioritization of interests, then much of the political world revolves around expectations of entitlement. [⁶³] Individuals feel entitled to certain resources (food, status, aid) and outcomes (reproductive success, general wellbeing). Politics can be thought of as the arrangement of individual interests within a group that aims to solve “coordination problems.” [⁶⁴] Governing by rules presents its own adaptive advantages. Group cohesion based on norms of exchange reduces the costs of infighting and constant negation, providing a selection mechanism that led to a “sense of social regularity.” [⁶⁵] Our ability to set rules of cooperation in a social system provided two benefits in an ancestral environment. (1) It allowed for individuals to tackle challenges that they could not have overcome on their own, and (2) it prevents (or at least limits) infighting between individuals in a group.

The establishment of these rules has specific costs and benefits for particular individuals within the group. [⁶⁶] Politics is inherently linked with unequal outcomes, and selection pressures have led to the development of powerful cognitive tools that allow us to navigate the political relationships of group living. Throughout most of our human history, it would have been advantageous to down-regulate the entitlement of others and develop strategies to counteract down-regulation of one’s own interest. Politics revolves around the

⁶³ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. pp. 1098

⁶⁴ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. pp. 1085

⁶⁵ de Waal, F.B.M (1996) *Good Natured*. Cambridge, MA: Harvard University Press.

⁶⁶ DeScioli, P. and Kurzban, R. (2013) *A solution to the mysteries of morality*. *Psychological Bulletin*, 139(2), 477

currency of social information, and broadcasting one's interests or downplaying the interests of others has proven to be an evolutionarily advantageous strategy.

The psychological mechanisms for social interaction have been forged in the primordial EEA of small-scale, hunter-gather societies. The emergence of mass political societies is a relatively new development (and from an evolutionary perspective, an *extraordinarily* recent development), occurring in most areas of the world only in the last 500 years. [⁶⁷] This era of societal expansion is infinitesimally small compared to our evolutionary history. The primary Environments of Evolutionary Adaptedness for much of human social behavior would have been devoid of large-scale social structures, with most individuals living in small groups of 25-100 members. Because there are massive discrepancies (mismatches) between the politics of small-scale hunter-gather groups and the arena of mass politics in the modern world, the psychological mechanisms evolved to deal with political issues are not always well suited to large-scale society. Again we see how dysevolutionary mismatch might affect our interaction with the modern world. [⁶⁸] The psychological mechanisms by which we experience mass politics are those that have evolved from small-scale social relations in the context of our ancestral environments.

If humans have evolved a universal capacity for political behavior, then different societies across the cultural spectrum are expected to focus on solving

⁶⁷ Diamond, J.M.. (1998) *Guns, Germs, and Steel: A short history of everybody for the last 13,000 years*. New York, NY: Random House.

⁶⁸ Kelly, R.L. (1995) *The foraging spectrum: Diversity in hunter-gatherer lifeways*. Washington, DC: Smithsonian Institution Press.

the same sorts of typical collaborative problems. [⁶⁹] Across varying cultures, there appears to be a general consensus about what sorts of actions constitute criminal behavior. [⁷⁰] This study of the ubiquities of social deviance concluded that similarities in severity of punishment align with the fitness consequences that these crimes would have had in ancestral conditions. Although different political entities may face similar problems, it is obvious that they do not reach the same conclusions or operate according to the same rules. This is because psychological mechanisms are context dependent, and human behavior manifests itself in different ways under varying social and environmental constraints. Evolutionary political psychology can be thought of as a “rubber cage,” as humans seek novel solutions to prioritization problems through “improvisational intelligence.” [⁷¹]

Evolutionary perspectives allow for a broad conception of politics, as these adaptive mechanisms affect how we participate in a wide range of social institutions. The way that we partake in and manipulate our position in the workplace, family life, and even fraternities and sororities stems from mechanisms evolved for social interaction in small-scale groups. “[Evolutionary] psychology motivates solutions that worked under these circumstances. In other words, when modern individuals reason about political issues such as criminal justice, social welfare, and immigration, they reason about them using

⁶⁹ Boyer, P. and Peterson, M.B. (2012) *The naturalness of (many) social institutions: Evolved cognition as their foundation*. Journal of Institutional Economics, 8(01), 1-25.)

⁷⁰ Robinson, P.H., Kurzban, R. and Jones, O.D. (2007) *The origins of shared institutions of justice*. Vanderbilt Law Review, 60, 1633.

⁷¹ Boyer, P. and Peterson, M.B. (2012) *The naturalness of (many) social institutions: Evolved cognition as their foundation*. Journal of Institutional Economics, 8(01) 1-25.

psychological mechanisms designed to handle related adaptive problems such as counterexploitation, cheater-detection, and newcomers in the context of small-scale, ancestral group life.” [72]

Coalitions and mass politics

The impersonal nature of mass politics invites individuals to pass judgment on situations, individuals, and actions without substantial direct experience. This exacerbates the importance of social information as people base their opinions on information provided by others. In a small-scale society, people pass judgment relative to their personal relationships with a certain individual or group of individuals. In today’s mass society, our evolved mechanisms for social participation often operate through generalizations based on indirect information.

The psychological mechanisms for processing social information are highly dependent on the context in which the information is presented, and people process the opinions of media outlets, pundits, political elites, friends, and family based on questions of mutual interest. Do I trust this source of information? Do they affiliate with the same group as me? Are they keeping in mind my own interests? These are basic questions of communication, but their origins can be traced to the evolutionary context of small-group decision making.

⁷² Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. p. 1098

Evolutionary psychology does not stray from the norms of conventional political science or sociology in acknowledging the importance of context, or that social signaling matters. However, evolutionary psychology provides an additional level of analysis as to explain *why* these factors impact political behavior.

The tendency to seek political information from others is especially important in the context of *coalitions*. Coalitions are “individuals who in engage in repeated, delayed, and reciprocal exchanges of help and resources,” [73] and evolutionary theory would predict the evolution of mechanisms to direct resources to those perceived to be a part of one’s coalition network of exchange. Coalition building is a messy, complicated process of social cohesion and interest alignment. To solve this problem humans have developed sensitive social mechanisms to confront the adaptive challenges associated with building coalitions. Joining coalitions (of those that we are free to choose) requires a two part assessment: What is the relative strength of this coalition and how closely does it align with my own interests? Coalitions are evident at every level of political association. Political parties, interest groups, even states themselves can be said to be evidence of coalition building within mass politics. Membership in these cooperative networks has potent effects on the behavioral patterns of political actors.

Coalitions not only affect the way that people perceive who will benefit from a system of rules or the exchange of resources, but they also affect judgment on rules based solely on association with a group. Coalitions require

⁷³ Yamagishi, T. and Kiyonari, T. (2000) *The group as the container of generalized reciprocity*. Social Psychology Quarterly, 116-132.

the exchange of support, meaning that members are willing to support others in their interests because they expect that they will return the favor once *their* interests are at stake. Thus, a prominent phenomenon within coalitions is the reciprocated adoption of opinion in order to advance the interests of the coalition as a whole in the face of opposition.

This seems to extend to mass politics in obvious ways. There is never a perfect correlation between party position and public opinion, meaning that there must be a series of tradeoffs in advancing the interests of the party as a whole. Coalitional associations are held together by powerful psychological mechanisms that often merge identification with identity. Association with political parties has been shown to follow the same cognitive patterns of identification as other powerful coalitional associations, such as race. ^[74] The single most important determinant of voting preference is party identification. Also, people have been shown to vote according to party identification regardless of policy content. ^[75] Modern politics draw on psychological mechanisms for coalition building that create powerful group identities based on political membership and signals of commitment.

The evolutionary perspective asks profound questions about the nature of political parties. To what extent is public opinion a product of social commitments to a coalition as opposed to an analysis of policy position? How does this free up elite stakeholders and interest groups to control party agendas regardless of

⁷⁴ Pietraszewski, D., Curry, O.S. Peterson, M. B. Cosmides, L. and Tooby, R. (2015) *Constituents of politics cognition: race, party politics, and the alliance detection system*. *Cognition*, 140, 24-39.

⁷⁵ Miller, W. E. (1991) *Party identification, realignment, and party voting: Back to the basics*. *The American Political Science Review*, 557-568

consistency benefits? Is ideology a powerful enough force to hold political groups together without the psychological pressures of demonstrating coalition membership? These are standard questions in political science but they are enlightened by the discussion of coalitional politics in ways that would not be possible without the introduction of evolutionary psychology.

The Political Physiology Lab at the University of Nebraska-Lincoln has tried to elucidate the link between evolved psychology and political opinion by comparing the neurological reactions of liberals and conservatives. They did this by measuring physiological reactions such as galvanic skin response and eye gaze patterns in response to certain images. They recorded large discrepancies between the reaction patterns of liberals and conservatives. When shown pictures of positive images (bunnies, smiling children) and negative images (wounds, a person eating worms), conservatives showed a much greater and more focused reaction to the negative stimulus than liberals. They concluded that conservatives have a greater “negative bias,” meaning they are more likely to focus on negative stimulus. In their opinion, liberals and conservatives simply “experience and process different worlds.” Their studies suggest that conservatives tend to perceive the world as more threatening, and are less tolerant of “disgusting” images. “Bedrock political orientations just naturally mesh with a broader set of orientations, tastes, and preferences because they are all part of the same biologically rooted inner self,” write Hibbing et al. [⁷⁶]

⁷⁶ Hibbing, J., Smith, K, Alford, J. *Predisposed: Liberals, Conservatives, and the biology of Political Differences*. Routledge.

Quantitative studies have also demonstrated interesting parallels between political preference and physiological traits. One example comes from the relationship between bellicosity and self-interest in relation to male's physical strength. Stronger males have been shown to be more likely to support war as a means of solving international problems [⁷⁷] and they are also more likely to support policies that benefit their own group as opposed to others. [⁷⁸] There are also studies that suggest that physical strength is associated with a propensity to favor policies that align with economic interests. The inverse of this has also been shown to be true, in that those who favor these sorts of self-interested policies show a greater desire to gain strength. [⁷⁹] In evolutionary terms, males with a heightened sense of physical power display increased resource expectations and see themselves as more inclined to win a physical conflict.

One study demonstrating the link between biological needs and political psychology involves the relationship between hunger and feelings towards redistributive policy. [⁸⁰] This experiment concluded that when hungry, individuals are more likely to favor redistributive policies than when not. Under selection pressures, those in conditions of resources scarcity have a fitness incentive to seek out downwardly distributive social rules. Although this may seem intuitive,

⁷⁷ [Sell, A. Tooby, J. and Cosmides, L. (2009) Formidability and the logic of human anger. *Proceedings of the National Academy of Sciences, USA*, 106(35), 15073-15078]

⁷⁸ Price, M.E., Kang, J., Dunn, J., Hopkins, S. (2011) *Muscularity and attractiveness as predictors of human egalitarianism. Personality and Individual Differences*, 50(5), 636-640

⁷⁹ Swami, V., Neofytou, R. V., Jablonska, J., Thirlwell, H. Taylor, D. McCreary, D.R. (2013) *Social dominance orientation predicts drive for muscularity among British Men. Body Image*. 10(4), 653-656

⁸⁰ Aarøe, L. and Peterson, M. B. (2013) *Hunger games: Fluctuations in blood glucose levels influences support for social welfare in the face of deservingness cues. The Journal of Politics*, 76(3), 684-697

the correlation of such a basic biological phenomena with political preference makes one wonder about the other potential associations between physiological states and political behavior. These sorts of investigations are outside the bounds of conventional political science, and require a deeper understanding of the evolutionary perspective.

One reason why this field of biopolitics may be so overlooked is because conventional social science emphasizes environmental context as the most pressing factor in building political opinion. This may very well be true, but environmental importance does not negate the impact of evolved effects. Political judgments arise through a complex mix of environmental stimulus and life experiences, but these sorts of decisions have also been shown to be correlated with evolved physical systems in our physiology. Alford and Hibbing argue that shared environment may be not as potent a factor as once thought in determining political preferences. [81] One aspect of their study compared the political differences between identical and fraternal twins. The identical twins, being the most genetically similar, were shown to have a much higher degree of overlap in political opinion when controlling for environmental pressures. Their study concluded that up to 40% of the variability in political ideology is linked to genetics, and that “we are in a situation where most of our theories of personality development need rewriting.” [82]

⁸¹ Hibbing, J., Smith, K, Alford, J. *Predisposed: Liberals, Conservatives, and the biology of Political Differences*. Routledge.

⁸² Hibbing, J., Smith, K, Alford, J. *Predisposed: Liberals, Conservatives, and the biology of Political Differences*. Routledge.

Political scientists Green, Palmquist and Schickler argue that citizens ask themselves two questions when deciding party affiliation. “What kinds of social groups come to mind as I think about Democrats, Republicans, and Independents? [And] which assemblage of groups (if any) best describes me?” This leads us to believe that the basis of political behavior is fundamentally social. [⁸³] In a small-scale group scenario, perceptions of social ramifications would have been fundamental in the prioritization of interests. It makes evolutionary sense for modern politics to be profoundly personal, as people look to invest themselves in political coalitions seeking the same sorts of advantages that led to the evolution of social cohesion.

“The mental representations underlying mass political judgments are (a) less contained by shared direct experiences and (b) rely heavily on internally generated representations” [⁸⁴] This inflates the possibility of conflict, as political skirmishes more commonly occur due to abstraction and stereotyping, rather than concrete cases. [⁸⁵] Coalitional conflict can erupt in violence, and evidence suggests that humans have a tendency to engage in violent coalitional action. [⁸⁶] However, coalitional status is just as much an information game, as hierarchies are often built off of the perception of group strength. The importance of perception has selected for sensitive psychological processes to assess status

⁸³ Green, D. P., Palmquist, B., & Eric, S. *Partisan hearts and minds: Political parties and the social identities of voters*. Yale Isps Series. New Haven: Yale University Press, 2002.

⁸⁴ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. . p. 1098

⁸⁵ Peffley, M., Hurwitz, J. & Sniderman, P. M. (1997) *Racial stereotypes and white's political views of blacks in the context of welfare and crime*. *American Journal of Political Science*, 56(1), 1-16.

⁸⁶ Peterson, D. & Wrangham R. (1997) *Demonic Males: Apes and the origins of human violence*. Mariner Books.

and coalitional strength. “For the evolutionary political psychologist, the symbols, parades, and debates that surround politics are not merely “theatre” or “cheap talk,” as a rational choice theorist would argue. These are the very strategies through which political interests are pursued, they are designed to tap into human psychology and mobilize support or counter the mobilization of support.”

[⁸⁷]

One theater of war in modern politics is the campaign trail. Negative campaigns are efforts to destroy the integrity or effectiveness of oppositional leadership, thereby causing supporters to question their coalitional loyalty. What is especially interesting is that some research suggests that humans have outsmarted their own coalitional attack strategies by developing the ability to distinguish between self-interested informational attacks and worthy criticism. Negative campaigns have a tendency to backfire because they are recognized as a self-interested attack seeking to downgrade the status of a competing individual. These attack often fail as supporters rally to the side of their coalition in a display of solidarity. [⁸⁸]

Status, reputation, and conditional cooperation

Over the course of human history, higher status has been associated with more cooperative partners, more friends, more reproductive partners, and more

⁸⁷ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. . p. 1087

⁸⁸ Ansolabehere, S. & Iyengar, S. (1995) *Going negative: How attack ads shrink and polarize the electorate*. New England: Oxford University Press.

resources. Social status can be thought of as the currency of the bio-social world, and actors competing for status interact in a zero-sum game. If one organism has more, the other has less. The primary mechanism by which humans compete for status is through forming coalitions. This tendency to find strength through numbers is a driving selection mechanism for the development of social groups and humans have developed complex psychological mechanisms in order to navigate conditions of social cohesion and status maintenance. [⁸⁹]

A classical interpretation of the prisoner's dilemma prescribes taking the selfish position every time, as the benefits of defection on aggregate outweigh the positives of cooperation. In the context of our ancestral environment, defecting from social cooperation in the name of self-interest also came with significant advantages. Stealing resources or defecting on cooperative agreements provided an opportunity to capitalize on the gullibility of others to enter into vulnerable social arrangements. If there was such a great advantage to be selfish in small-scale social arrangements, then why has cooperation evolved at all? The key to the evolution of cooperative behavior is freedom of choice. Members of a small-scale society had the opportunity to *choose* whom they would cooperate with, and those successful partnerships would have enjoyed a significant advantage over those that went about life on their own.

The ability of our ancestors to choose cooperative partners required the development of complex psychological mechanisms for calculating who could be

⁸⁹ Tooby, J. and Cosmides, L. (2010) *Groups in mind: The coalitional roots of war and morality*. In H. Høgh Olsen (Ed.) New York, NY Palgrave Macmillan.

trusted. [⁹⁰] [⁹¹] One way to make this sort of judgment was to pick on the social cues of who is a good cooperator and who is not. Cooperating with others sends a signal to those around you that you are a good cooperator and thus someone worthy of sharing resources with. [⁹²] There were no political institutions to punish defection from cooperative arrangements in the EEA, but the competitive advantage that results from working together provides an incentive to maintain a reputation for cooperation.

Reputation is invariably linked with status and cooperative benefits, and this selected for particularly powerful motivations to preserve one's reputation. One example comes from an experiment conducted by Nolan, Schulta, and Cialdini. Flyers were posted to houses urging people to use fans instead of air conditioners, but different reasons were given to motivate people to make the change. One group was told that the switch would save them \$54 per month on electricity. Another flyer stated that they would prevent the release of 100 kilos of greenhouse gas. Yet another group was told that 77% of their neighbors were making the change. In evaluating the electricity meters of those involved in the study, the first two statements resulted in no change, while framing the action as "community choice" resulted in a 10% decrease in electricity consumption [⁹³]

⁹⁰ Aktipis, C.A. (2004) *Know when to walk away: Contingent movement and the evolution of cooperation*. Journal of Theoretical Biology, 231 (2), 249-260.

⁹¹ Kaplan, H. S. and Gurven, M. (2005) *The natural history of human food sharing and cooperation: A review and a new multi-individual approach to the negotiation of norms*. In H. Hintis (Ed.), *Moral sentiments and material interests: The foundations of cooperation in economic life*. (Vol 6, pp. 75 -113). Cambridge, MA: MIT press.

⁹² Roberts, G. (1998) Competitive altruism: from reciprocity to the handicap principle. Proceedings of the Royal Society B: Biological Sciences, 265, 427-431.

⁹³ Nolan, J. M. Schulta, P. W., Cialdini, R. B., Goldstein, N.J. & Griskevicius, V. (2008) *Normative and social influence is underdetected*. Personality and Social Psychology Bulletin, 34(7), 913-923.

Another example of this phenomena comes from the Behavioural Insight team, a group charged with analyzing the effectiveness of different messages in persuading people to pay taxes on time. They sent letters to over 140,000 people in the United Kingdom urging them to pay their taxes. One group of recipients received standard reminders of their filing deadline. Others received messages that stated that 9 out of 10 Brits paid their taxes on time. A subset of these messages made reference to high percentages of regional and local rates of payment. The results pointed to a 15% increase in tax payment from the letters focused on social motivation over the standard control group. It is estimated that this sort of cooperation centered strategy led to the on-time payment of over \$160,000 million during the course of the study. [⁹⁴]

In another study, individuals staying in a hotel were asked to reuse towels in an effort to control energy costs. One group of guests received a note asking to save their towel out of environmental concern. Another group received a note with the same environmental message *and* a note that stated that 75% of others guests had joined them in saving towels. The amount of people who reused towels was 25% higher in the group primed with the evidence of a social norm.

What this suggests, is that human beings are primarily *conditional* cooperators, in that we base our interactions with others on how they act in return. [⁹⁵] Thus, in forming policy we must understand how individuals *perceive* the actions of others. Humans are apt to act on the basis of reputation, and social

⁹⁴ Behavioural Insights Team (2012) *Applying behavioural insights to reduce fraud, error and debt*. London, England: Cabinet Office.

⁹⁵ Trivers (1971) *Evolution of reciprocal altruism*. Quarterly Review of Biology, 46, 35-57.

norms often affect behavior. In terms of policy formation, if people perceive others as cooperative, they are more likely to follow suit. This seems like an intuitive function, but placing it within the context of our evolutionary psychology allows us to see the true power of this type of calculation. This leads us to believe that people are not arbitrarily inconsistent in their choice to cooperate, rather they choose whether or not to cooperate based on their perception of social conditions.

Understanding Irrationality

The utter complexity of human behavior owes much to the paradoxical nature of our decisions. People act in ways contrary to their rational self-interest. Some spend excessively on superfluous things only to find themselves penniless after retirement. Others overeat and refrain from exercise only to find themselves overweight or diabetic. The same people who have an obvious capacity for brilliance can make unbelievably dumb decisions, and those that seem incredibly generous can at times be cruelly selfish. Despite these apparent faults, it would be a crude generalization to claim that people are weak of will or ignorant of their best interests. People can display immense drive and calculated strategy by pursuing goals in their careers, athletics, and everyday life. How can we account for these inconsistencies? What factors does a conventional social science approach point to in explaining the irrationality and apparent weaknesses of human behavior? Does evolutionary psychology provide a better pathway for

explaining the paradoxical tendencies of humans to be brilliant yet stupid, lazy yet resolute?

The social sciences strive to tap into the patterns that govern these types of behavioral decisions. Understanding the conditions in which intelligence trumps ignorance or generosity overcomes selfishness would allow us to understand what types of social policies are likely to produce socially beneficial behavior. A classical economics approach assumes humans to be rational, self-interested actors that go about their lives making decisions based on a calculative assessment of economic, social, and political options. This model blames policy shortcomings on market failures or institutional inadequacies. However, this standard conception of *homo economics* is oversimplified and falls short of explaining the apparent paradoxes of human behavior. A blind adherence to the power of market forces to shape rational action leads to naïve policy conclusions that neglect the complex motivations behind human decision making.

Behavioral economics deviates from the classical approach by recognizing the inconsistent logic prevalent in human behavior. This approach points to irrationality or weakness of will in determining why people fail to make the best decisions. This appears to be a step closer to the realities of human behavior, but behavioral economics does explain *why* human beings act in the ways they do. Evolutionary theory aligns with behavioral economics in concluding that human beings are far from perfectly rational, but it does not assume that humanity is

generally dumb or weak of will. It is not enough to claim that humans are simply rational or irrational, generous or selfish, intelligent or stupid. It may seem irrational to not save money for retirement, or a weakness of will to overeat high-calorie foods, but simply blaming these irrational behaviors on human weakness does nothing to provide a path to a solution. An evolutionary approach supplies an answer to both *how* and *why* human behavior deviates from a rational approach. This more sophisticated level of analysis allows us to use middle-level evolutionary theories in *predicting* the successes and failures of human action by scrutinizing the interaction between the evolved tendencies and the socio-political environment.

The evolutionary perspective provides us with the tools to understand the shortcomings of human rationality through understanding conditional restraints and cognitive propensities. “[Humans] are *predictably* intelligent and *predictably* stupid, *predictably* altruistic and *predictably* selfish. Their achievements and failures follow certain patterns, which are specific to humans. Uncovering the logic behind these patterns can enable us to design better policies, policies that account for the built-in constraints of human nature (shortsightedness, greed, cognitive biases), while using its core features (generosity, endurance, natural social experience) as levers to achieve goals that cannot be achieved using standard approaches” [⁹⁶] In the evolutionary approach, the logic of human behavior lies in the cognitive mechanisms which produce it. [⁹⁷] Expanding on our

⁹⁶ Baumard, N. (2016) *Evolutionary Psychology and Public Policy*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. p. 1123

⁹⁷ Barkow, J., Cosmides, L., & Tooby, J., (1992) *The adapted mind: Evolutionary psychology and the generation of culture*. Oxford University Press.

knowledge of evolutionary constraints can allow us to build policy with these tendencies in mind.

Human beings can be incredibly efficient when a task is in line with adapted mechanisms and total dunces when asked to go outside our evolved proclivities. We effortlessly store an enormous memory bank of facial appearances, while we often have trouble remembering a four-digit pin number. Increasing the distance between a social goal and the adaptive mechanisms that have shaped human cognition only increases the difficulty of the task at hand. It is not as though we are incapable of tasks that may be at odds with evolutionary mechanisms, we are just not suited to perform them with relative ease. For the vast majority of human existence, there would have been no reason to focus on long-term financial security, or refrain from overeating in order to prevent a chronic health condition. Evolutionary pressures to develop mechanisms to cope with the long-term challenges of modern life were simply in short supply in an ancestral environment.

Evolution not only tells us something about the goals that people tend to seek out. Evolutionary theory would suggest that ambitions align with objectives that would have led to beneficial outcomes in an ancestral environment. These sorts of goals would include raising a child, demonstrating one's worth to the community, or increasing status. These sorts of tendencies have powerful effects on the way that people operate within a modern economic and political system.

An interesting proposition that stems from this assessment claims that money may not necessarily be as powerful a motivation as the rational choice model assumes, because the abstract conception of saving for retirement or paying the electricity bill is far removed from the problems that the adapted mind has been designed to solve. Abstract systems linked to status (i.e. money) simply did not exist in the context of small-scale hunter gatherer groups. The most effective way to save for the future would not have been an economic calculation, but investment in a strong coalition of friends and family that would help in times of need. ^[98] Humans have developed mechanisms to store resources “in the body and minds of other people, in the form of memory of my generosity they feel obliged to repay when fortunes are reversed” ^[99] Changes in social climates may increase or decrease the motivation to seek money as a source of status.

Applying this lens to the administrative tasks required by complex systems of norms and laws shows that these convoluted and detailed tasks are often out of touch with evolutionary motivations. It may not be the case that people are simply too lazy or too dumb to figure out an administrative process; these tasks merely diverge from those motivated by our evolved mental mechanisms. In a study regarding the Free Application for Federal Student Aid (FAFSA), the percentage of completed applications substantially increased when the

⁹⁸ Kaplan, H. S., Hooper, P. L., & Gurven, M. (2009) *The evolutionary and ecological roots of human social organization*. Philosophical Transactions of the Royal Society B: Biological Sciences, 364(1533), 3289-3299.

⁹⁹ Pinker, S. (1997) *How the Mind Works*. W. W. Norton & Company, pp.555

paperwork was prepopulated. [¹⁰⁰] Conventional wisdom would suggest that students have a clear incentive to fill out this paperwork despite any sort of assistance. But administrative processes are so detached from any sort of evolutionary mechanisms for action that they are often left uncompleted. Evolutionary theory could allow policy bureaucratic systems to foresee barriers to these administrative tasks required by government structures.

Moving beyond a blank slate conception of social and political actors shows us how naïve it may be to sit around and wait for people to become better citizens. Simply complaining about a lack of participation will do nothing to bring administrative task in line with the forces that motivate action. Yes, people are obliged to take responsibility for themselves and their wellbeing, but realizing the extent to which certain processes of modern socio-political systems fall out of line with psychological triggers allows us to craft simple changes aimed at improving citizenship and social participation. “Traditional public policies assume that people are rational and that the only reason they make bad decisions is that they are ill-informed or not incentivized enough” [¹⁰¹] Evolutionary psychology allows for a more complete calculation of the motivational forces that influence human behavior within social and political arrangements.

¹⁰⁰ Bettinger, E. P., Long, B.T., Oreopoulos, P., Sanbonmatsu, L. (2012) *The role of application assistance and information in college decisions: results from H&R Block FAFSA experiment*. The Quarterly Journal of Economics, 127(3), 1205-1242.

¹⁰¹ Baumard, N. (2016) *Evolutionary Psychology and Public Policy*. In Buss, D. (Ed.) The Handbook of Evolutionary Psychology. Vol. 2. John Wiley and Sons. p. 1132

Section 3: Shining a Light on Inequality

Inequality and Evolutionary Psychology

Armed with a new perspective on humanity's socio-political identity, we now move to applying an evolutionary perspective to pressing policy issue: inequality. Can we use evolutionary psychology to *predict* the behavioral patterns of those facing inequality? What can evolutionary theory tell us about our response to inequality as dictated by altruism, social cohesion, concern for status and resources, intrasexual and intersexual competition, etc.?

Overwhelming evidence suggests that income inequality is on the rise in the United States, hitting levels not seen since the early 20th century. The top 1% of families take in 22.5 % of all pretax income while the bottom 90% are receiving below 50% for the first time in the history of the United States. [¹⁰²] Political inequality is also a pressing issue for the legitimacy and efficacy of American democracy. Policy outcomes have been shown to respond to the political opinions of the rich while ignoring the preferences of the poor. [¹⁰³] Social stratification and histories inequalities have created unequal channels for economic and political participation, while segregated demographics, educational disparities, and unequal application of law institutionalize the marginalization of individuals based on gender, ethnicity, race, religion, age, and income. By

¹⁰² Desilver, Drew. (2013) *U.S. Income Inequality, on Rise for Decades, Is Now Highest since 1928*. Pew Research Center RSS. N.p., 05 Dec. Web. 12 Apr. 2016.

¹⁰³ Gilens, M., (2014) *Affluence and Influence: Economic inequality and political power in America*. Cambridge, MA. Princeton University Press.

redefining the link between inequality and decision making, evolutionary psychology shows that inequality is more than a threat to our democracy; inequality detracts from our basic desires to seek safety, community, and social worth while contributing to a vicious cycle of action patterns that serve to keep those of low-economic status trapped by societal constraints. *Life history theory* proves to be a productive method of analysis in understanding the insidious relationship between inequality and our evolved social functions.

Life History Theory

A traditional choice model might predict logical decisions like investing in education, saving money, and waiting to start a family down the road as rational means of escaping poverty. However, evidence shows that people in lower socioeconomic positions tend to save less, pursue fewer educational opportunities, have children at a younger age, and take more risks. [¹⁰⁴] What can explain this widespread deviation from self-interest?

Life history theory is a useful tool to examine the link between inequality and behavior. This theory is rooted in general evolutionary theory and based on the premise that organisms allocate resources over a lifespan in order to increase fitness as determined by the various constraints placed on them by the environment. Questions of reproductive timing, risk taking, and life strategy are central to the fitness of all organisms and evolution has provided numerous

¹⁰⁴ Nettle, D. (2010a) *Dying young and living fast: Variation in life history across English neighborhoods*. Behavioral Ecology, 21(2), 387-395.

psychological mechanisms to deal with these fundamental questions. [¹⁰⁵] [¹⁰⁶] In this model, there are trade-offs associated with different life strategies and decision making is marked on a slow-to-fast continuum. Fast strategies involve taking increased risks in hopes of short-term gain, often in a response to harsh environments because these kinds of contexts signal a greater risk of early mortality. Organisms who perceive their surroundings to be hostile could increase their fitness by reproducing quickly and capitalizing on short-term opportunities. On the opposite side of the spectrum, individuals who have reason to think that conditions will get better in the future are more likely to choose slow strategies that are more risk averse. [¹⁰⁷] These individuals perceive their lives as trending upward, and the possibility of a better future incentivizes them to commit themselves to a longer-term strategy for future fitness.

To assume that those occupying a low-socioeconomic position make poor decisions because they are dumb, lazy or incapable is to mischaracterize the influence of environmental impact. People react with strong context-sensitive feelings towards their observed social role and perceived likelihood of improvement, and this interacts with evolved motivational mechanisms in consequential ways. It is not as if individuals consciously choose between fast or slow strategies, rather evolution has selected for underlying response mechanisms that motivate certain behavioral patterns in relation to relative status, current environment, and prediction of future conditions.

¹⁰⁵ Roff, D. A. (2002) *Life history evolution*. (Vol. 7). Sunderland, MA: Sinauer.

¹⁰⁶ Streans, S. C. (1992) *The evolution of life histories*. New York, NY: Oxford University Press.

¹⁰⁷ Chisholm, J. S. Ellison, P. T., Evans, J., Lee, P. C., Lieberman, L. S., Pavlik, Z., Worthman, C. M. (1993) *Death, hope, and sex: Life-history theory and the development of reproductive strategies. (and comments and reply)*. *Current Anthropology*, 34(1), 1-24.

Our evolutionary tendency to calculate tradeoffs based on environmental inputs may lead individuals to react to negative stimuli in a harsh socioeconomic environment. Cross-cultural studies have shown that in environments that are riskier, have fewer resources, and have a higher level of mortality people are prone to have children earlier, make impulsive decisions, and ultimately take more risks. [¹⁰⁸] [¹⁰⁹] Daly and Wilson provide powerful empirical data to support the correlation between inequality and social ills. In studying the relationship between homicide rates and inequality, they found that the Gini coefficient and homicide rates are positively correlated across US states, Canadian provinces, and all OECD countries. [¹¹⁰]

People tend to base their economic success on comparisons to others, not on absolute wealth. In one experiment, participants were given the choice between living in society A or society B. In society A, your current yearly income is \$50,000 while the yearly income of others is \$25,000. In situation B, your yearly income is \$100,000 while the yearly income of others is \$200,000. The majority of people said that they would prefer to live in society A despite the difference in absolute wealth. This demonstrates the importance of intrasocietal comparison as people base their status on comparisons to those around them.

¹⁰⁸ Griskevicius, V. Ackerman, J.M., Cantú, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., and Tybur, J. M. (2013) *When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environments*. *Psychological Science*, 24(2), 197-205.

¹⁰⁹ Nettle, D. (2010a) Dying young and living fast: Variation in life history across English neighborhoods. *Behavioral Ecology*, 21(2), 387-395.

¹¹⁰ Daly, M. and Wilson, M. *Life expectancy, economic inequality, homicide, and reproductive timing in Chicago neighborhoods*. *BMJ*. 1997 Apr 26; 314(7089): 1271–1274.

Inequality also relates back to the previous discussion of stress and obesity. Social inequality contributes to physical stress, leading the body to assume that resources are scarce. Stemming from the conditions of an evolutionary environment, psychological mechanisms to combat resource scarcity trigger an increase in appetite and amplified fat storage in the abdomen in an effort to hoard caloric resources. Empirical evidence is consistent with this claim, showing that rates of obesity are positively correlated with inequality. [¹¹¹]

Harsh environments may have incentivized risk in the absence of long-term incentives. Violence and early reproduction may have proven to be effective strategies for coping with harsh conditions and social inequality in ancestral environments. Although there is a certain level of risk involved in being more violent or having children at an earlier age, on a large enough scale these decisions would have proved beneficial to those at the bottom of the social hierarchy. What traditional theories may see as irrational behavior actually seems rational from an evolutionary perspective.

Despite this, the naturalistic fallacy insists that an evolutionary origin does not equate to justification of a behavior. In addition, mismatches between evolved response tendencies and current conditions may make our predisposed tendencies maladaptive to modern society. Clearly, “faster” strategies have negative effects on low-socioeconomic communities. In terms of policy development, this stark analysis shows that a primary facet of dealing with inequality includes increasing opportunity and giving people a reason to hope for

¹¹¹ Neese, R. M., & Young, E. A. (2000) *Evolutionary origins and functions of the stress response*. Encyclopedia of Stress, 2, 387-395.

the future. Social policy may need to go beyond the provision of basic needs in order to motivate beneficial behaviors. These may seem like an idealistic and abstract goal, but they can be traced back to the theoretical and empirical framework of evolutionary theory and life history analysis.

Welfare Policy and Evolved Influences

Social exchange is dominated by reciprocity, and selection pressures have allowed for the development of keen cheater-detection systems that supplement our capacity to judge whether or not someone should be considered trustworthy. These mechanisms are far from perfect, but their gradual evolution provided a fitness boost on a collective level. Our definition of human beings as *conditional* cooperators conveys the importance of perceptions in guiding social behavior. If people perceive others to be reciprocal and honest cooperators, they are much more likely to cooperate than if they perceive other individuals as being lazy, unappreciative, or a burden on those that are contributing resources to a particular social arrangement. The predictive assessment is rather simple; if others are *perceived* as uncooperative, then people are less likely to cooperate themselves.

The psychological mechanisms of cheater detection have been shown to be a powerful force in “shaping opinions about the most sophisticated modern

group-wide exchange system: the welfare state.” [¹¹²] Opinions on welfare seem to be associated with judgments of the reciprocity of these exchanges. Simply put, people are more likely to support a welfare system if (1) they are likely to gain from it or (2) they see the value in distributing resources and acknowledge that this exchange will prove to be beneficial in some way.

At its most basic level, the debate over welfare policy revolves around responding to requests for help. This triggers our cheater-detection stimulus and altruistic motivations. [¹¹³] What is most interesting in the case of welfare policy, is that most individuals agree with the basic concept of helping those that in a lower economic position. Opinion polls show that both liberals and conservatives from different political systems are equally supportive of providing assistance to *reciprocators* and equally likely to reject welfare to *cheaters* based on their perception of the recipient. [¹¹⁴] However, conservatives and liberals differ in the decoupled stereotypes they hold about the recipients of welfare policy. [¹¹⁵] This variation in the perceived conditions of reciprocation influenced support or opposition to welfare policy.

Americans and Europeans seem to have divergent views on welfare policy, with those in the US expressing less support for downwardly distributed

¹¹² Peterson, M. B. (2012) *Social welfare as small scale help: Evolutionary psychology and the deservingness heuristic*. American Journal of Political Science

¹¹³ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) The Handbook of Evolutionary Psychology. Vol. 2. John Wiley and Sons. . p. 1098

¹¹⁴ Peterson, M. B., Slothuus, R. Stubager, R. & Togeby, L. (2011) *Deservingness versus values in public opinion on welfare: The automatacity of the deservingness heuristic*. European Journal of Political Research, 50(1), 24-52

¹¹⁵ Aarøe, L. and Peterson, M. B., (2014) *Crowding out culture: Scandinavians and Americans agree on social welfare in the face of deservingness cues*. The Journal of Politics, 76(3), 684-697

initiatives. One cross-cultural study concluded that the difference in welfare opinion does not occur at a moral level, but in the perceptions of the poor and the trust extended to those in a lower socioeconomic class. Europeans and Americans seem to hold similar attitudes towards the *importance* of welfare policy, but they have profoundly different attitudes towards the cooperative capacity of the poor. In the study, 60% of Europeans believed that the poor are trapped in poverty, while only 29% of American expressed this belief. 54% of Europeans think that luck determines incomes as compared to 30% of Americans. Additionally, 26% of Europeans believe that the poor are lazy as opposed to 60% of Americans. It is also important to note that the level of social mobility is relatively equal in both American and Europe.

Psychological tools for judging reciprocity may be mismatched to the abstract generalizations that characterize mass politics today. The process by which we perceive trustworthiness through mass media channels and large-scale politics is fundamentally different than in ancestral conditions. Calculations of fairness are very different in a modern context, and this has profound consequences for politically malleable structures for resource exchange. Racism, xenophobia and socio-economic stereotyping may very well stem from a proclivity to be weary of trusting outsiders, and these in-group/out-group perceptions could be amplified by political messages aimed at building coalitional strength. There is some evidence that demographic variation also influences welfare opinion. "Differences in size and racial heterogeneity across countries are major causes of differences in the size of welfare states, with more

heterogeneous countries having smaller welfare states. [¹¹⁶] The limitations of this project only allow me to focus on a fraction of the inequality debate, but this demonstrates the permeating capacity of evolutionary psychology to shed light on issues of inequality and power imbalances.

Status-centered development?

It is difficult to overestimate the importance of social status in influencing human behavior. As a primary determinant of reproductive success and resource acquisition, status is innately tied to a sense of purpose and belonging. Social exclusion activates the same neural networks as physical pain. [¹¹⁷] This sort of coalitional rejection signals social scarcity, a potent environmental risk in an ancestral environment. A lack of social support increases stress [¹¹⁸] and numerous studies have shown that more egalitarian societies are ‘happier’ places to live. [¹¹⁹] The most powerful predictor of many social ills may not be absolute level of income, but social inequality. [¹²⁰]

Studies have shown that nations with low levels of trusts tend to have lower GDPs [¹²¹] and people tend to help others less in when trust is low. [¹²²]

¹¹⁶ Alesina, A, and Glaeser,, E.L. (2004) *Fighting poverty in the US and Europe: A world of difference* (Vol. 26). Oxford, England: Oxford University Press.

¹¹⁷ Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003) *Does rejection hurt? An fMRI study of social exclusion*. *Science*, 302(5643), 290-292.

¹¹⁸ Diener, E. & Selgman, M. E. P. (2004) *Beyond Money. Psychological Science in the Public Interest*, 5(1), 1-31.

¹¹⁹ Frank, R. H. (2007) *Falling behind: how rising inequality harms the middle class* (Vol. 4) Berkeley: University of California Press.

¹²⁰ Wilkinson R., & Pickett, K. (2008) *The spirit level*. New York, NY: Allen Lane/Penguin Press.

¹²¹ Fukuyame,, F. (1995) *Trust: The social virtues and the creation of prosperity*. New York, NY: Free Press.

Income level is conventionally seen as the engine of well-being, and increasing GDP is championed as a value-neutral approach to bettering people's lives. The free market allows people to determine how to appropriate resources according to their own interests. However, touting economic prosperity as a panacea to social problems is deeply out of touch with the realities of the evolved mind.

Money is a modern construct, and holds little inherent value beyond its potential to increase status and acquire resources. Social relationships likely have a greater impact on happiness than economic position. One study concluded that a one-third drop in income reduces happiness by 2 points, while being widowed, divorced, or separated reduces happiness by 4, 5, and 8 points, respectively. [¹²³]

Money cannot buy friendship, children, or security, and in many cases, a high salary comes at the expense of these ultimate ends. [¹²⁴] What is most likely to bring about happiness is the fulfillment of goals that were important in an evolutionary context, [¹²⁵] and placing money in front of community, family, and social worth inhibits a more expansive notion of wellbeing. "The main argument typically presented in favor of equality is based on considerations of social justice. The evolutionary and psychological approach suggests that there is

¹²² Willinger, M., Keser, C., Lohmann, C., & Usunier, J. (2003). *A comparison of trust and reciprocity between France and Germany: Experimental investigation based on the investment game*. *Journal of Economic Psychology*, 24(4), 447-466

¹²³ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. p. 1098

¹²⁴ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. p. 1098

¹²⁵ Thagard, P. (2012) *The brain and the meaning of life*. Princeton University Press..

another, more neutral argument in favor of equality, which is that most people, rich and poor, would be better off in a more equal and less stressful society.” [126]

Unequal power dynamics isolate, frustrate, and ignore the needs of particular individuals, leaving them without a role in society. The evolutionary perspective gives credence to this subjective experience by taking into account the effect of social inequality on evolved psychological mechanisms.

A lack of role models in poor, often minority, neighborhoods may create a dearth of social signalers. Without a tangible vision of what life can be, what hope is there in thinking that your situation can change? Social inequality rips away at the very fabric of a democratic society by destroying social cohesion. Persistent and institutionalized social discrepancies feed into an insidious feedback loop as social exclusion operates within the context of our evolved mental mechanisms. Inequality is a cause, not just a symptom of inequality. [127] Evolutionary psychology presents a new argument for intuitive change, one that can be used by social scientists, community builders, and anyone interested in living in a happier, healthier world.

¹²⁶ Baumard, N. (2016) *Evolutionary Psychology and Public Policy*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons. pp. 1139

¹²⁷ Ferdinand Mount (2012) *The New Fear: Or a Very Few British Oligarchy*. Simon and Schuster.

Conclusion: Applications and Constraints

“Classical economics, Marxism, psychoanalysis, learning theory, instinct theory, cognitive theory, structuralism, artificial intelligence, neural network modeling, chaos and complexity theory, sociobiology – not a single one false in its essence, but each one false in its ambitions and especially in its condemnation of the others. A good textbook of human behavioral biology, which we will not have for another fifty years, will look not like Euclid’s geometry – a magnificent edifice of proven propositions derived from a set of simple assumptions – but more like a textbook of physiology or geology, each solution grounded in a separate body of facts and approached with a group of different theories, all the solutions connected in a great, complex web.”

- Melvin Konner,
The Tangled Wing (2003)

The pursuit of knowledge is divided into several separate, yet interrelated, methods of seeking truth. Descriptive statements seek to explain “*what is*” in terms of non-valued, empirical facts. Causal analyses in evolutionary psychology likewise attempt to elucidate mechanisms, formal characteristics, developmental background, deep origins, and functions, again in a value-neutral manner. Normative arguments, in contrast, are value-oriented, as they aim to describe “*what ought to be*.” Distinguishing between the descriptive, causal, and normative roles of evolutionary psychology in understanding social and political behavior, and in shaping political policies, will allow for an epistemological framework that provides greater clarity as to the usefulness of applying an evolutionary perspective to political science.

My conclusions will articulate a preliminary structure for understanding the practicality and limitations of using evolutionary theory to conceptualize social behavior and inform policy conclusions. This framework is far from perfect, but it serves as a basic demonstration of a much-needed philosophical debate. The scope of this thesis does not serve as an adequate platform for articulating these ideas with the precision, nuance, and completeness that they deserve. But I have done my best to describe a personal impression of how evolutionary ideas should be used in the social sciences. This is itself a normative pursuit, and these ideas stem very much from my personal beliefs on the matter. The conclusions of this project are in many ways an armistice in my struggle to supplement conventional social science with the conceptual tools of evolutionary psychology. The following section will look to demonstrate the descriptive value, prescriptive utility, and normative limits of applying evolutionary psychology to social behavior.

Descriptive value and causal understanding

What I have tried to demonstrate in the preceding sections is that evolutionary approaches, in general, and evolutionary psychology in particular, provide a unique *descriptive value and casual understanding* in their appraisal of human behavior. Evolutionary approaches contain the primary virtues of scientific exploration: they explains observed facts; they allow for new predictions; and

they provide “guidance to important domains of scientific inquiry.” [¹²⁸] The value of the evolutionary perspective in explaining social and political behavior is based on three key characteristics of this approach: fertility, verifiability, and predictiveness.

The “fertility” value of evolutionary psychology refers to the countless opportunities for applying this perspective to the study of human behavior. Evolutionary theory is often able to explain more with less, complement other levels of analysis, and offer new conceptions of our social identity that affect the study of social phenomena at all levels of analysis. Our understandings of party affiliation, media influence, and ideological preferences can all be informed by evolutionary psychology. Evolutionary approaches illuminate the psychological mechanisms that influence behavior on an individual level, while allowing us to see how these mechanisms have been shaped over our deep history by the context of small-scale social groups. Evolutionary psychology enriches our understanding of how culture affects behavior, but it also serves to enlighten the origins of culture itself. It provides insight into how political institutions have become embedded in our world, and describes the mechanisms by which we perceive political life. The evolutionary perspective helps us understand self-interest as well as generosity, and social cooperation as well as coalitional violence. It may help to explain racism and xenophobia while simultaneously informing our knowledge of how to bridge cooperative divides.

¹²⁸ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.p.35

In relation to inequality, evolutionary psychology helps us understand the root patterns of social exclusion that occur as a result of widespread inequality. This approach finds commonality through recognizing the existence of “human nature.” Critics of evolutionary psychology may argue that the discipline presents a cold, mechanical picture of what it means to be human. On the contrary, recognizing the ubiquities of human nature creates a more complete understanding of the experiences that we share in common. It builds bridges across needs, desires, and emotions that is not possible through a blank slate conception of the mind.

The conclusions of evolutionary psychology are verifiable (testable), in the sense that they can be tested (subject to limitations in methodology and quality of evidence, as is true in any science) against empirical observations. As previously discussed, evolutionary ideas are grounded in theory but tested through the collection and analysis of empirical data. The conclusions of evolutionary psychology are testable, and can be supported or refuted by evidence. The third facet of the evolutionary approach is predictiveness, as evolutionary analyses can inform cases beyond the situation from which they are derived. In understanding the evolved history of psychological mechanisms, we are able to extrapolate on how these proclivities will interact in a given situation. Human beings are conditional cooperators, in that they tend to cooperate in the presence of certain social factors. As formerly stated, human beings act in predictable

ways, we are *predictably* dumb and *predictably* selfish. [¹²⁹] Our minds interact with social and environmental factors in producing behavior, and this allows us to make calculations on how exogenous variables may affect human behavior.

Prescriptive Utility

The final characteristic, predictiveness, leads to the second principle of the epistemological framework: prescriptive utility. This represents the possibility of using evolutionary psychology to inform policy decisions and understand policy outcomes. Evolutionary psychology can help describe the types of policy actors humans tend to be, and the types of policies that are most likely to work. By incorporating the predictive capacity of evolutionary science in our thinking about policy, we gain a valuable tool in prescribing policies that are most likely to be effective.

This is the idea of using human nature as a lever for action. [¹³⁰] With evolutionary approaches and insight it is possible to design incentive structures that tap into the predispositions of the brain, easing the process of manipulating human behavior through policy. This idea of prodding decision making may seem dystopian, but isn't the purpose of *all* social policy to encourage or dissuade certain behaviors? Evolutionary theory provides an avenue to ground policy in something more than mere ideological commitment. There are significant costs

¹²⁹ Peterson, M.B. (2016) *Evolutionary Political Psychology*. In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology*. Vol. 2. John Wiley and Sons.

¹³⁰ Buss, D. (2015) *Evolutionary Psychology: The New Science of the Mind*. 5th ed. Pearson Education.

associated with our current system of policy making. Assuming that every individual is completely malleable comes with obstacles that come to light through the lens of evolutionary psychology.

In the *Life of Galileo*, Bertolt Brecht writes that “the chief cause of poverty in science is imaginary wealth. The pursuit of science is not to open the door to infinite wisdom, but to set some limit on infinite error” [¹³¹] [¹³²] There are profound limits to using human nature to understand the political and social world, but there are also enormous potential benefits. In the same way, ignoring the reality of our evolved condition is to leave us vulnerable to unrealistic and ungrounded philosophies that wishfully ignore the influence of millions of years of context-driven biological change. Adding an evolutionary lens to our scrutiny of our social identity allows us to see a clearer picture of human tendencies and the ubiquities that govern the human condition. Examining policy and social issues with an evolutionary perspective in mind brings *descriptive value*, in that it leads to novel conclusions of causation and environmental interaction.

The evolutionary perspective also has a heuristic discovery value, allowing us to ask questions we might not have otherwise asked. This, in turn, provides *prescriptive utility*, which involves using evolutionary conclusions to predict human behavior in relation to contextual circumstances. The final question concerning the usefulness of an evolutionary approach in thinking about the social sciences is how it can be used to build normative conclusions and inform

¹³¹ Brecht, Bertolt. (1943) *The Life of Galileo*

¹³² Konner, M. (2003) *The tangled wing: biological constraints on the human spirit*. 2ed. Holt Paperback

value assessments. It is in these normative pursuits that evolutionary theory warrants limitation, or in the very least extreme caution.

Normative limits

The need for normative debate arises from the visceral significance of the subjects involved. Politics is the prioritization of resource interests in accordance with power and ideals, and the methods used to study these dynamics can have potent effects on the conclusions reached. Political science is an exercise in understanding interactions between power, authority, and individual behavior. The arguments that stem from this undertaking have the potential to manipulate the manifestation of social control. Combining the social sciences with an idea as powerful as evolutionary theory is to position an ideological leviathan in a seat of immense authority.

What this debate demands is an explicit justification for the epistemological methods used in combining our evolved identity with an investigation of political conclusions. Any sort of intellectual pursuit of socio-political answers should present a candid discussion outlining the specifications, implications, and limitations of the chosen approach. This is not what I will achieve in this thesis, but it is ultimately the discussion that I wish to initiate. There is a need for an epistemological foundation for using evolutionary perspectives in the social sciences, in descriptive and explanatory terms, and to inform normative strategies. To what extent should we implement the *descriptive*

value of our evolved identity? Should we formulate policy based on the *prescriptive utility* of evolutionary conclusions? How can we justify using evolutionary findings in producing a normative vision of the world?

As mentioned briefly before, the naturalistic fallacy is the idea that one cannot conclude what is morally good by describing what exists, or is functional in the natural world. Because human males have an evolved predisposition towards violence in a range of contexts, this does not mean that this violent is warranted in a value-based society. Despite the widespread understanding and recognition of the naturalistic fallacy in mainstream evolutionary psychology, there are some who wish to reject or modify the argument in favor of strict naturalism.

Some scholars, mostly from the scientific community, have argued for a complete overhaul of how we go about answering normative questions. Paul and Patricia Churchland are two neuro-philosophers who express an open apathy for the “old fort” of what they call “folk psychology.”^[133] This is their collective term for philosophical traditions that operate outside of the naturalistic perspective, which basically includes all traditional moral philosophies. They champion *moral realism*, or the existence of objective moral facts. For them, evolutionary psychology and neuroscience provide a gauge by which to determine the morality of an action based on how it affects cognitive responses. They claim that “legislatures can now overcome the archaic institutions of society and folk

¹³³ Churchland P. (2022) *Braintrust: what neuroscience tells us about morality*. Princeton University Press.

traditions and base their propositions on this new understanding of human society and the way that it interacts with the minds of individual.” [134] Churchland claims that his vision promotes a “brave new world of public policy and the prospective of major cognitive growth for entire societies.” [135] What Churchland does not account for, is that he will have to first convince the public and political elites that this approach is *valuable*.

In a review of Roger D. Masters’ *The Nature of Politics*, Heiner Flohr convincingly responds to an analogy used by Masters as an attempt to cast aside the naturalistic fallacy as an impediment to evolutionarily-informed political progress. [136]

“But when the doctor prescribes a treatment, we don’t normally object that this practice bridges the logical distinction between the facts of diagnosis and the value of health. When the physician says a patient ought to have an operation because the facts show appendicitis, the patient is unlikely to complain about a fallacious logical deduction.” [137]

Masters is trying to argue that when evolutionary theory demonstrates a disconnect between evolved tendencies and social policy, there is no reason to impede social change by holding fast to the stubbornness of the naturalistic

¹³⁴ Churchland, P. *The engine of reason, the seat of the soul: A philosophical journey into the brain*. Cambridge, MA: MIT Press.

¹³⁵ Churchland, P. *The engine of reason, the seat of the soul: A philosophical journey into the brain*. Cambridge, MA: MIT Press.

¹³⁶ Flohr, H. (1990) *Review of Roger D. Masters’ “The Nature of Politics.”* *Politics and the Life Sciences*, 9(1) *Biotechnology and International Conflict* (Aug. 1990) pp. 176 -178. Association for Politics and the Life Sciences.

¹³⁷ Masters, R. (1991) *The nature of politics*. Yale University Press. .

fallacy. For example, Masters might argue that we have every reason to act upon our conclusions (if he believes them to be true) in changing social policy to decrease inequality because those conditions have been shown to interact negatively with our evolved psychology. According to Masters, one can cure the symptoms of social ills by following the prescriptions of evolutionary theory.

However, this analogy is misleading because the doctor and patient proceed from an “unspoken assumption of the value of maintaining or reestablishing health.” [¹³⁸] The doctor and the patient agree that health is a value worth pursuing, and thus the patient should follow the doctor’s advice because he/she is in a informed position to make a diagnosis. In politics, values are far from agreed upon.

“Scientific knowledge can have the effect of setting limits for the effective range of political possibilities. The same is true for the pragmatic setting of political goals and values, whether in a fundamental sense or in a contemporary context. In most actual situations, there is more than one sensible possibility. Scientific findings have a great, though limited value. They do not render irrelevant the ‘ultimate decisions’ people must make, for example, in favor of more freedom to the detriment of justice or vice versa. There is less value consensus here than in the doctor patient relationship.” [¹³⁹]

¹³⁸ Flohr, H. (1990) *Review of Roger D. Masters’ “The Nature of Politics.”* Politics and the Life Sciences, 9(1) Biotechnology and International Conflict (Aug. 1990) pp. 176 -178. Association for Politics and the Life Sciences.

¹³⁹ Flohr, H. (1990) *Review of Roger D. Masters’ “The Nature of Politics.”* Politics and the Life Sciences, 9(1) Biotechnology and International Conflict (Aug. 1990) pp. 176 -178. Association for Politics and the Life Sciences.

Evolutionary psychology is a descriptive tool that provides ontological information that is relevant to the study of social science, but this ontological relevancy does not forfeit the declaration of values to a completely naturalistic epistemological.

In reflecting on the conclusions concerning inequality, the discussion seems to have crossed the divide between a description of social behavior and a normative argument for greater equality. Calling for a more equal society under the auspices of evolutionary conclusions transfers the evolutionary approach into a normative realm of political thought. The fine line between *what is* and *what ought to be* is exactly where the most potent conversations of the evolutionary synthesis begin.

In the case of inequality, the conclusions appear innocuous. Formulating an argument for an egalitarian society is far from novel in mainstream political science. But this conclusion is unique in that the premises are informed by evolutionary psychology and an explicit reliance on human nature. Conventional political science goes about acquiring knowledge by studying demographic composition, behavioral patterns, policy outcomes, institutional arrangements, and public opinion. Nowhere in this approach is a belief in predisposed characteristics of the mind. One might form a hypothesis on previous literature or observational patterns, but these notions are mostly derived from empirical data from within the social sciences. Adding an evolutionary perspective complicates the matter substantially by introducing a field based on different principles of observation, standards of evidence, and normative procedures.

For the sake of this discussion let's accept the notion that society should be more equal because this would bring about greater overall happiness and deter undesirable behaviors because it would change the interactions between social inputs and evolved psychological mechanisms. Even if we accept the methods used to arrive at this conclusion, there are consequential questions of value-prescription that are raised in regard to this normative assessment.

This conclusion on inequality aligns with the tenets of liberalism, but what about those on the opposite side of the political spectrum? Does the evolutionary evidence invalidate the legitimacy of conservative ideals? Do we value contentment over competition? Happiness over production? In the view of Churchland or Masters, there is no legitimate argument against the evolutionary evidence. There is a strict reliance on utilitarianism in the views of the normative evolutionary theorists. Would you be justified in to shaping your ideology around evolutionary ideas? Is this a legitimate basis for deciding how to vote, make policy, or structure laws? How do we implement evolutionary findings and ideas into pre-established value systems, or conversely, how do we argue against the normative policy implication of evolutionary evidence?

If we argue for a change that brings policy closer to an evolved tendency, does this line of reason transfer to other traits? What about cases of male aggression, sex differences, or homosexuality? Each one of these issues requires a separate appraisal of the usefulness of evolutionary theory in shaping our political opinions. There are no obvious answers to any of these questions. What is clear, however, is that using evolution in constructing normative political

statements requires the same sort of justification that we require from any other value system. We ultimately have to account for the moral validity of the values to which we subscribe.

Concluding thoughts

In keeping with the stated intent of this paper, I hope to have inspired a more open discussion of using evolutionary theory and approaches in the social sciences. The previous sections of this thesis were meant to serve as a compilation of potentially useful applications of evolutionary theory in understanding social behavior. I also aimed to clarify the principle components of evolutionary psychology in an effort to break down a hostile barrier between social scientists and evolutionary biologists. If any part of the previous discussion sparked an interdisciplinary idea, corrected a misconception about evolutionary approaches, or provoked a meaningful critique then I would consider this project a success. My goal is to convey the importance of meaningful dialogue around this immensely important issue.

“Those who are provoked need to work out why this topic is provoking. Hopefully they will be motivated to reassess some of their positions, causing an academic curiosity to seek out and investigate how evolutionary theory might be applied and the shortcomings. Evolutionary theory is generally accepted as the only scientific explanation of how

humans became humans, and is considered one of our greatest scientific discoveries.”^[140]

Those in the social sciences should also be relieved that I never argued for a complete replacement of the discipline, but for a widened perspective and larger set of conceptual and empirical tools. Preserving the social sciences is to preserve the study of culture and society. The fluidity of values in contemporary politics requires a method of study that is specialized in understanding these trends. The social inputs that interact with psychological mechanisms can be conceived of as exogenous influences on individuals in society. It is the task of political science to pursue these ends.

“Hence in the context of mass politics, researchers cannot understand the formation of political judgments by just considering the structure of adaptations for politics. In addition, researchers need to direct the pathways – such as mental stimulations, medias stories, and political campaigns – through which ecologically valid information is (or fails to be) transmitted to those adaptations.”^[141]

I hope that the evolutionary theory of today is not the evolutionary theory of tomorrow. It is the charge of the evolutionary sciences to continuously rework, revise, and reformulate their understanding of human identity. It is my desire to see the relevancy of this thesis dwindle as research in both the social and natural

¹⁴⁰ Kennair, L. E. O. (2007) *Evolutionary political science? Why not!.* Evolutionæ Teori. INDD.

¹⁴¹ Peterson, M.B. (2016) *Evolutionary Political Psychology.* In Buss, D. (Ed.) *The Handbook of Evolutionary Psychology.* Vol. 2. John Wiley and Sons. . p. 1099

sciences converge to provide a clearer vision of both society and the individual. Evolution adds a wealth of intellectual prospects to the study of human behavior, as it open new avenues of exploration in the study of history, sociology, anthropology, and political science.

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