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UNIVERSITY OF CALIFORNIA SAN DIEGO

Behavioral Science and its Social Problems: Trajectories of Duality in Psychology and  
Economics

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of  
Philosophy

in

Sociology (Science Studies)

by

Chad Justin Valasek

Committee in charge:

Professor Juan Pablo Pardo-Guerra, Chair  
Professor Catherine Gere  
Professor Lilly Irani  
Professor Martha Lampland  
Professor Danielle Raudenbush

2022

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University of California San Diego

2022

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## **LIST OF ABBREVIATIONS**

BE: Behavioral economics

RT: Reaction time/response time

DPT: Dual-process theory

QHD: Quasi-hyperbolic discounting

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grandmother was such an immense source of joy and care for me; she also took me and my mom in when my mother was working several jobs. My grandmother watched over me when she was not working, and made me, an incredibly lonely child, always feel special. My cousin, Kacie, was like an older sister to me. I cannot explain all the ways she has influenced me. A music fan, like our grandparents, Kacie was also a beloved community and event organizer. I do not know if my cousin or my grandparents would have read my dissertation, but I do know they would have supported me during my defense if they were here.

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forms of labor. I thank Danielle Raudenbush for joining the committee late during this process, and for providing such insightful questions and comments on my introductory chapter.

## VITA

- 2008 Associate of Arts, Antelope Valley College
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## **ABSTRACT OF THE DISSERTATION**

Behavioral Science and its Social Problems: Trajectories of Duality in Psychology and Economics

by

Chad Justin Valasek

Doctor of Philosophy in Sociology (Science Studies)

University of California San Diego, 2022

Professor Juan Pablo Pardo-Guerra, Chair

This dissertation explores the complex history of self-control within the framework of dual-mind models in the behavioral sciences, including experimental psychology, microeconomic theory, and behavioral economics. By using historical texts, archival documents, this dissertation

shows how dual-mind models developed out of racist scientific models of evolution that (mis-)characterized differences between so-called “civilized” populations and “savage” populations. Chapter 1, using primary and secondary texts, shows how early experimental psychologists, using reaction time tests and other psychometrics, represented the modern civilized man as having some of these same psychological traits, though with a part of the mind that the “savage” lacked. This “evolutionarily recent” part of the mind allowed the civilized to repress the “savage” part of their mind. Similarly, as Chapter 2 shows, economic thinkers developed their concepts of temporal discounting through contrasting traits between “rational man” and “savages”. While there was much interaction between race science, economics, and psychology in the late nineteenth and early twentieth century, much of this history has been ignored or suppressed. Chapter 3 updates this history by showing the role of race and biological determinism in the development of modern behavioral economics by exploring primary documents and archival sources from the first behavioral economics working group. Through interviews, Chapter 4 reveals the rhetorical strategies contemporary behavioral economists use to make sense of their field, including differences in training, and to support their methodological and theoretical choices as behavioral researchers. These interviews are also sources for Chapter 5, which explores the development of behavioral policy interventions and the role of nudge theory in policy and behavioral science today. Many of the behavioral economists interviewed saw their role as “strategic scientists” in their attempts to both describe human behavior, while also attempting to influence human behavior through design and policy interventions. The conclusion chapter not only reviews the findings from the previous chapters, but also brings in critical literature from various fields, including Science & Technology Studies, Economic Sociology, and Sociology Race & Ethnicity, to make sense of the development of behavioral economics and nudge theory today.

## **INTRODUCTION:**

### Presenting a Critical Approach to Behavioral Economics & Nudge Theory

The feeling of choice and the structure of choice become immensely acute with a simple change in display of the options. Stepping into a fast-food restaurant, a person identifying themselves as a behavioral researcher handed me a menu with traffic lights next to the various food and drink items. I am immediately taken aback by the stop lights, which makes me want to avoid these now “dangerous” items with too many calories to apparently be healthy. All of the major food items and value meals are revealed to be next to bright red lights.

By the time I had entered this restaurant, I was already familiar with nudge theory,<sup>1</sup> a concept developed by behavioral economists in the early 2000s (Thaler & Sunstein 2008; 2003; Camerer et al. 2003). Behavioral economists put forward this theory based on the predictable fallibility of humans, which seek to influence the chooser through changing the presentation of choices. The popularization of behavioral economics and nudge would go on to influence regulation from the governmental level to the personal level via emotional management techniques. In the case of the menu I encountered, the red stoplights next to the menu items, or simply presenting the number of calories, are increasingly popular forms of nudging the choices of consumers away from ‘overconsumption’ or ‘unhealthy’ food options to choose healthier options.

This dissertation is a result of my intellectual journey from psychology and behavioral economics to sociology and science studies. My experiences as a behavioral researcher brought to my attention the more problematic aspects of behavioral economics. For instance, the historical,

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<sup>1</sup> Nudge theory refers to behavioral methods of influencing people and their choices, particularly through affecting the environment in which people make choices.

political, and social context that research occurs in; reductionist research methods; the targeting of certain populations as worthy or unworthy of experimental participation; constructions of subjects by the principal investigators (also known as PIs); and the role of policy interests in the making of experiments. In other words, by extrapolating from my experiences, I focus on the unglamorous and exploitative aspects of behavioral economics research in order to position the field in more critical and sociological terms.

I became infatuated with behavioral economics, and related theories of the human mind and motivation (i.e., dual-process theory and nudge theory, respectively) while working for a psychology laboratory on ‘hot’ cognition, political psychology, and implicit cognition.<sup>2</sup> One of my advisors had introduced me to behavioral economics by handing me a copy of *Nudge* by Richard Thaler and Cass Sunstein. Soon after reading, I became more interested in behavioral policy and behavioral field experiments. Before graduating from UC Irvine, I interned as a research assistant for George Loewenstein and other behavioral researchers at Carnegie Mellon University. The internship meant taking out loans so that I could live in a dilapidated fraternity house with several other undergraduates coming from prestigious universities who were able to join the program because their family could support them financially. We spent countless hours trying to convince unwilling pedestrians (who PIs almost never interacted with) to come into our mobile research center, which was a customized motorhome, to participate in behavioral experiments for a few bucks at most. Meanwhile, all of the professors I worked for, many of whom had appointments in the business school, had enormous houses and plenty of surplus income. I quickly realized the

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<sup>2</sup> Dual-process models represent the human mind into two cognitive systems: System 1 and System 2. The former is an evolutionary older cognitive processing system that primarily functions automating and is prone to affective and impulsive responses. System 2 is an evolutionarily more recent cognitive development that processes more rational, deliberative thoughts. Hot cognition and implicit cognition are often used as synonyms as both focus on how and when System 1 processing tends to influence human behavior (see for example, Kahneman 2002, and Metcalfe & Mischel 1999).

profitability of behavioral economics but became more jaded at the prospect of gaining such wealth based on suspect research design and data, which often reduced many complicated personal and social factors to just a handful of standardized, quantitative variables.

After graduating from UC Irvine, I took up an offer from George Loewenstein to work with him as his research associate. Between my work as a research assistant and as a research associate I had assisted other behavioral scientists with over two dozen experiments; however, I never received any publication credits for my work on these experiments, with the exception of the research I did on my own undergraduate honors thesis (which is discussed in more detail in chapter 6). The design research, data collection, data analysis, publication, and applications aspects of these experiments increasingly troubled me in my work in the field, driving me toward more structural and explicitly political perspectives of behavior and society that eventually led me to sociology and science studies. Histories and approaches to behavioral economics have tended to leave out experiences like mine as a behavioral researcher, while celebrating the typically “great men” of the field instead. With my personal experience and focus on structural factors and social inequality, I present a fresh perspective on these often-celebratory histories of the field.

My experience as both a behavioral economist, and more importantly, now as a sociologist of science and technology, has led me to ask questions such as is the field as new as it claims? If the 1980s were not the beginning, then why has this history been repressed? What are the social factors that impacted its development? How do scientific issues and political interests intersect when it comes to behavioral research and policy? How do assumptions and constructions of race and racial politics influence the concepts and theories of behavioral economics?

The central sociological puzzle for this critical project is then how is scientific knowledge of people’s anomalous (or, to use the economic theoretical language, “irrational”) economic



behavior constructed? Through my research, I have come to answer this question through archival and interview-based qualitative research methods. My answer is that behavioral economics constructed and pathologized otherwise normal behavior in order to present a new field that counters orthodox economic theory and rational choice-based policy.

By going back to archival sources, I found that reaction time (i.e., a psychophysiological measurement of mental processing speed) and discount rates (i.e., the amount one discounts the future over time) come from “race science” origins, while my interviews showed that race, or more specifically for Hansen et al. (2020), whiteness, often acts as a “ghost variable” (see also Karkazis & Jordan-Young 2020).<sup>3</sup> That is, a ghost variable is a variable (or floating signifier/slippery classification) that is also an “invisible, default assumed norm,” in which whiteness codes research on ‘universal human biology’ as the white subject; while at the same time, whiteness operates as a driver of structurally-enabled access to science, technology, and medicine (Hansen et al. 2020). In the case of behavioral economics and nudge theory, the ghost variable of whiteness codes participants of various backgrounds in “color-blind” ways, neglecting the possibility of structural differences certain people may face in trying to access basic goods and services. As we shall see, this happened at the very beginning of behavioral economics. The first paper titled “Behavioral Economics,” that I could find, was about the economic behavior of people in prison (Kagel & Winkler 1972). It is conceptually and ethically dubious to consider that behavioral scientists could simply ‘nudge’ large numbers of people out of prison or poverty.

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<sup>3</sup> As Karkazis & Jordan-Young (2020: 768) put it, “The ghost metaphor aligns well with the ephemeral, shape-shifting character of race: rather than indicating that race is “not real” because it is a constantly-shifting product of ideology, scholars have demonstrated how race is produced through and fully grounded in durable material relations.” The authors add that it is not simply about perceiving or tracing these ghostly figures, but also to reckon with them; “Reckoning with ghosts requires being in relation with them, which implies affective attachments like empathy and grief. (773).

## *Questioning the development of behavioral economics*

Stories and explanations of behavioral economics and its growing influence have painted the field as an innovative, heterodox approach to economics through psychological insights, or simply put, providing economic theory with more realistic psychological foundations. While many credit Herbert Simon as the original behavioral economist, the work of Daniel Kahneman (who received a Nobel Prize in Economics for his contributions to behavioral economics) and Amos Tversky has often placed them as the founders of the field due to their seemingly original work in the 1970s and 1980s. The spread of behavioral economics is developed more fully in other chapters of this dissertation; however, I will point out here some of the key factors in its development, both intellectually and institutionally.

Kahneman and Tversky did not initially intend to radically reshape economics, their work certainly challenged the widely accepted model of rational actors in economics. Instead, behavioral economists showed how and when economic actors behave irrationally. While this debate in economic theory may seem abstract and possibly even banal, the model of the “not always” rational subject of behavioral economics has led to very real consequences via policy. Such policies, informed by behavioral economics, are often referred to as nudges or nudge theory.

Nudge theory, as we know it today, coevolved with the field of behavioral economics and became codified through the initial work of two different groups of behavioral economists. One approach was libertarian paternalism (Thaler & Sunstein 2003), the other was asymmetric paternalism (Camerer et al. 2003). The result, *Nudge*, was sought out by US President Barack Obama and UK Prime Minister David Cameron.

The two most cited, in academic and public media outlets, examples of “nudge theory” (or applied behavioral economics) would be an opt-out savings plan and opt-out organ donation (e.g.,

Thaler & Sunstein 2008; see also Sunstein 2014a; 2014b). In addition to these and the traffic light calorie menus, other examples are focused on the environment, waste, and energy consumption, such as the nudge to get drivers to use less energy while driving by switching the pedometer to GPM (gallons per mile) rather than the typical MPG (miles per gallon).<sup>4</sup> However, despite the myriad of nudges that relate to savings and the environment, the most typical nudges supported by behavioral economics are health related. Though, concerns over nudges in regard to electoral politics, marketing, consumption, workplace management, and digital technology via apps, have recently become more scrutinized by scholars, engineers, journalists, and political commentators. While this dissertation does not attend to all of these diverse uses of so-called nudges, it does bring forward the historical precedence of similar behavioral interventions (all derived from the psy sciences) from the late nineteenth century until the twenty-first century.

This history of behavioral economics requires us to ask questions like, who benefits the most from nudge? What boundary-work has led to the development of recent behavioral disciplines? How has the relationship between emotional regulation and governance been reconfigured as a result of these recent behavioral disciplines? And finally, who is most targeted by nudges and why?

By turning to the longer history of the relationships between behavioral economics and psychology, we can see that there were intellectual problems dating back to the nineteenth century, which continue to recur. Some of this history of behavioral economics is longer than we might think, as certain authors have pointed out (e.g., Sent 2004), and this background informed my decision to pursue this study in a historical manner. For instance, early developments of economic theory in the late nineteenth and early twentieth centuries focused on debates over assumptions of

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<sup>4</sup> All examples can be found in Thaler & Sunstein (2008).

economic actors that mirrors similar intellectual debates with regards to behavioral economics today. The idea of a rational economic actor implicitly, and sometimes explicitly, relied upon assumptions of self-command and a static valuation of future goods then as it does now. Debates over these assumptions lasted several decades in the early twentieth century and included insights from psychophysics, psychology, anthropology, evolutionary biology, statistics, and eugenics.<sup>5</sup> This is the history often forgotten when examining the assumptions embedded in behavioral economics; therefore, I bring forward a recovered history of scientific racism and co-production that elicits a view of current behavioral economics and nudge theory.

## LITERATURE REVIEW

The paucity of historical scholarship on behavioral economics is rather obvious compared to many other fields and topics within either the history of psychology or the history of economics, but the scholarship that does exist tends to present a ‘whiggish’ narrative of the field. These narratives often present behavioral economics as a progressive counterforce to conservative, self-serving models of economics.<sup>6</sup> Most historiographies privilege the new behavioral economics, starting with Kahneman and Tversky, and focus almost exclusively on theories and experimental findings. That is, since Kahneman and Tversky conducted simple experiments to show inconsistent choices and then labeled such inconsistencies as cognitive bias and heuristics, this led many scholars to perceive the development of Kahneman and Tversky’s behavioral economics project

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<sup>5</sup> While chapter 3 locates some of the history of behavioral economics in nineteenth century marginal theory in economic thought, thereby centering the field in the history of economics (in part), the majority of my dissertation addresses the psychological and behavioral aspects of behavioral economics.

<sup>6</sup> In history of economics journals, as well as STS journals, historiographies of behavioral economics are greatly lacking. With a brief search, you will find that journals such as *The European Journal of the History of Economic Thought*, *History of Political Economy*, *Oeconomia*, *Science as Culture*, *Social Studies of Science*, and *Science, Technology and Human Values* have less than a dozen articles each that deal with behavioral economics directly (at least at this time in Spring 2021).

as being primarily influenced by cognitive science, when in fact, they had a variety of influences, including psychophysics, intelligence testing, psychoanalysis, and even behaviorism (as detailed in chapter 4). Given that many of the histories of the field are written by the behavioral economists themselves, it is hardly surprising that they give such a positive gloss to their field. For instance, Thaler (2015) and Camerer (1999) discuss the influence of Herbert Simon on behavioral economics, but ultimately give credit to Daniel Kahneman and Amos Tversky for setting the foundation for behavioral economics. The work and relationship of Kahneman and Tversky was explored in a journalistic fashion by Michael Lewis (2015) and in academic works by Floris Heukelom (2014; 2012a; 2012b) who also present Kahneman and Tversky as the central figures in the early development of behavioral economics. Kahneman was awarded a Nobel Prize in 2002 for his contributions to economic theory, though Herbert Simon and George Akerlof who also took somewhat behavioral approaches to economic theory won Nobel prizes previously, and Richard Thaler won a Nobel Prize in economics in 2017 for his role in the development of behavioral economics.

The rise of behavioral economics can be seen in part through a systematic review of citations of BE literature. This is exactly what Geiger (2017) has done by showing the rise of articles with the terms “behavioral economics” and “bounded rationality” in top economics journals such as *The American Economic Review*, *The Journal of Political of Political Economy*, and *Econometrica*. Geiger further shows that Kahneman and Tversky’s 1970s articles were the most widely cited and that the explosion of references to behavioral economics occurred after Daniel Kahneman’s Nobel Prize win and lecture. In short, most of the “internalist” and “externalist” histories focus on Kahneman’s and Tversky’s contributions to the beginning of the field. Geiger, along with many other commentators on the history of behavioral economics, such

as Whitehead et al. (2019), Nagatsu (2015), and Sent (2004), posit a divide between ‘old’ and ‘new’ behavioral economics. The latter is usually thought to include Herbert Simon, James March, George Katona, and many others, while the latter includes Kahneman, Tversky, Thaler, Loewenstein, Camerer, Laibson, and others.

Floris Heukelom has written the most amount, and arguably, the only systematic approach, on the history of behavioral economics, providing in-depth reviews of the literature and connecting some of the institutional developments of behavioral economics. While my dissertation is indebted to Heukelom for his research, my work extends his history on several accounts. In *History of Behavioral Economics*, Heukelom (2014) focuses primarily on the development of behavioral economics in the context of economic theory (with the exception of the work by Kahneman and Tversky). Heukelom and I both draw from the archives of the Russell Sage Foundation; however, Heukelom left out a great deal of contributions by experimental psychologists, Richard Herrnstein, Walter Mischel, George Ainslie, and Drazen Prelec, who, as I found in the archives, all participated in the first behavioral economics working group on intertemporal choice. Heukelom does draw on some of the politics of behavioral economics and the role of social engineering in the development of psychology as a scientific field but fails to put these points in the context of eugenics and scientific racism, which is what I explore in this dissertation.

Meanwhile, in the *Routledge Handbook on Behavioral Economics*, various contributors shed light on the work of Kenneth Boulding, Harvey Leibenstein, Reinhard Selten, Gerd Gigerenzer, Vernon Smith, thus privileging economists and more traditionally labeled behavioral economists, like Kahneman and Thaler. Other work by Wade Hands (2010), Jefferson Pooley and Mark Solovey (2010), Hamid Hosseini (2003; 2011), José Edwards (2016), Philip Mirowski and Edward Nik-Khah (2017), Cathy Gere (2017), Michiru Nagatsu (2015), and Luigino Bruni and

Robert Sugden (2007) have pointed out other significant contributors to behavioral economics, such as the Cowles Commission, Paretian economics, behaviorism, psychophysics, utilitarianism, experimental economics, and consumer psychology. I draw upon many of these histories in my own account of the development of behavioral economics; like these works, my goal is not to give a totalizing account of the field, but to situate it in particular intellectual and socio-political contexts that have largely gone unnoticed, particularly when it comes to race, but also disability, gender, fatness, models of addiction, and neoliberal capitalist ideologies.

In sum, histories of behavioral economics and nudge have not paid enough attention to the roles of evolutionary theory, biological essentialism, psychoanalysis, psychiatry, and reaction time studies in the development of behavioral economics. These omissions are crucial for my project as they point to the ways in which behavioral economics has implicitly accepted assumptions and methods from the race sciences at the turn of the nineteenth century.

## CONTRIBUTIONS TO SOCIOLOGY

This dissertation presents numerous contributions to the sociological literature. In particular, as I spend much of the relevance of my findings to ideas about race, I first dig into the sociology of race literature. In sociology, race is seen not as a natural kind, but as a social construct. Importantly for sociologists, race is not about identity, but is rather the outcome of historical processes, cultural institutions, and political and economic power (Elias & Feagin 2016; Omi & Winant 2014).

The origins of racial categories are obscured, leading to a frequent conflation between race and ethnicity. Yet, races are taken to be biologically differences in the wider culture and even in certain scientific studies despite the general scientific consensus that there are more genetic

differences within racial groups than between them (see McChesney 2015 for an overview). Racial categories have persisted, in part because of so much early race science, as well as other “racial projects” (Omi & Winant 2014), such as cultural discourses and institutional policies and practices. My work shows many of the ways in which early economic and psychological models were based on racial and ethnicity differences.

As Hirschman and Garbes (2021) point out, race is central to economic life. This is most obvious when considering the history of economic markets, and ongoing economic inequality internationally as well as within the United States. That is, colonialism and slavery. Racial capitalism, which continues to shape life chances through various political and economic institutions, including consumerism, finance, and management. One contribution this dissertation makes is to show how behavioral economics relates to racial capitalism. In analyses in racial capitalism and economic sociology on race, including Hirschman and Garbes leaves out behavioral economics. This is important, as behavioral economics maintains that their studies show “how people really behave,” an astonishing assertion given that they do not include race or racism in their work (not including behavioral law, which at times takes racial discrimination in employment settings into account).

Furthermore, behavioral economics tends to focus on individual behavior, while inadvertently reinforcing white embeddedness in organizations. As sociologist Victor Ray has shown, organizations are racialized. Organizations can maintain implicit institutional racism through various hierarchies and sorting mechanisms, such as the nebulous discourses around “fit” when hiring, which can be a covert means of not hiring or promoting a Black employee or candidate. While psychology has attempted to show how unconscious racism likely exists in people in organizations, other psychological measures, such as personality tests, or at least in



historical cases, IQ tests, provides quantitative measures to justify white criteria of merit (see Davidson 2021 for example). Psychology via IAT training (an individual cannot create racial categories) Much can become “automatic” or “unconscious” in culture and organization, but it is important to understand how it was intentionally created in the first place. For instance, ideas about laziness and impulsivity in terms of class and race often leads to calls for disciplining labor (i.e., via workhouses during English Poor Laws) can be found in many of the economic thinkers (such as William Jevons and Irving Fisher) discussed in chapter 2. The sociological works discussed in this section, along with many from sociology of science and other subfields of sociology, undergird my analysis in the following chapters.

#### PRESENTING A NEW HISTORY OF BEHAVIORAL ECONOMICS

My history takes us from the slave state and settler-colonialism of the nineteenth century alongside the institutionalization of various scientific disciplines such as biology and physiology. Despite the end of legal slavery in the US and Europe, the end of the century saw the growth of race science. Much of the theory of this time speculated innate differences between races, some arguing for polygenism, others monogenism (though they did not use these terms at this point in time). While race science rooted in evolutionary thought predates Charles Darwin, for instance, E. D. Cope’s racist Neo-Lamarckian perspective (e.g., Schuller 2017), I argue that the works of Darwin, along with Herbert Spencer and Georges Romanes, created a hierarchy of intellectual, emotional, moral, and physiological differences between races.

This was in part accomplished through reaction time (also known as response time) measures. Simple reaction time measures from psychophysics to experimental psychology. Also connected to reflexes. A means to derive underlying neurological (what we would call cognitive

today) processes (average and per case). Using a chronoscope (originally used to determine “personal equation,” individual and average reaction time to make telescopic observations commensurate in astronomy; see ), Herman von Helmholtz and others attempted to measure how quickly one would consciously sense sound. How quickly research subjects reacted to other sensory stimuli (whether via touch, sight, etc.) became part of various research studies. As many psychologists became more interested in the psychology of decision-making, the length of time it took people to make a decision given a set of choice options. Unlike simple reaction time, choice reaction time is not about how quickly one responds to a specific stimulus but is about inferring cognitive processing depending on how quickly one chooses a particular option. Choice reaction time and task response time become a form of routine measurement in many experimental settings in behavioral science (such as go/no go tasks), as well as adjacent neuroscientific studies (via fMRI).<sup>7</sup>

The measuring and recording of reaction time has a long and significant history within experimental psychology (and science, more broadly). The use of reaction time measurements has influenced a variety of methodologies and theories of animal (including humans) behavior. The context of this comparative and differential research was in part the concurrent development of eugenics and Social Darwinism. In general, these approaches to human difference were racialized, as were many of the theories of the human mind espoused by certain psychologists. The reason for studying simple reaction time, in this case, was to find a scientific way of measuring cognitive differences between groups and individuals. While IQ tests could do this task as well, reaction times were seen as more obviously connected to physical processes of the nervous system,

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<sup>7</sup> See Martin (2022) and Luce (1986) for more details on the variety of reaction time measures.

revealing innate differences, ones that could not be entirely controlled by the individual, but instead shows their unconscious instincts and reflexes.

Much of previous scholarship on scientific racism has focused on physical trait differences (Saini 2019; Jackson & Weidman 2006), or, in the case of psychology, intelligence (Richards 2001; 2003; Zenderland 2001), while often ignoring other research avenues such as psychophysics, emotions, and neuropsychology.<sup>8</sup> This can be seen in the numerous reaction time studies between the 1880s-1930s. While reaction time studies were not always a measure to simply compare races, they certainly reinforced Eurocentric views of race, which had naturalized phenotypic differences. In every case, regardless if they were slower or faster in their reaction time measures, Black and indengious peoples were regarded as inferior to whites (see Bache 1895). Reaction times nevertheless prevailed far longer than this period, extending as a regular measurement in psychology studies, albeit in different ways for various research topics and theoretical frameworks, to today (e.g., Rubenstein 2007). The link between one's physiology and psychological superiority or inferiority became an embedded assumption, an underlying valuation of people measured, supporting an ideology of difference between racial groups.

As many science studies scholars have pointed out, measurement and quantification have long characterized the technization of scientific inquiry and as tools for state (e.g., Desrosières 2010), and can sometimes be used as boundary objects between fields, which in this case, meant between psychology and economics. One such boundary object between economists and psychologists included measures and calculations of subjective utility, as can be seen as far back as the nineteenth century in the work of Richard Jennings and Francis Edgeworth. As behavioral economics developed, the idea of measuring utility over time became prevalent, bringing together

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<sup>8</sup> For a recent exception, see Erica Fretwell's *Sensory Experiments: Psychophysics, Race, and the Aesthetics of Feeling* (2020).

psychological studies of delays of gratification (measured via response time) with economic theories of time preference and future discounting to better understand so-called preference reversals and related phenomena like procrastination and impulsive spending.

The idea behind discount rates is that one should discount the value of a future consumer good as much tomorrow as much as they would a year from now. Discount rates are related to interest rates as well (usually seen as the inverse), and can be calculated at the individual, institutional, or societal level. By connecting reaction time studies to individual and national discount rates, economists would go on to argue for differences in the valuation of the future and predispositions to saving money between cultures and racial groups. While there were many debates on the use of these discount rates and reaction time measures, they each continued in economics and psychology, respectively; however, the two methods were once again brought together through the work of Richard Herrnstein and George Ainslie.

Herrnstein's neo-behaviorist program supported his views of IQ differences between races, while also taking his behavioral economics research, to argue for a psychological disposition for criminal behavior. Meanwhile, George Ainslie, as a student in psychiatry, worked in Herrnstein's pigeon laboratory and made the connection between reaction time and discount rates (as the economist William Stanley Jevons did a century ago). Ainslie's work was then to connect steep discount rates to addiction. That is, the development of behavioral economics and nudge rest on assumptions of medicalized psychopathologies and heritable criminal behavior not unlike the race science work in the late nineteenth century and twentieth centuries (e.g., Schuller 2017).

The typical view of nudge is that it is a later development of applied behavioral economics; however, as I uncovered in archival documents, policy recommendations based on behavioral science experiments were central to the first behavioral economics working groups and

conferences. In particular, these early behavioral economists, such as Herrnstein, Ainslie, Richard Thaler, etc., constructed their theories as primarily oppositional to the neoliberal Chicago School of economics, most centrally defended by Gary Becker in the 1970s and 1980s. While Becker held a view of people who use drugs, including those with substance use disorder, as rational, Herrnstein and others viewed such behavior as irrational, with the implication that the former resists policy reform, and the latter extends policy reform. I argue that this work presaged, and influenced, the libertarian paternalism of nudge theory of the 2000s.

My goal in this dissertation has never been about tracking the entirety of behavioral economics or applications of nudge and dual-process theories, nor do I offer a complete history or a rigid critique. Instead, as I continued conducting interviews, which were often on hiatus due to the fact that many of the messages I sent to prospective interviewees were ignored, I became more interested in historical accounts of the development of behavioral economics. My initial foray into archival work came from the many files on the behavioral economics project at the Russell Sage Foundation Archives. It was in these archives that I found the importance of Richard Herrnstein, of *The Bell Curve* fame (with Charles Murray, 1996), to the development of the field. Even though I had studied behavioral economics for nearly a decade, Herrnstein's name never came up.<sup>9</sup> This odd, and very surprising, encounter led to me researching more on the history of experimental techniques in psychological laboratories, eventually leading me to explore a longer connection between race science and behavioral economics.

My work therefore shows how behavioral economics has its roots in nineteenth century psychophysics, and twentieth century differential psychology, psychiatry, psychoanalysis, and

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<sup>9</sup> Herrnstein's contributions to behavioral economic thought have been summarized in the posthumous volume *The Matching Law* (Herrnstein 2000).

behaviorism, rather than economic theory and cognitive science exclusively. These early interactions, starting in the nineteenth century, concerned itself with self-control and behavior at a population level, as behavioral economics does today. Specifically, I connect theories of differences in economic behavior or assumptions of economic actors as being rooted in biological theories of reaction time and discount rates. This history reveals the endurance of scientific racism despite the near absence of direct references to race in the behavioral economics literature. Furthermore, nudge theory was not some ‘after-effect’ of behavioral economic theory or findings, as is typically reported (e.g., Heukelom 2014), rather behavioral policy was a concern for behavioral economists in the founding of the field.

The following dissertation makes several intellectual contributions to the history of the human sciences, medical sociology, economic sociology<sup>10</sup>, public policy, public health, and STS. In the history of the human sciences, I propose a reading of theories of human evolution as not outside the social order of race, sex, class, and disability. Medical sociology reveals the ways in which behavioral economics seeks to normalize the population by first reinforcing the medicalization (Turner 1997; Conrad 1992) of irrationality. Similarly, histories of science can often reveal cultural influences and hierarchical differences that affect scientific practice and categories. This can be seen in the context of European and American colonialism and slavery, which conflated subjugation to (inferior) racial categories. That is, in the nineteenth century, the rise of behavioral sciences, such as psychology and economics, corresponded to cultural and

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<sup>10</sup> The fact that economic sociology has largely been oppositional to rational choice theories (see for instance, Smelser & Swedberg 2010; Pinch & Swedberg 2008), made it an appealing topic for the Russell Sage Foundation, seeing it as an alternative to mainstream economic theory. Specifically, my archival research revealed that the Russell Sage Foundation funded not only behavioral economics projects, but economic sociology as well. Although this corresponding linkage between the fields is not the focus of this dissertation, I plan on further researching this historical connection in more detail in a future project. See Hirschman & Garbes 2019 on discourses of race in the history of economic sociology.

political definitions of human difference based on phenotypic features.<sup>11</sup> While the role of eugenics, and scientific racism more broadly, have been applied to certain developments of psychology, such as differential psychology based on psychometric intelligence quotients, rarely has other paradigms in psychology been as systematically examined through influences of scientific racism and eugenics (see Table 1 for an overview of the main researchers I track in this history and their views on reaction time, discount rates, and dual-mind models).

## OVERVIEW OF CHAPTERS

Drawing upon primary and secondary sources in the history of biology, psychophysics, and experimental psychology, in chapter 2, I detail the development of racial differences that came to inform early psychology studies. From the evolutionary theories of Darwin, Spencer, and Romanes, there was a growing consensus among early psychology and psychophysics experimentalists that there were psycho-physiological differences. This difference could be confirmed by recording reaction time measures. The reaction time studies were said to inform differences between two spheres of thought, a lower sphere that was primarily associated with primitivism, animality, and short reaction times and a higher sphere associated with intelligence, civilized morality, and long reaction times. I argue that this “higher/lower spheres of thought” dichotomy makes up a proto-dual-process model that would go on to influence models in early psychoanalysis, behaviorism, cognitive psychology, and social psychology for much of the twentieth century, in turn influencing dual-process models in the late twentieth century. I make

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<sup>11</sup> This is of course not to say that there were not any controversies over these concepts and methods, but far from it. There were many contrasting viewpoints over reaction time measures and discount rates over the last hundred and fifty years. I deal with these controversies throughout my dissertation, and in my conclusion chapter, I put these controversies into conversation with STS literature on scientific controversies.

my case by drawing upon the history of psychology and theoretical frameworks from STS and critical race theory to highlight the racial aspects of knowledge production in psychology as a field.

Chapter 3 follows the development of racial difference in economic thought, closely detailing the ways economics and psychology influenced each other from the nineteenth century to the mid-twentieth century. By tracing the overlap between psychology and economics through such authors as John Stuart Mill, William Jevons, Irving Fisher, John Maynard Keynes, and many other political economists and neoclassical economists, this chapter shows that race and psychology were endemic concerns of much political economy and early economic theory. I also draw upon the secondary literature of historians of economics David M. Levy and Sandra Peart (2009) who have previously traced the overlap between racism and economic theory, as well as the secondary literature of Esther-Mirjam Sent (2004) who has written about the early overlap between psychophysics and marginal economics, in order to make the claim that psychology and race was never completely left orthodox economic thought. Specifically, I argue that temporal discount models were used to talk about racial and cultural differences (such as between the English and the Irish for William Jevons or between Europeans and African and Indigenous peoples for Irving Fisher and others) labor and spending practices that we can see come back in the late twentieth century behavioral economics. I once again draw upon STS to argue that reaction time measures acted as an initial boundary object (e.g., Griesemer & Star 1989) between economics and psychology, a boundary object that we see again in behavioral economics today.

Chapter 4 details the development of the ‘new’ behavioral economics. While this period is hardly new, it is instructive regarding the forming of a field and the disciplining of scholars and research subjects. I pay particular attention to the role of the Russell Sage Foundation, whose archives made up the bulk of this chapter along with published research articles by the researchers



discussed in this chapter. Tracing the development of the first behavioral economics working group, I found that Richard Herrnstein was the primary organizer. I also found that reaction time, discount rates, and policy on addiction, overeating, financial savings, and consumption are all present in these first working meetings. I therefore link the problem choice of these behavioral economists to political and economic concerns of their time, particularly in reference to the rise of neoliberalism, as well as racialized policies, such as the so-called obesity epidemic, the war on drugs, and mass incarceration. I draw upon works in STS and the sociology of professions to discuss the rise of behaviorally-informed expertise.

Based on numerous interviews with various behavioral economists, Chapter 5 expands on the initial development of the ‘new’ behavioral economics. The interviews I conducted led me to see a split between the behavioral economists trained in experimental psychology and those trained in economics, particularly when it comes to methods and theoretical preferences. Differences between behavioral economics and economics, as well as experimental economics, have been explored elsewhere (i.e., Heukelom 2015; Hertwig & Ortmann 2001; Caldwell 1986); however, none of these texts were based on interviews with actual researchers in these fields. Through these interviews, I also found the importance of diverse professionalization opportunities for behavioral economists or those who use behavioral economic theories; for instance, consultation opportunities through companies, governmental offices, NGOs, and think tanks. This chapter further explores whether this is a unifying method or theory in behavioral economics and what counts as interdisciplinary for a field with obvious splits yet is defined by the merging of at least two disciplines. I draw upon the sociology of professions and STS to analyze the boundary-work and forms of expertise to make the point that behavioral economics is as much of a business of policy-

making as it is a means of scientific research. That is, this chapter shows the co-production between behavioral economics findings and policy.

Chapter 6 follows the previous chapter by emphasizing the role of boundary-work in the spread of behavioral economics. I begin the chapter by expanding on the origins of nudge policy and theory, before I discuss the packaging of behavioral theories and methods for the purpose of policy testing and intervention. Based on policy documents and interviews, this chapter sees the shifting role of behavioral economists as knowledge brokers in various policy arenas. Importantly, this chapter makes explicit the tensions, criticisms, and limitations of nudge theory. However, since many behavioral economists involved in policy-making see their field as a *strategic science* they attempt to reappropriate criticisms to make their “brand” of behavioral science interventions more credible to policy stakeholders.

In my final chapter, I conclude my dissertation by elaborating on the theoretical and political consequences of the history and current practices of behavioral economics as described in the previous chapters. By providing an in-depth analysis of the emergence of experimental psychology and neoclassical economics to today’s behavioral economics and nudge policy-making, I have provided a new way of thinking about behavior and the continuation of racialized concerns of self-governance. I finish my conclusion chapter by reassessing the contributions of my work, its limitations, and proposals for related future projects. Against a celebratory history of behavioral economics, I offer a critical history that will help us rethink economic theory, behavioral law and policy, as well as current digital design. The next time you see a nudge notification on your phone, it is worth remembering this is an extension of age-old racist science.

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**Table 1.** Central figures discussed in this dissertation and their views on reaction time measures, discount rates, and dual-mind models (blank spaces denote that they did not contribute to research on that topic)

	Reaction time (RT)	Discount rate	Dual-mind model
Herbert Spencer (1820-1903)	Inferred RT differences between races		Civilized mind/Savage mind
Francis Galton (1822-1911)	Inferred RT differences between races		
R. Meade Bache (1830-1907)	Studied simple RT differences between races		Civilized mind/Savage mind
William S. Jevons (1835-1882)		Time preferences/discounting differs by race and/or ethnicity	
Joseph Jastrow (1863-1944)	Studied simple RT differences between men and women		Civilized mind/Savage mind
Irving Fisher (1867-1947)		Time preferences/discounting differs by race and/or ethnicity	
Walter Mischel (1930-2018)	Choice RT (delay of gratification)		Hot system/Cool system
Richard Herrnstein (1930-1994)	Choice RT (with pigeons)	Matching law leading to hyperbolic discount model	
Daniel Kahneman (1934- )	Choice RT	*Endorsed hyperbolic discounting	System 1/System 2
George Ainslie (1944- )	Choice RT	Hyperbolic discounting	
Richard Thaler (1945- )		*Endorsed hyperbolic discounting	Doer/Planner



**Chapter 1**  
**HIGHER & LOWER SPHERES OF THOUGHT:**  
A History of Psychological Studies on Self-control, Reaction Time, and Racial Difference

The popularity of psychology and neuroscience today have reached new cultural and political heights, most notably in interdisciplinary subfields such as behavioral economics (Whitehead et al. 2017). How did our society come to have a material and scientific understanding of the mind? One that could be described, measured, and targeted for intervention? This chapter argues that contemporary models of the mind reflect similar models in the mid-nineteenth century to the mid-twentieth century. Specifically, I will argue that our current model of the human mind rests on a continuity of work of early psychology researchers who combined the insights of energy regulation from biology and physiology. Fundamental to this new conception of the mind was first constructing the idea of mental energy as being a scarce resource, depending on the individual or group, that was distributed across two different kinds of mental capacities; that is, what nineteenth century philosophers and scientists called the “higher” and “lower” spheres of thought. Such a dual model is what I shall refer to as the dual mind (see Table 1 for a comparison chart).

In the mid-nineteenth century we see the dual mind develop out of materialist thinking in two forms of philosophical and empirical inquiry. The first being biology, which developed an evolutionary duality between humanity and animality. Importantly this was not a total split, but rather stressed the animality within humanity. In terms of the dual mind, this was framed as humans being composed of both a higher order of thought (such as moral and philosophical thinking) *and* lower orders of thought (such as automatic reactions and impulses). The second avenue of inquiry

during the mid-nineteenth century was physiology, which developed a dichotomy between deliberative physical action and automatic reactive action.

The combined perspectives of biology and physiology influenced many of the first experimental psychologists and psychoanalysts of the late nineteenth and early twentieth centuries, not only in the way that they reasserted dual mind models, but also how they went about empirically studying the two parts of the mind. Specifically, early experimental psychologists inherited reaction time experiments from physiological researchers. The reaction time test was a test to show how quickly a research subject would react to a given stimulus. The results suggested that people process information without conscious deliberation, supporting the dichotomy between higher and lower spheres of thought, which were recast as simply conscious versus unconscious (and various synonyms) in psychoanalysis.

The dual conception of the mind was not only studied in the confines of experimental laboratories and clinic offices but was quickly applied in a variety of settings across Western societies in the early to mid-twentieth century. For instance, reaction time tests were used to support eugenics research and policy, as they were in other educational, medical, and industrial settings. What the dual mind model offered these settings was as a biopolitical tool to sort, shape and manage populations, overwhelmingly in support of the status quo.

The comparisons between higher and lower ‘spheres’ of thought were often made between white people and people of color, or in their language, between European or Anglo or civilized people and “savages” or “natives” or “primitives”. That is, the dual mind not only reflected two different modes of thought but was modeled after the ontological Darwinian hierarchy of the (civilized) mind and (savage) body. The dual mind models offered other easy comparisons

between men and women, upper class versus lower class, ableds in contrast to disabled persons, and even between humans and animals. While I will be primarily focusing on how these scientists framed the material mind in racist comparisons, like previous literature on scientific racism (e.g., Schuller 2017; Jackson & Weidman 2006), I will show how this racism was often compounded by, or endemic to, sexist, classist, ableist, and speciesist discourse.

Many philosophers and theorists of the Enlightenment and early industrial age based their models of the mind on racial difference (see the works of Rousseau, Locke, Kant, for instance); what changed in the nineteenth century was the intellectual shift towards scientific instrumentation and emphasis on precise measurements, such as reaction time tests. Ultimately, these tests served as templates for understanding differences between individuals and groups in terms of split investments of higher and lower spheres of thought. Higher spheres of thought being intelligence, foresight, self-command, impulse control, and moral sympathy, while lower spheres of thought being instinct, impulse, reflexes, habits, and hysterical emotions.

The differences between higher and lower spheres of thought may seem like a simplistic binary; however, such a binary not only formed the basis of early experimental psychology and psychoanalytic theory, it continues to be the basis of much of experimental psychology and behavioral economics in the late twentieth century to today, specifically in the form of dual-process theory (DPT).<sup>12</sup> Further, my argument is not that these terms to describe the higher and lower spheres of thoughts are not interchangeable, rather I am arguing that these terms were used to

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<sup>12</sup> Thaler and Shefrin (1981) quote Donald McIntosh (1969) in their first paper to illustrate self-control problems as dual-systems/dual-self problems. McIntosh's view of self-control is eerily similar to the law of economy as described by nineteenth century scientists of the mind: "The idea of self-control is paradoxical unless it is assumed that the psyche contains more than one energy system, and that these energy systems have some degree of independence from one another."

describe a material model of the mind that includes both “human reason” and “animal instinct” in people, and that there are important consequences for this line of discourse, such that higher spheres of thought tend to be associated with voluntary and deliberative action and lower spheres with involuntary compulsions and inability to self-govern. By using reaction time (RT) measures, psychologists attempted to delineate between individuals and groups in terms of who was capable of self-management. In the same way that certain behavioral economists (and other dual-process theorists) have sometimes characterized System 1 thinking as a lowly employee, and System 2 as the manager (Thaler & Sunstein 2008; Thaler & Shefrin 1981), the dualism of higher and lower spheres of thought ultimately rests on legitimating government over others.<sup>13</sup> In either case, we see new forms of boundary-work (Gieryn 1983) and the expansion of “psy expertise” (Rose 1998) into new jurisdictions (Abbott 2014), from management and marketing, to governmental and school administration (e.g., Richards 2010).

In sum, what I describe in this chapter is the shifting metaphors of human nature and the mind in psychological discourse; specifically, I will track the slippage of metaphor in these early texts from dual spheres of thought in the nineteenth to early twentieth century to dual-process cognition in the late twentieth to early twenty-first century. Following Mirowski (1991) and others, I will elaborate on the descriptions, models and worldviews of these scientists in order to contextualize and challenge their extended cognition through metaphor.

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<sup>13</sup> This can be seen in the works of behavioral economists when they discuss “nudge” behavioral policy (Whitehead et al. 2017).

## EVOLVING HABITS FOR THE ‘CIVILIZED,’ ANIMAL INSTINCTS FOR ‘SAVAGES’

*“The intellectual traits of the uncivilized ... are traits recurring in the children of the civilized.”*

(Spencer 1895: 89-90).

Herbert Spencer was a nineteenth century polymath who wrote extensively on evolution and civilization. Spencer believed the two were entwined and that one could inform the other. For instance, Spencer took it as fact that Europe was the apex of civilization, and that this supremacy must be explained by the natural principles of evolution. Spencer's view of evolution was one that saw the internal organization of organisms evolving to reflect and represent with ever higher fidelity (over time) the organization of their external environments; this evolutionary process reaching its extraordinarily high degree of sophistication in humans, but in Europeans in particular (Richards 2003). Therefore, through Spencer we see a view of the human as one with dual aspects. One civilized and the other animalistic. This would become the defining dichotomy of the human mind that later nineteenth and twentieth century psychologists would come to inherit and reconstruct in their laboratories.

For Spencer, the evolved mind of humans also included a hierarchy from senses via reflexes, instincts, habits, memory and imagination to reason, which ultimately were terms that made arbitrary distinctions in the spectrum of organic assimilation of learned experience. However, since the burgeoning role of reason has become the latest and most effective route for achieving this assimilation (between organism and environment) it entailed a changing balance in energy distribution. According to Spencer's hypothesis, energy was progressively withdrawn from the ‘lower’ parts of the thought and reallocated to the ‘higher’ levels. Since there is a scarcity of energy in the mind, it must be balanced and distributed in some way, with some people naturally

investing more thought energy into reason than having a quick reflex or certain instincts, as the “primitives” had done (Schuller 2017; Pettit 2013; Richards 2003).

Spencer’s understanding of the uncivilized, or “primitives” of the world was largely culled from the descriptions of indigenous folks by Spencer’s friends and other European scholars. As Spencer wrote, “primitive’s’ widely vouched-for superiority in sensory acuity and other lower functions directly reflected the continued commitment of greater amounts of energy to these more animalistic levels.” Further, “The dominant races overrun the inferior races mainly in virtue of the greater quantity of energy in which [the] greater mental mass shows itself,” (1876: 303). Spencer continues, “Many travellers comment on the unchangeable habits of savages,” (1876: 305); as well as their greater homogeneity; their impulsiveness—reflecting the greater role of reflexes (see Fearing 1964 for an overview)—and emotional simplicity, mental plasticity, and impulsiveness.

Spencer saw reaction time measures as one method for abstracting these differences between races (and genders). Specifically, he thought that the faster reaction time of “inferior races” and groups was a compensation for their inability to abstract or “generalize.” Spencer connected this idea of reaction time to cognitive processes and ability along with impulse control. Spencer thus contended that “savages” lacked certain key mental attributes (i.e., impulse control) needed for acquiring modern civilization (Richards 2010).

In contrast to Spencer’s armchair philosophizing, Charles Darwin made similar remarks using empirical methods when discussing the mental evolution from the uncivilized to civilized (i.e., Darwin’s chapters on mental powers and moral sense in *The Descent of Man*). Darwin also thought that measuring reactions and reflexes could be a way to understand inherited natural

differences between people, as well as a way to understand human inheritance from previous animal ancestors (Degler 1991).

Darwin's protégé, George Romanes, continued this line of research after Darwin's passing. Romanes was fascinated by the line of evolutionary development that could be compared from one species to another. Believing in a hierarchical notion of consciousness, wherein the higher up the evolutionary scale a species was, the more conscious and less reflexive or instinctive the species was. Romanes insisted on the higher consciousness of man over the lower consciousness of animals. However, Romanes did not only compare the consciousness of animals to humans, he also compared differences within the *Homo Sapiens* species. Romanes hypothesized that intellectually and developmentally disabled humans were closer to animals than civilized, intelligent humans, such as himself (Degler 1991). *The London Times* reported that Romanes displayed "savages, young children, idiots, and uneducated deaf-mutes" to show that "man and brute have much more in common intellectually, and perhaps, even, than is dreamt of" (quoted in Desmond and Moore 1994: 633). Thus, to scientifically study the evolution of consciousness, Romanes went on to examine the reflexes (and hence reaction times to stimuli) of intellectually and developmentally disabled humans to compare to the general population. Darwin and Romanes were seen as making a radical argument, for its time, by seeing animals as more sentient than previous models of animals as automata. While this is true, they also created hierarchies of intelligence, development, and moral sense that not only contrasted the psychology of human animals to nonhuman animals, but a psychological hierarchy within the human species. Moreover, they were more likely to perceive intellectual similarities disabled and indigenous people had with each other, as well as animals, than any of them had with white men.

The specter of the animal mind haunting the civilized continued in the making of a general experimental psychology that became increasingly popular in the late nineteenth to early twentieth century. For instance, using animals as comparative subjects to humans, as Darwin and Romanes did, would be especially influential to later behaviorists. In addition, Spencer's hypothesis and his advocacy of reaction time measures would be realized during this time. These early evolutionary approaches today continue to be used today in many fields of experimental psychology, as well as behavioral economics, in implicit and sometimes very explicit ways (as in the subfield of evolutionary psychology; e.g., Buss 2005).

#### REACTION TIME AS THE RACIALIZED UNCONSCIOUS

Before there could be an experimental psychology, scientists had to agree on a materialist model of the mind, one that not only fit with biological knowledge, but with physics as well. For instance, Hermann von Helmholtz and others, such as Etienne-Jules Marey, were proponents of the theory of energy conservation, which held that there was a single, indestructible, and infinitely transformable energy basic to all nature (see also Rabinbach 1990). This theory could then be "economized" in terms of "investments" of energy transformed into motion, creating a new approach to the mind and body that would eventually support a dual mind model of humans (as described later in this chapter).

Essential to understanding the amount of energy and effort distributed throughout the body and mind was developing a way to measure the effect of time on these physiological and neurological systems. The duration present in any physiological process, or the time during which the muscle remains inactive until it acts on the impulse communicated to it by the nerve, was in



Helmholtz's words, "temps perdu," time lost. This lost time, which consists of the relationship between duration and energy expenditure, was for Marey a basic component of the economy of the body (Rabinbach 1990). The time expended in any activity, or reaction time, is a function of the body's internal laws of energy and motion. Hence the connection between economy, time and the body leading to the importance of reaction time experiments in the nineteenth century.

Following Helmholtz, Marey, Angelo Mosso, and others agreed that biological time and body rhythms seemed to naturally regulate the pace of work and reduce waste in human labor. The "law of least effort" expressed the tendency of all organic life to find the shortest path to its goal; some psychologists even considered it to be a synonym of the "law of economy" or the "law of parsimony". The human species naturally attempted to preserve its mental and physical force, to conserve its psychic energy, and to act in conformity with the law of least effort. "Least effort" was the law of civilization, according to Theodor Ribot and others, and many psychological studies in the late nineteenth century and early twentieth century would come to support this notion (Rabinbach 1990).

Wilhelm Wundt, who was a student of Helmholtz, was influenced by his mentor to study RTs starting in the 1870s; Wundt engaged in this elaborate research program that aimed to understand human mental processes by measuring RTs before he moved on to conducting introspective experiments. James McKeen Cattell, a student of Wundt at Leipzig, estimated that about half of the experiments in Wundt's laboratory involved RT measurements during his time there (Privateer 2006; Richards 2010). Specifically, Wundt believed he could empirically measure the speed of conscious reaction, such as when a subject becomes aware of something, and the speed of unconscious reaction, like when a physical reflex occurs.

In France, Theodule Ribot, also tried to establish a similar foundation for the dual mind, emphasizing the will, which he called “the highest force which nature has yet developed—the last consummate blossom of all her marvellous works.” (Ribot 1894: 134). From his viewpoint, Ribot saw the function of the ego<sup>14</sup> as the coordinator of conflicting impulses and attention, or sensations which derived either from society via education or from the physiology of nervous impulse. This “complex psycho-physiological mechanism in which alone resides the power to act or to restrain,” gives central importance to the psychophysical force of the will, as mental pathology was symptomatic of an “enfeebled” or “fatigued” will.<sup>15</sup> Ribot turned to reaction time experiments to shed light on the fatigued will, which could be further utilized in the study “idiots,” “cretins,” “certain paralytics,” and conditions where the “speed of thought” was considered remarkably slow (Rabinbach 1990). Adding that the “laziness of savages is well-known.” and that “proofs and instances are so numerous that it would be idle to quote authorities.” (Ribot 1898: 37).

Ribot classified all of humanity into three divisions: the “superior active,” characterized by a “superabundance of force,” the “average” active, whose “capital of energy is so limited they are compelled to economize, and the “asthenics” whose “repugnance toward all effort, idleness, apathy and inertia were extreme.” (Rabinbach 1990). Ribot considered fatigue as an “impairment of the will” manifested apathy and, in extreme forms, by complete abandonment. He distinguished between those cases in which the intellect remains intact but cannot function and those in which the intellect is absent and “the impulse extends itself entirely to the profit of autonomism.”

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<sup>14</sup> The ego, a stand-in for willpower, could be overstimulated leading to fatigue (this is remarkably similar to contemporary models of willpower; e.g., Baumeister 2002).

<sup>15</sup> Ribot’s philosophy was considerably informed not only by Helmholtz and Wundt, but also Herbert Spencer—Ribot going as far as to translate Spencer’s *Principles of Psychology* into French (Nicolas et al. 2016).

The Turin physiologist, Angelo Mosso, seems to have agreed with Ribot, but gave this energetic-economized mind a more explicitly racial tint when he wrote, “Fatigue seems to consume our noblest qualities—those which distinguish the brain of the civilized from that of savage man.” Mosso further wrote that “When we are fatigued we can no longer govern ourselves, and our passions attain to such violence that we can no longer master them by reason.” Adding that “Education, which is wont to curb our reflex movements, slackens the reins, and we seem to sink several degrees in the social hierarchy. We lose the ability to bear intellectual work, curiosity, and the power of attention, which are the most important distinguishing characteristics of the superior races of man.” (1904:238). This last statement reveals a concern over mental work resulting in decreasing muscular efficiency, which would become a concern for psychologists and managers alike (Rabinbach 1990).

Ribot, like Charles Richet (who was a eugenicist), Wilhelm Wundt, and many other experimental psychologists of his time, believed in the dichotomy of desire and will (Rabinbach 1990). Desire represented the primitive form of affective life, whereas the will presented a higher form of material power that counteracted the negative effects of desire. Ribot claimed that desire “does not differ from reflex movements of a very complex kind.” In Ribot’s evolutionary schema of psychological evolution, the will presents the highest stage of physiological *and* moral development, while “desire marks an ascending stage between the reflex and voluntary conditions. Consciousness is adapted to the activities and needs of a species whose basic nature is acquired, structured, and fixed by the laws of heredity,” (Rabinbach 1990: 165).

Ribot’s theory and work shares uncanny similarities with the Law of Economy discussed above, as well as some of Sigmund Freud’s ideas of the mind. However, it is after reading the

reaction time research of Wilhelm Ostwald (Canales 2009) and Gustav Fechner, as well as the reflex and neurology work of his medical school mentor, Theodor Meynert, that would become the basis of Freud's psychoanalytic framework.

The predominant approach to reflexes during Freud's time was Meynert's schema. According to Meynert, the sense that we are physical and mental selves occurs because our perceptions and associations are directed by something he called the "will-impulse" —guiding us in the search for pleasurable outcomes and the avoidance of painful experiences. The way in which this model became influential on Freud comes from Freud's time at the General Hospital as Meynert's student. Meynert himself was inspired by the work of Marshall Hall, another physiologist.<sup>16</sup> Hall described the notion of reflex action, which put the issue of "unconscious action" in front of the scientific community, while also theorizing about the biological basis of learning. Hence, the physiological foundation of psychoanalysis (in terms of unconscious action) and behaviorism (in terms of learning capacity) was established before the 1850s (Sulloway 1992).

Freud did come to challenge some of Meynert's assumptions and went on to create a new theory of attention. For Freud, the total quantity of attention cathexis available at any one time is limited. The amount of attention required by an object of perception or thought depends on how it is elaborated in cognitive activity (Sulloway 1992). In other words, Freud's theory of attention was an effort theory, with focused attention, which has a slower reaction time, and requires more energy and time than a less focused, quick reaction time.

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<sup>16</sup> Hall was himself following the work of Charles Bell and Francois Magendie.

Reaction time studies were used in these cases as a way of measuring the strength of some association within one's brain (rather than an inherited reflex to a particular stimuli). Here is where the physical and semiotic meet for the psychoanalytic theory. What is particularly insightful about this approach is that it shows how little has changed in cognitive scientific theory. Today, reaction time is still a way of measuring the strength of some association within one's brain; however, the precise neural mechanisms have changed, along with what kinds of associations are tested in the lab. And like the theorists that influenced Freud, he also made many claims based on his theory of attention regarding differences between men and women, as well as between races in terms quite in-line with the racialized law of economy discussed above (e.g., Frederickson 2014). This can be seen, for instance, in Freud's *Totem and Taboo* that takes savages and neurotics as its dominant analogy. Moreover, the notion of deferred gratification is mentioned, sometimes implicitly, throughout much of Freud's work, and is perhaps most explicit in Freud's most sociological work, *Civilization and its Discontents*. In other words, Freud and others brought racialized thinking of self-control into psychology from the very beginning of the field, reinforcing the dichotomy between normal and abnormal individuals and groups. These thoughts would become influential in later experimental psychology, such as in behavioral economics, as well as certain dual-process models, but not before behaviorist and cognitivist interventions in psychology (Ainslie 1992).

### THE MENTAL COLOR LINE

While Freud's theories were based on a theoretical cohesion between evolution and energetics, other psychologists were exploring more operational ways of connecting mind and reaction time to other higher order thought processes, such as intelligence. Although Aristotle and

others spoke about the connection between the speed of response and intelligence, Wundt and Francis Galton were the first to study the two scientifically (Privateer 2006). Wundt and Galton did not explore the metaphoric and ideological implications of using industrial terms like “speed” and “work” to describe brain activity, nor did they explain how such response activity translates into intelligence. “Synaptic efficiency” was Galton’s term differentiating the “quick” and intelligent from “slow” and poor test performers (Privateer 2006: 199).<sup>17</sup> “Galton who found in the personal equation the much sought-after link between physical and mental qualities. Convinced that ‘the magnitude of constitution,’ Galton claimed that ‘obvious physical characteristics were correlated with certain mental ones.’” (Canales 2009: 47).

From the physio-mental-energetic philosophy and reaction time experiments carried out by Galton, Helmholtz, Wundt, and Fechner, we come to find two distinct scientific paradigms that henceforth developed. One, which will later be called experimental psychology, and the other which will become known as psychoanalysis (as discussed in the previous section). The former largely develops out of Wundt’s own lab, starting with his American student, James Cattell. Cattell, who was also influenced by the works of Herbert Spencer and Francis Galton, is central to this story as he not only reinforces the importance of RT tests as an experimental method in psychology when he returns to America, he also connects RT tests and intelligence tests to racial

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<sup>17</sup> Galton also coined the term “eugenics”, meaning well-born, and created it as a scientific discipline. Galton is also known for coining the phrase “nature versus nurture”. Importantly, Galton connected fast RT measures to high IQ, as did Arthur Jensen. However, Bache, following Spencer, hypothesized that fast RT measures would be correlated with low intelligence. This shows the interpretative flexibility of RT measures across time and space.

difference and white superiority. In many ways, Norman Triplett and Joseph Jastrow, as previously discussed, supported these connections in the Americas as well.<sup>18</sup>

In 1883, Cattell went to Leipzig to become Wundt's assistant, and became the first American to publish a dissertation in the field of psychology, "Psychometric Investigation", making it no surprise (to us today) that Cattell went on to coin the term "mental tests." At Leipzig, Cattell applied chronometric methods to simple psycholinguistic tasks, such as object naming, color naming, and reading. Cattell's "psychology of individual differences"<sup>19</sup> and focus on mental tests was closely related to his views of evolution and eugenics. For instance, Cattell went on to contribute to mental testing in the United States and published nine articles discussing human reaction time rates and individual differences between 1883 and 1886 (O'Shea & Bashore 2012).

The first psychology experiment in the US however, was a reaction time experiment and was conducted by Joseph Jastrow in collaboration with American pragmatist philosopher, C.S. Peirce. For these researchers, reaction time was a way to understand the energy balances of the mind, habitual behavior and mendacity of the subject. Jastrow noted differences between men and women and whites and people of color in these cases. Like Triplett, Jastrow believed that the law of economy inscribed "a condition of progress in the individual and the race," which "rendered the majority of mental functions automatic, easing perceptual burden. If reliance on these habits was

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<sup>18</sup> These psychophysical instruments also traveled outside the laboratory. For instance, in the 1880s, Galton, created a station for penny mental tests for visitors to the Natural History Museum in South Kensington, while Jastrow organized a psychology exhibit for the World's Columbian Exposition, which opened in Chicago in 1893 (e.g., Green 2018; Pettit 2013; Richards 2003).

<sup>19</sup> This is what we now call differential psychology, and it has its origins in both the work of Cattell and Galton. Differential psychology is the broader study of individual differences between people, but personality psychology is seen as a closely related field, one that developed out of differential psychology.

the evolutionary inheritance of the civilized races in the aggregate, it was the free individual's obligation to struggle against comforting habits," (Pettit 2013: 63). As we shall see, this belief in a law of economy distributed across two spheres of thinking processes continues in the works of behavioral economics and implicit social cognition. Much like Jastrow, these contemporary psychologists believe there are some people who act habitually and are prone to "irrational" thinking, and people who can think more deliberately and independently, just as the scientists themselves do.<sup>20</sup>

In the 1890s, a paper in the *Psychological Review* claimed to confirm Spencer's hypothesis. The author, R. Meade Bache, measured reaction time and found that Black and American Indian subjects had faster reactions than whites. Similar differences in terms of intelligence and affective response were found, with white men being the most intelligent and just the right amount of emotional development (compared to white women who were too emotional, and other races who possessed less intelligence and affective response; Schuller 2017). These differences were usually found not just by the use of reaction times, but were also studied via physical traits, such as phrenology and physiognomy (Tucker 1996). It is not until genetics and neuroscience that we once again see individual differences studied in a physiological way, for instance in terms of genetic deficiencies and brain underdevelopment. These physiological markers are certainly important when understanding their use in a coordinated fashion with behavioral economics (BE) and policy informed by BE.

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<sup>20</sup> For more on how psychologists have modeled certain cognitive functions after their own, see Cohen-Cole (2014) and Pettit (2013).



Bache begins his article with a rather rambling evolutionary overview and an invocation of a statement by Spencer who ‘somewhere’ says that the ‘savage’ is a ‘creature of “secondary reflex movements”’ (p. 479). The ‘automatic’ preceded the ‘intellectual condition of man’. From this we may infer that ‘lower men’ will have faster reaction times (RT)<sup>21</sup> than ‘higher’ ones because the ‘law of compensation’ (or law of economy) tells us that intellectual growth will be accompanied by a diminution in ‘automatic’ activity. Furthermore, Bache (1895)<sup>22</sup> as a conclusion based on the shorter reaction times of “inferior races,” stated that the “popular notion that the more highly organized a human being is, the quicker ought to be the response, is true only of the higher sphere of thought, not at all of auditory, visual or tactile impressions.” This compounds the notion that racial groups differed not only in physical characteristics (this was still the time of physiognomy and anthropometrics after all) but also in the organization of their minds, that whites were prone to “higher spheres of thought” compared to people of color, and that people of color were less likely to learn new thoughts or habits and instead react quickly to their base impulses. The focus on habits becomes central in understanding a person’s ability to learn and adapt to their

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<sup>21</sup> Psychologists tend to use three basic kinds of reaction time experiments (Luce 1986): In ‘simple reaction time’ experiments, there is only one stimulus and one response. For instance, ‘X at a known location,’ ‘spot the dot,’ and ‘reaction to sound’ would all measure simple reaction time. In ‘recognition reaction time’ experiments, there are some stimuli that should be responded to (the ‘memory set’), and others that should get no response (the ‘distractor set’). Subjects are expected to quickly react to the one correct response. In ‘choice reaction time experiments,’ the user must give a response that corresponds to the stimulus, such as pressing a key corresponding to a letter if the letter appears on the screen, for example.

<sup>22</sup> Bache (1895) also thought that it had been well established that women had faster reaction times than men, and that the difference was “in strict accordance with the fact that the brain development of men, as compared with that of women is greater, even when taking into account the relatively greater weight of normal individuals of the male sex compared with that of normal individuals with the opposite one.” (482).

environment. This forms the basis of early experimental psychology, even outside of simple RT studies.<sup>23</sup>

Psychological studies, such as Bache's, show the intensified interest to use race as a variable and connect it as a determining factor in the development and use of other mental faculties, such as intelligence. In many ways, psychology moved further in support of the growing field of eugenics. While the history of the entanglement of psychology and eugenics has tended to focus almost entirely on intelligence and mental disability, the history described in this chapter has shown the simultaneous interest in research concerned with reaction time, impulse control, and explicit differences between races. It is this history that we now turn to.

#### EXTENDING THE RACIAL LABORATORY

As mentioned previously, another use of reaction time tests during this period was that of IQ testing. It was Francis Galton (1883) and James McKeen Cattell (1890) who first attempted to create a measurement of intelligence through IQ testing and RT testing (Jensen & Munro 1979). These tests were apparently abandoned early on; however, it is important to understand their effects on more contemporary reaction time-IQ measures, particularly when we look at the mid-twentieth century works of Arthur Jensen, Richard Herrnstein, and Walter Mischel (as we shall do in a later chapter).

Beyond these tests themselves, their findings were interpreted through new developments in statistics. In fact, these new statistical tests were invented for the very purpose of interpreting

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<sup>23</sup> Various forms of funding supported race psychology research, including the Race Psychology Fund, the Carnegie Commission, the Pioneer Fund, and later, from Naval research funding (Tucker 1996).

these tests. Correlation, regression, the chi-square test, and multivariate analysis—all of which have become pillars of modern statistics, developed out of the work of Francis Galton, Karl Pearson, Charles Spearman (who studied under Wundt), and other English mathematical statisticians in the early twentieth century (Porter 2006; MacKenzie 1981). Pearson was not only a protege and biographer of Galton but was also a eugenicist who used his mathematical expertise to defend racist and classist ideas of intelligence and fitness. Pearson’s statistical tests can still be found in contemporary psychological research journals.

These developments in statistical testing as a form of epistemological authority lent support to eugenic ideas and policy. Specifically, IQ tests were used to test mental fitness at immigration detention centers (Privateer 2006).<sup>24</sup> While RT was not explicitly part of this testing, mental speed was heavily correlated with intelligence (Tucker 1996). Like Southern literacy tests for voting<sup>25</sup> were sometimes timed, time limits also played a factor in IQ test outcomes (Tucker 1996). To be “mentally slow” was seen as an intellectual disability, while being impulsive was another factor that determined normalcy and citizenship. In other words, the interpretations of mental speed and intelligence changed over time and depended on the setting.

Another extension of reaction time measurement and the dual mind was the industrial research on fatigue during the nineteenth and early twentieth centuries. The sociologist, William Davies (2015), suggests this research was itself a reaction to an “emerging concern among industrialists at the time, that workers were suffering from fatigue, and that the bourgeoisie’s

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<sup>24</sup> The most popular use of IQ tests was for the US army (Herman 1996), as well as in schools (Richards 2010) and for immigrant screening purposes (Dolmage 2018).

<sup>25</sup> See for instance, the 1964 Louisiana literacy test, which had a ten-minute time limit, in the Civil Rights Movement Archive. See also Jones & Williams (2018) for more on literacy tests, and other “technologies of disenfranchisement, in the US.

principal source of wealth, namely labor, was gradually being depleted.” (p. 50). Further, Davies (2015) argues that this economic concern in industrial countries influenced the work of both Richard Jennings and Gustav Fechner. For Jennings, the longer one spends laboring on a task, the harder it gets— thus implying that people with shorter reaction times are better suited for manual labor. As the nineteenth century wore on, this worry led to an explosion of strange experiments on fatigue and possible ergonomic solutions (Rabinbach 1990). Specifically, this led many industrial researchers to test workers’ reaction times, and to note differences between groups of people (such as the finding that women had slower reaction times compared to men; Canales 2009) and between individual workers in this regard. Arguably the first to do this kind of industrial reaction time research was Frederick Winslow Taylor.

Taylor, in his book on scientific management, which became the basis of social engineering in the United States, referred to the experiments on mental chronometry as a reason for supposing that the measurement of time might give an objective basis for development of task analysis in industrial settings. Many others followed Taylor’s RT work, including Hugo Munsterberg, and the French scientist and soldier, Jean-Maurice Lahy. After co-founding one of the most important reaction time research centers, Lahy interrupted his industrial reaction time research to study the reaction times of soldiers and aviation pilots during WWI in order to make war “Taylorized” (Canales 2009).

Industrial management and eugenics were related to each other during this time for their views of the dual mind leading to a kind of policing of intellectual disability. In *No Right to be Idle*, Sarah Rose (2017) points out that employers in the early twentieth century began to demand workers who had “intact” minds and bodies. This was happening at the same time as hundreds of

workers labeled “feeble-minded”—a new term at this time that had become synonymous with the inability to function in everyday society—were moved into paid positions, such as domestic servants, laundresses, seamstresses, and farm laborers. These changes led to a further split in the economy, reasserting the difference between the deserving and the undeserving, and a manufactured knowledge economy that not only privileged “intellectual labor,” but also rewarded laborers who could plan and save for the future, as well as the ability to self-manage. Psychology thus played a role in the management of workers and the general population (for an overview, see Kamin 1974). The similarities, continuities, and differences between these efforts and the nudge policy informed by BE, will be the focus of the penultimate chapter of this dissertation.

Psychology as a discipline was radically challenged during the time of early eugenics and industrial management, as were the psychological theories of Wundt, Freud, and Galton. Perhaps the biggest challenge came from the behaviorist school of psychology.

## FROM REFLEXES TO RACIALIZED MARKETING

The relationship between race and mind slowly shifted in the early twentieth century, as did the shift away from polygenism, or the idea that each race of humankind came from different origins, to monogenism, the idea that all humans share the same origin point (and were thus, essentially, one race). One of the forces behind this shift was a gradual turn away from heredity to environmental influences. Implicit throughout this chapter is the debate between hereditary versus environmental influences on behavior. The latter was usually associated with anti-essentialist views of race, for instance in the works of Franz Boas, W. H. R. Rivers, and others. Many of these scholars would come to attack what they saw as scientific racism; however, this did not lead to the

‘environmentalist’ side completely taking over the intellectual field, nor did it exclude them from certain forms of racial prejudice and ethnocentrism (Degler 1991; Richards 2010).

The chief movement in early experimental psychology at this time, was also the most “environmentalist” school of psychology, known as behaviorism. Behaviorism included, but also moved beyond simple, reaction time tests, and was greatly influenced by the laboratory settings of psychophysics, the attention to the relationship between organism and environment in Darwinian biology, and the use of animal models following the comparative psychology research of Romanes, Thorndike, and others.<sup>26</sup>

Behaviorism did have a RT research paradigm during this time period, but it was primarily as a direct descendent of RT research, i.e., stimulus-response (S-R) research. While most behaviorists were focused on environmental factors when measuring RT, the idea of a law of economy would still pervade much of this work (see for instance, the behaviorist work of McDougall, Thorndike, and others). For John B. Watson and Ivan Pavlov, timing was essential for gauging responses to stimuli, but there were some important differences between this kind of research and that of, say, the RT experiments of Wundt. In behaviorism, the focus was more explicitly on learning and habit formation. Thus, classical behaviorists were interested in repeated patterns of reactions, rather than reaction to a single touch or question. In other words, they were more interested in whether an organism could learn to adapt to its environment, that it could achieve its goals, rather than the precise timing of a single reaction. Nonetheless, the idea of a

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<sup>26</sup> Animal studies in the early twentieth century, such as R. M. Yerkes’s experiments on cats and rats, concluded forcefully that “savageness” or “killing instinct” was instinctive (see for instance, Yerkes and Bloomfield 1910).

hierarchy and economy of habits and reflexes is central to all of this work (Degler 1991; Richards 2010).

For John B. Watson (1916), reaction time was a way of understanding habit disturbances. This is one of the only times that Watson connected his work positively to Freudian psychoanalysis, as both were interested in increased reaction time between a stimulus word and a response when it came to understanding psychopathology (Rilling 2000). Importantly, Watson saw reaction time as being a motor function that could be conditioned. Also in this article, Watson made an assertion of the human as a species with primitive reflexes thereby reasserting an evolutionary dualistic view of psychology between higher and lower functions, as his intellectual hero William James did. Specifically, both Watson and James believed that habits were the building blocks of all complex behaviors and even higher mental processes. Watson argued that this “does not mean that one has to resort to the ‘voodooism’ of mental constructs like ‘conscious’ and ‘unconscious’—these phenomena can be more efficiently examined by the behaviorist strategy of differentiating between the “verbalized” and the ‘unverbalized.’” (Morawski & Hornstein 1991: 114). This is the rationale that Watson gave for believing that behaviorism should focus on the lower the functions of the mind by studying a “less complex” organism, i.e., white rats, in place of humans. Thus, while Watson implicitly endorsed a distinction between two different processes of the mind, he did so in a less explicit way compared to the psychologists we have discussed earlier in this chapter.

In 1920, Watson was fired from his position in the Psychology Department of Johns Hopkins University over a personal scandal, leaving him as an outcast from academia. Watson was not unemployed for long before being hired by the J. Walter advertisement agency. While he

worked there, he implemented many personnel management policies, as well as researching and enforcing new advertising practices and strategies (Buckley 1982). One such marketing strategy included conducting substantially more research on demographic information on potential buyers. For instance, when the agency was hired to promote Johnson and Johnson's Baby Powder, Watson carefully designed their marketing campaign for a "demographic cross-section that was selected on the basis of class and race," (Buckley 1982: 214).<sup>27</sup> Black populations were "decidedly a questionable market," and in conducting market surveys, the field investigators "did not visit slum districts." This led to Watson presenting his sales proposal as one targeting the young, white, upwardly mobile middle class, presenting this demographic with advertisements that sold ideas of "purity" and "cleanliness," (Buckley 1982: 214). What this tells us is another way in which economic behavior and dual thinking come together to show who is capable of morality and identifying with the hegemonic class.

Watson's marketing work further established the dominance of behaviorism in applied settings. While Watson was no longer a professor during this time, his approach to psychology would have a lasting influence, particularly when it comes to social engineering and applying behavioral modifications inside and outside the laboratory. The desire to expand psychology as a tool of social engineering can be seen in the work of behavioral economics today (Heukelom 2014), particularly when we discuss nudge theory in a future chapter. Furthermore, the doctrine of behaviorism asserts that behavior is best explained by identifying the links between stimulus and response, while theories on judgment and decision making, proposed by Kahneman, Tversky, and others, often focus on identifying the cues that motivate (or bias) people's decisions and the

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<sup>27</sup> Watson also supported eugenics, at least at one time, and likely was influenced by eugenicist ideals of repressing sexual urges and control. For more on these aspects of Watson's history and thought, see Yakushko (2019).



resulting deviance from normative prescriptions. The missing piece explaining the transition from behaviorism to behavioral economics will be discussed in the next section of this chapter.

### DEPRIVED & DEPRAVED MINDS

From the 1930s to the early 1960s, psychoanalytic theory was incredibly influential in a variety of fields, though primarily in clinical psychology. Many experimental psychologists during this time also referenced Freudian thought, including the behaviorist Hobart Mowrer, as well as the developmental psychology work of Walter Mischel.<sup>28</sup>

Following his earlier work with Clark Hull and continued work with the Yale Institute of Human Relations, Mowrer continued his Freudian-informed behaviorist work and became interested in how organisms “ready” themselves prior to reacting to a stimulus (what he called preparatory set). As Lemov (2005: 97) wrote, “If earlier behaviorists had removed ‘will’ from humans, Mowrer in effect delivered ‘will’ over to the environment itself, via the machinations of the experimenter. Thus, Mowrer’s ‘preparatory set’ made strides toward a true laboratory model of “an environment relentlessly suffusing and flooding an organism, ” (Lemov 2005: 97). This describes the fact that Mowrer’s work went beyond simple strings of stimulus-response reactions but revealed and exploited a feedback system of anxiety. Mowrer’s work was framed in terms of

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<sup>28</sup> Psychiatrists during this period were also excited by the prospect of combining Freud with behaviorism. For instance, according to Zaretsky (2004), White and Jelliffe (1915) stressed the ways in which it could help prevent delinquency and addiction, while likening analysis to eugenics in this regard. As Zaretsky (2004: 83) writes about psychiatry during this time, “[psychiatry was] Largely rewritten in the language of behaviorism after the publication of J.B. Watson’s *Behaviorism* in 1914, the American version of Freud was portrayed as a hard-boiled scientific psychology.”

Freudian reduction, hedonistic pain avoidance, and behavioral deficits, and came to influence learning theory and psychology more broadly.<sup>29</sup>

Central to Mowrer's solution to behavioral deficits, deficits such as self-control, included developing symbolic understanding and language comprehension. In his research, Mowrer found that reactions and reaction times differed depending on the presence of symbols. Mowrer's work on self-control problems in juvenile delinquents influenced a great deal of research on self-control problems and criminal behavior in the mid-twentieth century (Cf. Mowrer & Ullman 1945).<sup>30</sup> Much of this research was conducted on African American populations, who were seen as having less self-control than their white counterparts (Raz 2013). Mowrer's research on self-control problems would also influence behavioral economists in the last decades of the twentieth century.

As I will discuss further in another chapter, Walter Mischel's research on self-control was very much influenced by the work of Mowrer. Like Mowrer, Mischel believed that Freudian thought could be used to explain his research findings. For instance, in the case of his 1958 study, Mischel argued that children are driven more by the "pleasure principle" over the "reality principle". With the popularity of cognitive psychology in the 1950s-1990s, Freudian thought became less popular amongst experimental psychologists, beyond the exception of George Ainslie and a handful of others.

Cognitive psychology research from the 1950s and 1960s depended on these previous models, while "improving" upon them. Cognitive psychology took the energy-conservationist

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<sup>29</sup> "Mowrer-style deficit theories of motivation, unified psychology," according to Mills (1998: 180).

<sup>30</sup> Previous concerns over delinquency, as well as general criminal behavior led certain psychologists to create studies to detect such behavior and analyze criminal justice proceedings. For instance, Hugo Munsterberg's 1908 essay on eyewitness testimony, as well as Galton's, Cesare Lombroso's, and even Carl Jung's work on detecting criminality, in part leading to lie detection tests and personality psychology (Canales 2009; Richards 2003).

model of the mind and put it into terms of information processing (Boden 2008). The notion of measuring information first entered psychology in RT studies. It became possible to study RT as a function of the information in a stimulus array—how much longer does it take to react to one of eight possible choices than to react to one of four, one of two choices, or in the absence of any choice. This approach would be operationalized into reaction time research and computer processing models. It is not until the 1980s and 1990s that a dual-process model of reaction time is developed and largely accepted by the field, a model that translated the work of Spencer, James, Galton, Wundt, Mowrer and others into the language of cognitive psychology while ignoring the racist origins of such a dual model of the mind. As I will show in the next chapters, these changes hardly took place in the isolated laboratories in universities, but made significant impacts in labor management, consumer marketing, and public policy.<sup>31</sup>

## CONCLUSION: FROM MENTAL ECONOMY TO BEHAVIORAL ECONOMICS

This is what happens when ideas travel, when they are intentionally and unintentionally hidden from their origins. To track the development of the dual mind, and its links to intelligence, foresight, energy regulation, and evolutionary fitness, is to reveal the cultural and scientific assumptions we make about our contemporary minds. What makes these values difficult to track is because they became reified in measures, tests, instruments, discourse, and standards. As we

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<sup>31</sup> I primarily have focused this chapter on Americans and Europeans who studied reaction time, reflexes, and the unconscious. While they were certainly the majority of scientists studying these topics, a few scientists in the Soviet Union conducted similar RT studies as well. These psychological concepts were also more hotly contested in these areas and rarely involved differences based on race, likely due to differences in sociopolitical contexts and relationships to colonialism. For a more comprehensive review of this work, as well as the influence of Marxism on behaviorism and psychoanalysis in the Soviet Union, see Pavon-Cuellar (2017).

have seen the importance of reaction time as one such measure has its origins in many different research programs and paradigms between 1850-1950, from psychophysics, to comparative psychology, differential psychology, industrial psychology, and psychoanalysis. While the reaction times became a central measure of experimental psychology, even for today (i.e., the IAT, etc.), the initial development of RT measures did not follow a unilateral, progressive development, but was used to test and elucidate different aspects of the mind and behavior. Ultimately, the mind was made into an energy-scarce organ, and that scientific measurement, hegemonic discourse, and colonizer values, remain implicit in contemporary psychology.

A Eurocentric moral philosophy based on population control and resource (including labor, intelligence, and mental energy) scarcity was intrinsic to how natural philosophers and scientists in the nineteenth century understood human nature and human differences. Instead of a linear causal history of science, what we see is a number of scientific fields influencing one another at different intersections of thought. We can, however, see some line of thought being traced from philosophy and political economy to biology and physiology, which included findings and theories that were all supportive of interpretations of the dual mind that we see later in psychophysics, experimental psychology and economic theory; ultimately calculating human differences and categorizing them into different value points (IQ, RT, discount rates, etc.).

The consequences of the dual mind are as serious as they are ubiquitous in our time, this neoliberal age. It is no wonder then that one key aspect that differs today from nineteenth century psychology is the ever so slight shift from group differences to individual differences, as well as shift from seeing race as a kind of deficit to seeing racial prejudice as a psychological pathology (Gilman & Thomas 2016). Despite these shifts, the inherent links between race, animality,

automatism, and disability remain (Jackson 2020), just as the continued erasure of slavery, colonialism and the debt of reparations persist as ghostly absence in most of the current psychology and economic literature. Of course, scientists<sup>32</sup> are not to blame for all of this inequality, but we may ask how these models misrepresent reality and reinforce power relationships. During this anthropocene (or capitalocene: Haraway 2015) and regime of austerity, we may ask how the reduction of (natural and social) resources might impact the “energy-balances” of the mind for the greater populace. How can we understand differences in cognitive load and ability without taking these greatly influential factors into account? What happens to our analyses of the mind and our conceptions of mental health when we take into account factors such as environmental racism, food apartheid, the racialized prison-industrial complex, medical apartheid, hypersegregation, wealth and educational disparities?

These questions lead us to reconsider the mind as merely another reification for a larger social process, one that involves not only the regulation of certain resources, but a social closure of time; that is, how certain groups of people today are allowed to plan and invest for the future, while others are kept from such affordances. Such a split would explain different regimes of rationalities, depending on racialized attributes, socioeconomic class, etc. Time here being so entangled with energy and mind that there becomes, as a result of such social closure, groups of people assorted into different balances of “mental energetics”, leading to an increase in splits between people, culturally, as well as in terms of work.

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<sup>32</sup> Of course, what counts as science or who counts as a scientist, is political. Since education and science was largely segregated for this portion of time in the US, Rusert (2017) argues that we instead should look for forms of “fugitive science” from African Americans who were formerly enslaved, for instance. See also Guthrie (2004) on the history of race psychology and the refutations from Black psychologists in the twentieth century.

A dual mind is still one of individualized existence premised on rationalizing itself and others, where one has to be constantly measuring and recording reactions to stimuli (as in the quantified self), and account for balances of mental energy (as in mental fatigue) and the allotment of other resources (as in rational choice theory). Perhaps it is time to rethink this model of the self, and instead imagine possible forms of collective resistance and change.

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**Table 2.** Typical Features of Dual-Mind Models, 1880s-2020s (adapted from Valasek 2021):

<u><i>MIND 1 (or System 1)</i></u>	<u><i>MIND 2 (or System 2)</i></u>
Low cognitive load	High cognitive load
Nonconscious attention	Conscious attention
Evolved early	Evolved late
Similar to animal cognition	Distinctively human
Impulsive behavior	Controlled behavior

## Chapter 2

### TEMPORARY UTILITY: Racializing temporality in economic models

The history of economic thought, much like the history of psychological thought that we explored in the previous chapter, is one of dichotomous thinking and the belief of self-command or interest to overcome one's passions. This conflict view of dueling selves becomes the basis for much economic theory (Davis 2003); for instance, intertemporal choice and consistent preferences. That is, both modern psychology and modern economics maintained the view that humans (or agents) should use their will and intellect to overcome immediate bodily desires. Why this characterization can be seen in today's interdisciplinary field between the two, i.e., behavioral economics, I will be arguing that such a viewpoint is similarly sustained in oppressive and bigoted intellectual movements, such as eugenics.

We cannot understand the intellectual moves made by economists (creation of concepts, decisions over weighing of utility, what problems economists should try and solve, etc.) without understanding the racial context of knowledge production. The central intellectual problem that the economists discussed in this chapter is one of time preference or intertemporal choice. This problem has a long history, but I will be discussing its precursor concepts in political economy from the nineteenth century into its transition as a formalized model in the first half of the twentieth century. Intertemporal choices are decisions that involve trade-offs among costs and benefits occurring at different times; that is, for economists, it matters how much one values something at one point in time compared to other points in time.<sup>33</sup>

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<sup>33</sup> As one economist put it, "The conventional analysis of intertemporal choice takes the view that the effect of delay on the subjective value of future outcomes can be captured by a discount function (or rate), which plays the same role in intertemporal choice as the probability weighting function does in risky choice," (Read 2003: 2).

The problem of time preference for economists did not start out as a model of individual choice; instead, issues of temporality moved to the forefront due to race, sex, and class conflicts.<sup>34</sup> The political economy of the eighteenth and early nineteenth centuries was generally more concerned with problems of large groups of people and nation-states than individuals. The shift toward individual models of discount rates was the result of these debates around industry, consumerism, welfare, heredity, reproduction, family, education, law and colonialism. Since it was not until the later part of the nineteenth century that psychology and economics were investigated as distinct disciplines, political economists before this time generally thought of economics as being as much about psychology as it was about resources. Moreover, the introduction of time and scarcity into neoclassical economics were not purely the result of evolutionary biology and physics but were first influenced by very real political problems of Europe and America.

This chapter, which goes from the late 17th century to the 1940s, is structured by the following: first, we will explore the history of intertemporal choice in economic thinking as described by behavioral economists. The point of examining the history that behavioral economists give of their own discipline allows us to see what they have left out and perhaps answer why they write their own history in certain ways.<sup>35</sup> While I am principally focused on the early economic thinkers that behavioral economists reference in their work, the overall purpose of this chapter, like the previous and the following chapter, is to show how the concepts used by behavioral economists today (such as intertemporal choice) developed in the context of scientific racism. Put

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<sup>34</sup> Note that while there is some variability in the meaning of race, as well as categories such as “savage” and “primitive,” for these economic thinkers, the point is that these models created a hierarchy in terms of ability to self-govern and to plan for the future.

<sup>35</sup> That is, while I am principally focused on the early economic thinkers that behavioral economists reference in their work, the overall purpose of this chapter, like the previous and the following chapter, is to show how the concepts used by behavioral economists today (such as intertemporal choice) developed in the context of scientific racism.

differently, by uncovering the racial assumptions early economic thinkers used to describe intertemporal choice, I show how later behavioral economists repressed this context when establishing the historical precedents of their field, allowing them to continue a paradigm of “unequal competence” (Levy & Peart 2005). Second, we will go back to the supposed “father” of economics and (according to behavioral economists) economic psychology, Adam Smith, as well as the other Scottish enlightenment thinker who is cited by behavioral economists, David Hume. By going back to the “beginning” of economic psychology, we can understand the political and racial context for Smith’s and Hume’s views on economic agents. The third part of this chapter will look at the economic psychology expressed by Thomas Malthus. While Malthus is rarely mentioned in reference to behavioral economics, he is essential for understanding the links between land, population, scarcity, and hedonistic psychology that follow in later parts of this chapter. The following two sections of this chapter examines the role of colonialism and slavery in the making of utilitarian philosophy, associationist psychology and abstract economic theory.

In the next section, we will look at how economic thought near the end of the nineteenth century became significantly influenced by physics and psychophysics. In contrast to most histories of this time period, I argue that this shift toward a psychological model of utility<sup>36</sup> was in part influenced by racial concerns. The next two sections elaborate on the connection between neoclassical economics and racism, most notably through eugenics. After those two sections, we will look at the supposed shift away from psychology in economics that is so often reported in the history of economics, but is actually not quite accurate; instead, we find economists arguing over psychology in reference to utility, discount rates, and race, with some economists looking toward

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<sup>36</sup> Arguably all models of utility are psychological, but herein lies the supposed split between philosophical psychology and scientific psychology. Prior to the second half of the nineteenth century, there was not much of an experimental approach. So, whereas Jeremy Bentham had primarily a philosophical or folk psychology approach to utility, Francis Edgeworth’s theories of utility relied upon psychophysical and psychological experiments.

the new scientific psychology of behaviorism to support their views, and others that argue that “economic man” should remain an abstraction. It is not entirely the case that the economists who favored the use of psychology in economics were racists, and the opposing camp was not; however, as we shall see, there does tend to be a stronger link between psychologized economics and explicitly racist thought for many of the economists of this period. This section is followed by the conclusion, which will put this chapter in context with the other chapters of this dissertation and connect back to the overall history of behavioral economics.

### “DUELING” PASSIONS

As we saw in the previous chapter, there was an explicit link in late-nineteenth-century psychology between habits and self-command. Habits were seen as largely unconscious, while self-command involved going beyond habits to reach new heights of intelligence and creativity. Implicit in all of this is the kind of entrepreneurial thinking that has so often been the basis of economic theory. It is my thesis that this incomplete history connects to the more distant past and the more recent past. The former through the works of political economy and the latter through the works of behavioral economics. This is not just speculation but can be found in the works of behavioral economists themselves.

The earliest historical connection that behavioral economists have made between contemporary dual-process (or dual-agent) models in economic history is through the works of Adam Smith (for an overview of dual-process theory, or DPT, “mapped on” this history of economics, see figure #1). It is certainly true that Smith wrote about passions and present bias, his views on economic behavior should be understood in the context of his work. In addition, we should also pay attention to Smith’s countryman and friend, David Hume. It is rather odd that



Hume is less talked about as a proto-behavioral economist as Smith is, given that Hume also wrote about psychology and political economy, including present bias.<sup>37</sup>

According to Ashraf, Camerer and Loewenstein (2005), Smith offers up a prescient model of hyperbolic discounting (or myopia) and the conflict between dual-self (as in the planner and the doer model in Thaler & Sunstein 2008). As Ashraf et al. stated (2005: 133),

Smith (1759 [1981], IV, ii, 273) viewed the passions as largely myopic: “The pleasure which we are to enjoy ten years hence, interests us so little in comparison with that which we may enjoy to-day, the passion which the first excites, is naturally so weak in comparison with that violent emotion which the second is apt to give occasion to, that the one could never be any balance to the other, unless it was supported by the sense of propriety.” In contrast, “The spectator does not feel the solicitations of our present appetites. To him the pleasure which we are to enjoy a week hence, or a year hence, is just as interesting as that which we are to enjoy this moment” (IV, ii, 272).”

While Smith and Hume did not create modern dual-process models, they seemed to have assumed a dual-nature in the minds of humans (Davis 2003). That is, David Hume and Adam Smith, both considered the possibility of the control of a “lower” set of passions and impulses by a “higher” set. As Palacios-Heurta (2003) pointed out, this dualism was previously explored in the 17th century by French Jansenist theologians and jurists such as Pierre Nicole and Jean Domat. We know that David Hume became familiar with this work during his stay in France in the 1730s. Pierre Nicole’s view of man’s inability to allow reason to control passions was particularly influential.

The split between passion and interest was further developed in economic thought in the nineteenth century, along with their respective association along racial, sex, and class lines. With the former being more associated with people of color, women, and the working class, and the latter with English, and often French and German, bourgeois men (Levy & Peart 2004). One of

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<sup>37</sup> At least one exception to this is Palacios-Huerta’s “Time-Inconsistent Preferences in Adam Smith and David Hume” (2003).

the first to clearly articulate this point was the demographer and economist, Thomas Robert Malthus (Tellmann 2013).

## THE LOGIC OF FUTURITY

Malthus has typically been left out in discussions of influences on behavioral economics. This is rather surprising to me since Malthus has ideas that reflect a kind of economic psychology, while Malthus's influence on economic theory has transcended centuries (Hollander 1997). Though Malthus's work on population and scarcity has been the most influential of his ideas, his psychological approach to population in the very same work has received less attention. In "An Essay on the Principle of Population," Malthus differentiates between dangerous 'savage' and economic 'civilized life'<sup>38</sup> Simply put, it is only 'savage life' that will produce a coming catastrophe due to its alleged disregard of the future. As Ute Tellmann (2013: 137) describes,

Taking into account this definition of 'savage life' sheds a new light on the role of scarcity for economic governmentality. Scarcity does not simply denote a situation in which there are more needs than resources. Instead, scarcity appears in this discourse as a regulatory device to generate a sense of futurity over and against the immediacy of 'savage life'. These findings make it possible to trace a broader meaning of economic governing.

Malthus viewed "savages" or people with "savage-like" psychologies as present-biased (in today's BE language) and predisposed to overusing scarce resources, which leaves the "civilized" mindset the task of governing such people and resources in order to lead to an overall prosperous future for this population. Within Malthus' texts one can detect a politics of fear, which aims at inculcating a sense of the economic future into the mind of 'savage life'. In other words, Malthus was calling for the colonization of the mind for the betterment of future populations.

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<sup>38</sup> As Malthus wrote, "The savage would slumber for ever under his tree unless he were roused from his torpor by the cravings of hunger or the pinchings of cold, and the exertions that he makes to avoid these evils..."

Like Hume, Malthus upholds a duality between the civilized and the savage.<sup>39</sup> In the end, Malthus offers us an analysis of happiness and population, but argues that emotional distancing (or avoidance from too many exciting stimuli, to use later behaviorist language) is necessary in order for there to be a civilized future for all people.<sup>40</sup> Many economists took Malthus' view of the future as an important component of economic theory, as did many later eugenicists when it came to their view of the future and the social positioning of "higher" versus "lower" races. While some took Malthus' conceptualization of the civilized life vs savage life as a foundation for rational versus irrational behavior, most left behind the dualism inherent in people in order to construct their own abstracted, general, perfectly rational economic actor. Nevertheless, Malthus is a largely unrecognized contributor to both DPT and intertemporal choice thinking.

#### ABSTRACT ECONOMIC MAN AND RACE

Behavioral economists and historians of economics often cite John Stuart Mill as the progenitor of abstract economic man (e.g., Morgan 2006). While in many philosophy textbooks Mill is typically labeled as a moral or political philosopher, he added much to the political economy of his day. Moreover, Mill's economic thought was intertwined with his political and ethical philosophies. Mill's father, the philosopher and colonial administrator, James Mill, introduced the younger Mill to the utilitarian philosophy of Jeremy Bentham. While a committed utilitarian, John Stuart Mill thought that Bentham's quantified hedonistic philosophy flattened the difference between higher and lower pleasures. In short, it was Mill's belief that there exist

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<sup>39</sup> Malthus' work not only applied to colonial projects, but English Poor Laws and workhouse systems as well (see for instance, Bashford & Chaplin 2016).

<sup>40</sup> Malthus had a kind of physiological approach to psychology and indeed believed the body to have more of an effect on the mind than vice versa, reiterating the problem of system 1 over system 2, including the ongoing misery required to keep the population in check.

differences between pleasures, as well as differences between higher and lower mental faculties, that led him to conceptualizing an idealized rational actor, one with the intelligence to prefer more “civilized” pleasures.

Prior to the founding of economics as a distinct discipline, many political economists commented on the differences of intellect and impulsivity between certain groups in society, and across other societies. In his treatise, *Principles of Political Economy*, J.S. Mill argued that chief among the distinctions between “savage” and civilized life are the temporal proximity of the reward for labor and the related fact that “savages” do not possess sufficient anxiety (Peart & Levy 2005a)<sup>41</sup> The first explicit and conscious narrowing in the characterization of economic behavior came from Mill's so-called creation of homo economicus (e.g., Morgan 2012), a man restricted in his emotional range solely to economic motivations and propensities. In his *Principles of Political Economy*, Mill defines the science of economics as follows : "It does not treat the whole of man's nature as modified by the social state, nor of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth and who is capable of judging of the comparative efficacy of means for obtaining that end" (1836: 321). That is, for Mill, homo economicus is much like the figure of Dickens’s Scrooge character, “lazy, miserly, but entirely effective,” as Mary Morgan (2012:140) put it.

Mill believed that there is only one constant positive motivation, namely, a desire for wealth, accompanied by the only two "perpetual" impediments being "aversion to labour, and desire of present enjoyment of costly indulgences" (1836: 321). From the wealth-maximization axiom, Mill went on to consider other axioms that could serve as a proxy or abstracted generalization of economic actors. Like his views on the unique capacity of humans to use language (as a sign of rationality) and trade (e.g., Fredrickson 2014). For Mill, civility required muted material desires; that is, the desire for goods but the civilized must also have sympathy for

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<sup>41</sup> This is an important distinction, between the lack of anxiety and inability to delay gratification, that we see again in the next chapter, particularly with respect to the research conducted by Walter Mischel and Richard Herrnstein.

one another and have adequate time preference in order to prevent overuse of resources.

As the period comes to a close, social sentiments disappear from economics and material concerns become singularly important. Moreover, the making of an abstract economic agent was folded up in the historical shifts from slavery to wage labor and free trade. In arguing for post-slavery economy, Mill and other economists made it clear that in a “free economy,” former slaves would have to act rationally; in other words, liberty equals governmentality, and economic liberalism equals self-government and discipline.<sup>42</sup> While perhaps the idea of an abstract economic man was to create a homogeneous population, this was never the case. Instead, certain people were seen as naturally rational, or given the institutional support to, and others were not. Here Mill seems to explicate similar concerns over psychological differences in the governing of subjects. Mill wants to help those who lack the education and predisposed temperament to govern themselves properly.

Others would elaborate on Mill’s abstract economic actor, from William Stanley Jevons and Carl Menger to Frank Knight and Paul Samuelson. William Stanley Jevons, an admirer of Bentham and Mill, sought to make economic thinking quantifiable with a mathematical method of calculating utility, and influenced by associationist and utilitarian philosophy, he saw the abstract economic actor as one characterized by personal drives and present bias. For Carl Menger, his abstract economic actor was put to the challenge in a debate with the notable German historical economist Gustav Schmoller.<sup>43</sup> While Schmoller advocated for a more nuanced social and psychological approach to economic choice, Menger argued for a simplified, more calculable,

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<sup>42</sup> Or as Peart and Levy (2004) say, Mill and other political economists were against paternalism, whereas Carlyle believed that slavery offered a benevolent paternalism.

<sup>43</sup> See Shionoya (2005) for more information on the Schmoller-Menger debate.

version of economics.<sup>44</sup> Twentieth-century economists came to admire Menger's stance in this debate, seeing him as the winner of the first *methodenstreit* (i.e., method dispute) in economics.<sup>45</sup> While the idea of abstract economic actors was sound in theory, in practice, economists were constantly comparing their models of rationality to the "irrationality" of the "savage."<sup>46</sup>

Despite these early racial associations, the idea of a rational actor proved to be highly productive in much of twentieth-century economics, but by the beginning of the twenty-first century it would face its biggest challenger, behavioral economics. While it depends on the behavioral economist you speak to, as I found in my interviews (to be described in ch. 5), most behavioral economists seem to feel that the rational actor model may be useful in some respects but is largely not an accurate way of describing real life economic choices. Strangely, contemporary behavioral economists rarely speak of the fact that the origins of the rational actor model also had its basis in psychology, albeit an abstract, principally associationist psychology. This may explain the fact why Mill's economic psychology is largely ignored in current histories of behavioral economics, despite his discussions of intertemporal choice.

## THE OTHER SIDE OF TEMPORAL ECONOMICS

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<sup>44</sup> Many economists and psychologists during Menger's time read his *Principles of Economics*, as being in favor of utilizing psychological analysis for the basis of economic theorizing (Campagnolo 2010). This misread of Menger led some to consider this "new school" of economics, led by Menger, to be labeled 'Psychologenschule' or 'Psychological School' of economics. This somewhat inaccurate label (since the psychology here was a folk psychology, rather than referring to psychophysics, as in Lujo Bretano's work), which also was a way to contrast the "new school" with the German Historical School. The rise of psychology as a certifiable science meant that Menger's view was somehow more scientifically based than the Historical school (Campagnolo 2010).

<sup>45</sup> The use of psychology in economic theory was associated with "liberal" or "socialist" stances in Germany and Austria due to its connection to historical and cultural approaches advocated by Schmoller and Brentano (Proctor 1991).

<sup>46</sup> As in the previous chapter, terms such as "savages" or "primitives" were commonplace in the late nineteenth century as descriptors to reference primarily, Indigenous societies. While this may not be true in every case, one can find racialized references to race and nearly all of the economic thinkers described here. I have tried to make these apparent where possible, but not every reference would be relevant for the purpose of this analysis. For more on the classification of people during this time see (Williams 2012).

The idea of an abstract economic man came out, in part, due to conflicts between homogenetic views of equal competence in humans, compared to heterogenetic views of unequal competence between human populations or subgroups (Levy & Peart 2005). The former was espoused as the general consensus of economic thought up until the late nineteenth century, when the problem of explaining the differences in labor, wages, savings, and economic development became more vivid. In addition, during this time, many scholars still held onto a polygenic belief in racial differences. The solution to this was to create axioms of rationality based on “civilized” behavior and thought. All of these axioms reinforced the contrast between bourgeois European men and everyone else. The idea being that bourgeois European men were capable of laissez-faire competition, whereas everyone else needed government or education to act more “rationally.”

This can be seen in some of the work of Nassau Senior, William Stanley Jevons, and Irving Fisher, who all doubted the rationality of choices made by people of color, women, and the working class. Yet, these are the same economic thinkers whom behavioral economists cite for their prescient takes on intertemporal choice and psychological understandings of economic behavior. The erasure of the racist views of these men is surprising, since they often talked about time preference differences between races, cultures, and nations. These economists thought that it was generally innate differences between groups and individuals that led to these differences of time preference. For instance, William Stanley Jevons held that correct choices were made in goods markets; Jevons, like Nassau Senior, did not believe that the English working class or the Irish made rational intertemporal choices (Dimand 2005).

Only relatively recently has there been more attention to the influence of eugenics on Fisher’s economic theories. As Mark Aldrich (1975) has documented, Fisher was an ardent eugenicist who, like other writers of his time, indulged in disparaging, prejudiced comments about

groups culturally or ethnically alien to him. In *The Rate of Interest*, Fisher ([1907] 1997: 291-292) wrote:

The communities and nationalities which are most noted for the qualities mentioned above-foresight, self-control, and regard for posterity-are probably Holland, Scotland, England, France, and the Jews, and among these peoples interest has been low .., among communities and peoples noted for lack of foresight and for negligence with respect to the future are China, India, Java, the negro communities in the Southern states, the peasant communities of Russia, and the North and South American Indians, both before and after they had been pushed to the wall by the white man.

According to Fisher, there are five causes to explain variations in the rate of impatience among consumers: (1) foresight, (2) self-control, (3) habit, (4) expectation of life, and (5) love for posterity or bequest motives (1910: 375). Racial (as well as ethnic and national) variations of each of these are detailed in the works of Fisher. For instance, in regard to foresight, which Fisher saw as having the ability to think ahead compared to willing oneself to be patient, he wrote that “If we compare the Scotch and the Irish, we shall find a contrast in this respect. The Irish, in general, lack foresight and improvidence, and the Scotch have foresight and provident. Consequently, the rate of interest is high in Ireland and low in Scotland.” (1910: 376).

Fisher supported eugenics, serving as president of the leading US eugenics society in 1921 (see Fisher 1921b), but also supported a kind of euthenics in that he believed that a broad system of education could be used on the lower classes in order to handle intertemporal choice problems (Cot 2005; Douthat 2012). This was the message of policy that Jevons, Marshall, and Pigou (who especially invested in the state as the responsible party for watching over future generations and natural resources) recommended as well, education teaches patience, and hence mitigates high time preference. To be brought into “civilized” society is to learn self-government over one’s ignorance and emotion according to this view. Since ignorance and emotion are difficult to measure, economists often used models and variable outcomes to map these class differences.



Laborers were thought to be unable to make correct savings and family size choices (since again, future savings and overpopulation are at the heart of much marginal and neoclassical concerns). In many ways, the emphasis on education and self-help, compared to increases in income, as advocated by Jevons and others, is like the neoliberal policies we see today, just with less emphasis on institutional state education.

The British economist William Stanley Jevons (1871) endorsed Nassau Senior's concept of abstinence; that is, the abstaining from present enjoyment of utility that is to interest as labor is to wages. Civilized men should want less, according to Mill and Jevons, although Jevons goes further than Mill by arguing that “savages” are not only lazy, but content. As Jevons stated,

Questions of this kind [work effort] depend greatly upon the character of the race. Persons of an energetic disposition feel labour less painfully than their fellow-men, and, if they happen to be endowed with various and acute sensibilities, their desire of further acquisition never ceases. A man of lower race, a negro for instance, enjoys possession less, and loathes labour more; his exertions, therefore soon stop. A poor savage would be content to gather the almost gratuitous fruits of nature, if they were sufficient to give sustenance; it is only physical want which drives him to exertion. (1871: 182-83)

Furthermore, Jevons did not believe that the English working class or the Irish made rational intertemporal choices. Despite this, Jevons considered the discounting of future benefits (a positive rate of time preference) irrational (Peart 1996; Peart 2000; Dimand 1998). In consequence, as Peart (1996; 2000) emphasizes, Jevons believed that intertemporal choices are systematically mistaken, even though static consumer choice is optimal on average. Jevons deplored the "ignorance, improvidence, and brutish drunkenness of our lower working classes." (quoted by Peart 1996: 150), which led them to save too little and marry too early, and he blamed the systematically mistaken expectations of entrepreneurs and merchants for exacerbating the trade cycle.

Jevons, inspired by Richard Jennings, began to look toward the science of psychophysics to derive his models. While this initial import into a form of experimental psychology was short-

lived, its impact on early economic theory was still impactful. A larger movement toward an economic science rooted in experimental psychology would not mobilize for nearly a century.

### MAKING ECONOMICS PHYSICAL AND PSYCHOLOGICAL

In their histories of the ties between economics and psychology, both Colander (2007) and Bruni & Sugden (2007), looked at the influence of psychophysics on marginalism. Jevons is generally considered to be the “father” of marginalism, along with Leon Walrus and Carl Menger. Marginalism represents the end of classical political economy, but more importantly for us, utility changed from Bentham’s measure of the welfare of a society to a measurement of the mental state of a hedonistic economic subject (Maas 2005; Hands 2010). There are many histories of marginalism (e.g., Kauder 2015; Milonakis and Fine 2009; Mirowski 1989), but for our purposes, we shall look at the influence of physics and psychophysics on some of these economists.

In the previous chapter, we briefly explored the influence of physics on psychophysics and psychology, which is to say that the influence of physics on economics was not incidental. As Mirowski notes, many disciplines had physics-envy in the nineteenth century (though this is an anachronism that Mirowski also criticizes), specifically due to the popularity of energetics. “The elaboration of the energy concept created a stir in physical theory because it promised the eventual unification of all the natural sciences under one principle” (Mirowski 1989, 266). Energetics was influential to both psychophysical accounts of the mind, as well as marginal economics, but became less popular by the turn of the twentieth century.<sup>47</sup>

The Weber-Fechner Law in psychophysics (or the quantitative study of the relationship between physical stimuli and consciousness) was developed in the mid-nineteenth century, by

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<sup>47</sup> Like Mirowski, I also point out the influence of other fields (besides energetics) on economic thought, such as psychology, anthropology, and biology.

Ernst Weber, and separately by Gustav Fechner. In Ernst Weber's Law, people's sense of additional weight was proportional to the relative, not the absolute, increase in weight, so that when the weight the blindfolded person was holding was doubled, the threshold for sensing the increased weight has doubled (this was also the same for perceiving vision and sound). This empirical finding became the Weber-Fechner law after Fechner (in 1860) wrote it in its mathematical form:  $p = k \ln(S/S_0)$ . The Weber-Fechner Law as a quantified and standardized measurement based on experimental data could then be used as a function to calculate subjective utility in economic theory, leading, in part, to the marginal revolution in economics (Valasek 2014). This can be seen in the way in which both William Stanley Jevons and Francis Edgeworth utilized psychophysics in their respective economic theories.

Others were skeptical of such an approach. William James wrote that "the whole notion of measuring sensations, numerically, remains in short a mere mathematical speculation about possibilities, which have never been applied into practice." (James 1890: 539). Whereas Marshall said that "It is essential to note that the economist does not claim to measure any affection of the mind in itself, or directly; but only indirectly through its effect" (1890: 15). Later on in the twentieth century, George Stigler (1950: 377) felt it necessary to formally reject the Weber-Fechner law, while promoting a seemingly more behaviorist approach to understanding economic agents. "The laws does not hold in all cases"; "the law refers to psychical reactions to external stimuli whereas economics deals with observable behavior in response to subjective needs." The death of the Weber-Fechner Law was not its end, however. As we shall see in the next chapter, the Weber-Fechner Law provided a more experimental foundation for new psychological models of economic agents in the later part of the twentieth century with the advent of behavioral economics.

It is these issues over utility that in part led Jevons to energetics and psychophysics. Specifically, Jevons sought an empirical way to verify his abstract calculations of utility.<sup>48</sup> From the 1870s to about the 1930s, we see economists concerned about human feelings and individual valuation in economic transactions. Francis Edgeworth is also important here because he brings Darwin and Spencer together in his analysis of discount rates and marginal utility. For instance, Edgeworth believed that we could develop a hedonic calculus to calculate individual utility (over time). His argument went against J.S. Mill's idea of a universal capacity of happiness for every human (against racial differences). Instead, Edgeworth argued that some people had more of a capacity for happiness compared to some others. Again, this seemed to at least be in part inspired by "Spencer's hypothesis," as discussed in the previous chapter, and experimental psychophysics, since he talked about the differences in intellectual energy use between men and women, for instance.

This question was central to F. Y. Edgeworth's fusion of utilitarianism with biology a way for Edgeworth to support the idea that biological fitness mapped to the capacity for pleasure: as people were biologically superior, they possessed a greater capacity for pleasure (Barbé 2010).<sup>49</sup> He considered the extreme case of agents with such low capacity for pleasure that they have zero or negative total happiness. Their pleasure from consuming goods is offset totally, perhaps more than offset, by their pain at producing goods. This case is central to Edgeworth's eugenic proposals for racial betterment. If such low-pleasure-capacity people were replaced by people with a greater capacity for pleasure, social utility would soar.

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<sup>48</sup> Before Jevons, Richard Jennings was interested in bringing findings from psychophysics into economic theory (Cf. Davies 2015; White 1994). Jennings's economic concern regarding growing reports of industrial worker fatigue inspired Jevons, as did Jennings's hedonism and subjective approach to economic theory (Drakopoulos & Ketselidis 2017).

<sup>49</sup> Edgeworth was influenced by Spencer, Galton and Quetelet, as well as his friend, British psychologist, James Sully, who discussed artificial selection in his work (see Barbe 2010).

In his *Theory of Mathematical Psychics*, Edgeworth made it clear that he was very aware of the debates within psychophysics paying special attention to Fechner's research. The importance of psychophysics to Edgeworth's economics was fourfold. One way, as discussed previously, was how psychophysics could give functional meaning to the measurement of utility. Second, the potential of being able to calculate differential capacities of happiness and pleasure between individuals, which was important to Edgeworth since he believed that society should favor "the privilege of man above brute, of civilized above savage, of birth, of talent, and of the male sex," (Edgeworth 1881: 77) in terms of capacity for pleasure or utility. Third, the scientific legitimacy of psychophysics could support the marginal revolution that Edgeworth was invested in. Finally, there were policy implications of a diminishing marginal utility (which was initially based on findings from psychophysics), specifically related to debates over welfare programs in Germany in the early twentieth century. Differences in mental speed and sensory sensitivity thus paved the way for thinking about further psychological experiments and applications to policy, as well as consumption and work, something we will see again next chapter when we explore the development of 'new' behavioral economics and the origin of behaviorally-informed policy recommendations. However, in order for there to have been a more fruitful exchange between psychology and economics in the late twentieth century, they needed a shared, institutional language, namely a more rigorous form of mathematically modeling via statistics. The following section explores this history of quantification in early economics, connecting it to concerns of race and eugenics policy.

## 'RACIAL BETTERMENT' THROUGH QUANTIFICATION

Francis Galton defined eugenics as a social program that aims “to replace natural selection by other processes that are more merciful and not less effective.” The first objective for eugenics, says Galton (1908, 323), “is to check the birth rate of the unfit instead of allowing them to come into being...the second object is the improvement of the race by furthering the productivity of the fit by early marriages and the healthful rearing of children.” In his 1976 *Social Studies of Science* article, Donald MacKenzie describes eugenics ideology in Britain as a professional middle class movement. Whereas Malthus was only concerned with the average marriage being postponed, the eugenicists of this time claimed that only the “improving element” or those with lower time preference, would delay marriage, while those “more reckless” people with higher time preference would fail to do so, with disastrous consequences.

The historian Ruth Schwartz Cowan (1972; 1977) and others (e.g., Renwick 2011; Peart & Levy 2009) looked at Galton’s early debate about political economy in the mid-1860s as a precursor for his later eugenics program.. This influenced his move from eugenics as a biological program to more of a social scientific program. In 1877, Galton challenged economics as a field by presenting a report that the Economic Science and Statistics (Section F) of the British Association for the Advancement of Science, which stated that Galton found a lack of scientific standards in the section, recommending that the Association close the section. In order to understand population and individual differences, Galton went on to invent a kind of “statistical racism” in place of economics.<sup>50</sup> Statistical racism meant comparing the quantified mean of racial groups along overall “advancement.” This general statistical approach was replaced with a kind of “parametric racism” in which racial groups were divided on the basis of sample means for specific

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<sup>50</sup> Both ethical character and physical traits strongly correlate with intelligence according to Galton. This was Galton’s belief based in part from previous writings by Dr. James Hunt (Peart & Levy 2009).

traits.<sup>51</sup> This kind of parametric racism approach was applied in various ways by other scholars and public intellectuals. In general, these “race statisticians” found that the so-called “inferior races” could be characterized by lower work effort, improvidence, alcoholism, inability to save money, inability to control sexual passion, and overall carelessness.

Karl Pearson was an influential statistician and eugenics researcher in the early twentieth century. The work of Galton and Pearson led to the gestation and advancement of many fields including, statistics, econometrics, biometrics, psychometrics, and anthropometry.<sup>52</sup> What economists got out of statistics and eugenics: econometrics, parametric stats, and a way to understand and deal with “race treason/suicide.”

Quantification, and specifically statistics, constructs the possibility of interpreting population trends over time. What social studies of science scholars have argued is that such methods of constructing knowledge are anything but a neutral tool. For instance, William Deringer (2018) points out the way that the British public came to value quantification in public debates in the 16th and 17th centuries, while Alain Desrosieres (1998) describes the way that statistics have been used as a tool for the state, including the nineteenth and twentieth centuries.

Relatedly, the desire for quantified traits was expressed well before Galton’s time as a researcher. As discussed in the previous chapter, Herbert Spencer argued that researchers of human differences should look at reaction time differences and argued that such findings could be correlated with differences in time preference between races. Galton himself looked at how reaction time correlates with intelligence measures between racial groups (Tucker 1996). While economists did not directly apply these particular reaction time studies in their work, as far as I

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<sup>51</sup> I take these terms from Levy & Peart (2004).

<sup>52</sup> For more on Pearson’s contributions to statistics and eugenics, see also MacKenzie (1978), Gigerenzer et al. (1989), Desrosieres (1998), and Porter (2004).

know, many did become convinced that there was a hereditary component to differences in economic behavior. This led these economists to argue that the time preference of a “higher race” was likely not applicable to a “lower race” (Levy & Peart 2005).

Like the economists of his day, Pearson was interested in time preference, but like Galton, he wanted to know how time preference differed between racial categories. Pearson and Moul (1925) examined differences between Christian and Jewish parents and the amount of money they spent on their children’s clothing. As Levy and Peart (2005) have already pointed out, assuming that the money saved by Jewish parents by spending less on children’s clothing was going toward education or other long-term spending goals, Jews in their sample were seen as having a lower time preference compared to their Christian neighbors. Even though eugenicists generally correlated low time preference with intelligence, Pearson was unwilling to make this connection explicit in this particular study.

Pearson thus interpreted his statistical results of “difference” to obtain the conclusion that Jews were “inferior”, even though the eugenics doctrine to which he assented ought to have forced the opposite conclusion. Eugenic doctrine held that a feature of the “inferior” stocks of people was “imprudence”, “intemperance”, or high time preference. Yet when Pearson found empirical evidence suggesting the Jew might be prudent and patient, he nonetheless interpreted his results as evidence of Jewish inferiority, while maintaining silence as to the issue of time preference. In sum, both reaction time and time preference were part of the central research programme of eugenics. This is likely because eugenicists thought that reaction time correlated with other preferred physical and mental traits, like intelligence, and time preference was correlated with behavior around wealth, social order, health and reproduction (ability to save, not to steal or commit other crimes, not to overuse substances such as alcohol or drugs, and the ability to put off



marriage and kids). Economics would continue to associate human biology and physiology to economic decision-making, as we shall see in the continuing influence of eugenics on economics.

### THE BIO-POLITICS OF ECONOMICS

The connection between racial hierarchies and economics was not limited to Great Britain. As anthropologists of racial differences influenced Galton and eugenics, they were also influential for American economists. In particular, Otto Anmon and Georges Vacher de Lapouge, along with Carlos C. Closson, were the most widely read anthropologists by economists (Maccabelli 2008). These anthropologists came to maintain the necessity of the physical elimination of the “inferior” subjects, a task that, if not carried out by natural selection, would have to be performed by the state.

According to Cherry (1976), there was a broad consensus within the economics profession that the inferior status of African Americans reflected genetic inferiority. This consensus began with the founders of the American Economics Association, including Richard Ely and its first president, Francis Amasa Walker in 1882. Indeed, the founders and many economists also believed that southern and eastern European immigrants were genetically inferior (Cherry 1976). These economists, including Irving Fisher (Aldrich 1975), persistently fought for immigration restriction legislation to stem what they believed was “race suicide,” or the fear of whites being overrun by inferior immigrant stock and people of color. Frank Fetter and Edward A. Ross, along with Walker, were among the first professional economists to provide scientific respectability for race-based immigration restriction. While these economists were concerned with the public health risks they associated with immigrants, some of their arguments resonate with the discourse claiming that

racial inferiority could be seen through differences in impulsive action and lack of work habits that we have seen throughout this chapter.

Hoffman believed that the high incidence among African Americans of disease would lead to their extinction. No public health program could help them, according to Hoffman (a German economist and statistician), because it is not their conditions of life that causes their excessive mortality, but rather their “race traits and tendencies.” Five other works on the “Negro race” were published by AEA from 1897-1908. From 1908-1916 there was a change in AEA’s publications, which saw a shift from articles about race to articles about immigration (Aldrich 1975).

Another approach in economic thought in America during the late nineteenth and early twentieth century that would go on to influence behavioral economics was institutional economics.<sup>53</sup> Institutional economics has been cited in the literature as an early opponent to neoclassical economic theory associated with Jevons, Menger, etc. With similar interest in history and sociological explanations as the German Historical School of economics, institutional economics opposed the abstract atomist approach to economic agency and actively rejected the notion of perfect rationality. Institutional economists, such as Thorstein Veblen, argued that *Homo Economicus* was an unhelpful, possibly dangerous, fiction. Instead of seeing people as autonomous rational subjects with the ability to make rapid and accurate calculations, institutional economists generally assented to a Darwinian-biological and instinct driven model of human decision-making and behavior. As we have already seen in the previous sections, a rejection of *Homo Economicus* in favor of a biological approach does not refute a hierarchical value system (Hodgson 2004). In fact, like contemporary behavioral economists, institutional economists were

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<sup>53</sup> For instance, Robert H. Frank, a proponent of institutional economics in the late twentieth century, was also an early contributor to behavioral economics, looking at the ways that institutions and emotions influenced economic decision-making.

just as likely to differentiate between more rational subjects and less rational subjects. However, once again, being against “rational” economics does not mean being anti-racist. A clear example of this comes from the institutional economist, J. R. Commons who frequently offered the Irish as an example of an “inferior” race, but the “negro” and “immigration problems” formed additional backdrops to discussions of his eugenic policy proposals (1916).

In addition, institutional economics was not immune from “Social Darwinist” thinking (Hodgson 2005). Once again, impulsive behavior is seen as a sign of hereditary inferiority. Further support to anti-welfare approaches later on, but not based on race or psychology (to an extent). For a time, Social Darwinist views reinforced the neoclassical thesis that economic inequality reflected the proper workings of an economic system. In this case, government economic intervention would be contrary to social objectives. However, Social Darwinist support for laissez-faire economics was predicated on the belief that the natural workings of the system would eliminate the unfit, making it a “hands-off” approach to population/hereditary betterment, in contrast with eugenics policy (Cf. Leonard 2003; 2005).

Social “Darwinism” and eugenics affected British economics as well. These included the six “believers” in eugenics, as discussed by John Aldrich (2019), which included Edgeworth, Alfred Marshall, Arthur C. Pigou, John M. Keynes, Henry Roy Forbes Harrod, and James Meade. While their position on eugenics and their approaches to economics differed from one another, they nonetheless gave at least some textual support of eugenics thinking. Rather than go into these extensive differences, I instead provide here some important context for eugenics thinking in the works of just two of these economists, Marshall and Keynes.

Marshall believed that the English character had reached the highest point of development insofar as it exhibited “more self-reliant habits, more forethought, more deliberateness and free

choice” than the rest of mankind. He confirmed that economics is in its essence a “study of man” dealing with the strongest of the forces that shape man’s character.” Marshall explained to his readers how cultural “degenerations” would challenge the workings of the economy at its heart: “Everyone is aware that the accumulation of wealth is held in check, and the rate of interest so far sustained by the preferences which the great mass of humanity have for present over deferred gratifications, or in other words, by their unwillingness to wait (Aldrich 2019).

Marshall went after welfare and poor relief since they punished the industrious and benefitted the lazy. The nature of measuring utility is an inaccurate device to test the strength and weakness in the nature of desire and enable statements contrasting the liking of “savages for the wants of the moment” with the foresight of civilized races so sensitive to the wants of old age and posterity (Peart & Levy 2009). Or, as Marshall also put it, “Savage life is ruled by custom and impulse.” (1890:602). Therefore, it would not be unfair to say that Marshall continued a racist Malthusian vision of intertemporal choice, seeing the “savage races,” as he put it, as stuck in the past until they are also civilized (possibly through trade or colonization).

After Marshall, it was Keynes who tried to understand the link between self-control, economics, and eugenics. Keynes was interested in eugenics from the very beginning of his academic career (Aldrich 2019; Freedman 1979; Singerman 2016; Tarascio 1971); for instance, he referred to Sir Francis Galton’s essay *Probability: The Foundation of Eugenics* in his dissertation. Keynes was later the vice president of the British Eugenics Society from 1937 to 1944. Keynes was especially concerned about overpopulation in the East: “India, Egypt and China are gravely overpopulated.”

Keynes represents a unique opportunity in this critical history of intertemporal choice models. By challenging the standard model of economic man, Keynes presents a viewpoint of

intertemporal choice that is psychological but is nonetheless a supportive model for a steeper time preference curve, or a bias for present consumption. Keynes's own writings contain remarks that present psychology as an important part of economics (e.g., Dow 2010; King 2010). Keynes (1964:202) maintains that "it is evident then, that the rate of interest is a highly psychological phenomenon." Keynes (1964:162-163) further explains in regard to economic theory and foresight that, "We are merely reminding ourselves that human decisions affecting the future, whether personal or political or economic, cannot depend on strict mathematical expectation, since the basis for making such calculations does not exist..." As Akerlof and Shiller (2010) have also pointed out, Keynes fell back on the assumption that economic analysis was based on supposedly universal "psychological laws." These psychological laws included animal spirits, which are defined as a "spontaneous urge to action rather than inaction"; this urge toward action is not animated by "the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities."

Ultimately, Keynes' model based on psychological law did not fundamentally transform economics. Instead, we see further emphasis on a more formal, mathematical economics that sought to remove psychological assumptions. In a sense, this shift meant an even more detached economic science from the empirical world. Despite their efforts, only a few decades later would we see the return of psychological concerns bearing their influence on economic theory.

#### THE INCOMPLETE REMOVAL OF PSYCHOLOGY FROM NEOCLASSICAL THEORY

What we see in economics generally after the 1930s is a move away from considerations of intertemporal choice problems, as well as a move away from so many explicit references to race, eugenics, and Social Darwinism in the economics literature. While the horrors of Nazi

Germany played a role in economists removing obvious racial essentialism, this did not mean that race and racism were eliminated from the field (Cherry 1976). As we shall see in this section, the supposed “color-blindness”<sup>54</sup> of white liberal social scientists in the mid-twentieth century, as well as an explicit rejection of hedonism and psychology, and the continued reliance on quantification as a supposedly value-neutral approach, fostered less explicit, but still devastating critiques of certain populations for being impulsive and irrational; for instance, the culture of poverty thesis (e.g., Greenbaum 2015).

The historian of economics, Nicola Giocoli (2003) wrote that the effort to “escape from psychology” within the economic profession was started by Fisher and Pareto and ended with Savage and Debreu. For his part, Irving Fisher was a forerunner of modern choice theory, which started from the postulate: “Each individual acts as he desires.” Fisher’s model is thus more akin to behaviorism than the cognitivism of later behavioral economists; that is, Fisher understood that the subjective motives of choice is an implicit component to the objective acts of choice. According to Giocoli (2003), it was Fisher’s 1892 work, *Mathematical Investigations*, that made the explicit statement that economics was not interested in why a good was useful, but only in the fact that it was useful, thereby “separating the concept of utility from its hedonistic basis.” In order for economics to be a “positive science” it had to be freed from all of its psychological connotations.<sup>55</sup>

Vilfredo Pareto, along with Alfred Marshall, defined economics as being concerned with the more deliberative and calculative aspects of human behavior. This can be seen as a way to bifurcate economics and psychology from one another. The former discipline studies deliberation

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<sup>54</sup> See for instance, Bonilla-Silva (2021).

<sup>55</sup> Importantly, it was not only the desire for mathematical rigor that influenced a number of economists to not integrate psychological findings into their work. According to Giocoli (2003), the reason why economists were not interested in the actual processes through which agents made their choices, but instead merely the outcomes, was due to their wish for “maximum generality”, “conceptual integrity” and “image of economics as a scientific discipline.”

and the latter discipline studies irrationality (or the split between normative models and descriptive models); ostensibly, splitting the dual-mind into separate spheres of study. Many economists, understanding the cultural and political praise of rationality through the Western intellectual tradition, assumed that their focus on more deliberative aspects of human behavior would provide them with more academic and political clout.

However, there were other reasons why Marshall wished to separate economics from psychology. Like Pigou, as well as Menger before that, Marshall was concerned about the link that psychology could bring to the evaluation of welfare benefits under capitalism. The marginal utility of money and the concept of welfare were both based on the psychological interpretation of utility. As we saw with Edgeworth's psychophysics version of marginal utility versus Menger's psychological economics, meant that there was more than one way to interpret and calculate subjective utility. The division between psychological and non-psychological was therefore, in part, related to a difference in values on the part of the economic theorists. While the marginalists largely sought to de-contextualize economic actors from their sociocultural and political background, it was not until the 1930s that the work of Vilfredo Pareto and Paul Samuelson that the *Homo Economicus*, or rational actor, becomes the hegemonic model of economic actors in economics. The principles of *homo economicus* retract the psychologically-informed economics of Edgeworth and others.

Perhaps the most well-known contributor to an anti-psychological microeconomic approach would be the American economist, Paul Samuelson. Although it was not the central purpose of "A note on the pure theory of consumers' behaviour," Samuelson (1938) provided what many subsequent economists would take as foundational to their discipline, through "revealed preference." With this move, Samuelson provided a means of avoiding psychology for economists.

In sum, Samuelson provided an explicit difference between agents' so-called mental variables (basically, their desires) and psychological processes (basically, their introspection). However, Samuelson was largely following previous economists, i.e., Jevons, Menger, etc, toward mathematical formalism, and a recent trend to follow the implications of logical positivism on the sciences, including economics. That is, Mill's abstract "economic man" becomes modified in the work of Samuelson. It is with Samuelson that we have much of the standard axioms of economic theory today.

Samuelson was also likely the most influential economist in the twentieth century to work on theories of intertemporal choice, particularly with his discount utility model in 1937. The discounted utility model was mathematical and normative, making a great deal of unlikely assumptions about real human (or animal) behavior. Compared to the later discount functions produced by the empirical behavioral economists, such as the hyperbolic discount model, the discounted utility model assumes dynamic consistency (or you will have stable preferences over time). Like the hyperbolic discount model, it does have somewhat of a bias for present consumption, but it is consistent over time than the empirical model. That is, the discount utility model became the ideal of how we should treat consumption (and finance/savings) over time, rather than how people actually behave.

The American economist Robert H. Strotz in 1955 followed Samuelson in the representation of the normatively prescribed, rational path of intertemporal choice. But unlike Samuelson, Strotz (1955) also argued that actual behavior deviated from this rational path, and he sought to develop tools to represent this real-world behavior. Many behavioral economists of the 1980s and 1990s identified Strotz's work on intertemporal choice as an outlier far ahead of its time (including Thaler 1981).



However, it was perhaps Leonard Savage in the mid-twentieth century who became the most influential to the early behavioral decision researchers, including Ward Edwards and Amos Tversky. By providing a Bayesian statistical framework of expected utility, Savage ensured that economic decisions (in the abstract) would behave rationally. As Shafer (1986: 464) wrote about axioms that act as descriptions for the “preferences of an ideal rational person, an imaginary person whose behavior provides a standard or norm for the behavior of real people.” By the 1980s, the split between the normative and empirical, supported by Savage (as well as Milton Friedman and others) became important to both psychology and economics. At this time, the normative aspect of economics became the jurisdiction of mathematicians and economists, while the empirical was seen as a domain dominated by psychologists (Shafer 1986). Interestingly, The University of Chicago in the US would become a central location for the development of both the normative, and, later in the 2000s, the empirical.

#### THE REVIVED DEBATE OVER THE IMPULSIVE ECONOMIC SUBJECT

The Chicago School of economic thought, included Frank Knight, Milton Friedman, George Stigler and Gary Becker, amongst others. Through the work of Stigler and Becker in particular, the Chicago School revived the classical doctrine of equal competence of individuals (Levy & Peart 2005). It also (and by no coincidence) revived the presumption of competence in economic and political activity; that is, the idea people are fundamentally the same in their ability to act rationally, and that they each apply their own individual preferences in the rational pursuit of utility-maximization, whether it is in finance or other preferences. Through this idea of equal competence, the Chicago School further split time preference from racial differences. This can be

seen in Frank Knight's rejection of Fisher's positive time preference<sup>56</sup> model (1931), as well as Stigler and Becker (1977) rejection of positive time preference in economic theory. Instead, they embraced a universal, but culturally-relative, rational actor model. Ironically, it was the empirical approaches to economic behavior that reified the idea of unequal competence and positive time preference differences, albeit in largely a "color-blind" way.

Of course, while Stigler and Becker argued for an equal competence approach to economic theory, their statements revealed clear biases, particularly against the state, but also against certain groups of people. For instance, George Stigler seemed to actually embrace Myrdal's thesis when he argued in his 1965 essay "The Problem of the Negro," that Black people were inferior as workers and that the solution was in fostering "the willingness to work hard." Stigler further states, "...it is because the Negro family is, on average, a loose, morally lax, group, and brings with its presence a rapid rise in crime and vandalism. No statutes, no sermons, no demonstrations, will obtain for the Negro the liking and respect that sober virtues commend." Such sober virtues to Stigler included a desire for learning and frugality. In contrast to white liberals at the time, Stigler argued that Black leaders should reject the belief in the state as the only arm of social improvement, instead advocating for more investment in "the home and church and school." Stigler (1965:12) "The Problem of the Negro" New Guard,

Stigler's libertarian politics, which decries governmental intervention, is also seen in the work of Gary Becker. Both Stigler and Becker (1977) posited an economic model that embraced individual pursuits based on stable preferences or taste. When applied to racial discrimination (see Becker 1971), this implies that no governmental intervention should be made when someone cannot find a home to rent or buy because of the taste of racists. The indifference toward racial

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<sup>56</sup> Positive time preference simply means that the economic actor is impatient and wants to consume immediately.

discrimination though is not what prompted a behavioral model of economic decision-making. Such a model would be the result, in part, from Becker's "rational addict" model, the implications of which would require the decriminalization of drugs.

According to Becker's model, addiction (i.e., substance use disorder) has a long-term negative impact on well-being, but overall, the 'addict' is seen as better off than they would have been in the absence of the addiction. If we were to take Becker's article with Murphy (1988: 691), they go as far as to say that addicts would be "even more unhappy if they were prevented from consuming the addictive goods."

Behaviorist Richard Herrnstein would eventually write a response to Becker's "rational addict" model. Applying his own (Herrnstein 1970) "matching law", Herrnstein, and co-author Drazen Prelec, (in Loewenstein & Elster 1992) used a behavioral economic explanation for substance use to emphasize that, over extended periods of time, the proportion of behavior allocated to substance use will be a joint function of reinforcement gained from use of that substance and the reinforcement gained from all other sources. In other words, the value of (or demand for) substance use is determined by its benefit. While this initially does not sound too far off from Becker's model, Herrnstein and Prelec present the idea that addiction is a trap that people enter slowly and unknowingly and then find it difficult to extricate themselves. Herrnstein and Prelec do not endorse a harsh criminal law approach to addiction (though see Wilson & Herrnstein 1985 for a more complicated account by Herrnstein) but do believe that there should be some governmental means of intervention. These interventions could be framed as nudges, or as we shall see in the final chapter, a form of therapeutic governance, where the behavioral science acts as therapist to society (made up of "helpless" 'consumer-addicts') through policy.

Herrnstein's response to Becker is one of the first instances of behavioral economics challenging mainstream economic theory. This is also significant given the policy implications of their exchange. It would be more than a decade later before a more substantial exchange between orthodox economics and behavioral economics occurs.

## CONCLUSION

This chapter prompts the question, what should we make of the history of economics as described by behavioral economists? As so many fields of inquiry, including much of modern Western philosophy, are based on racist notions and organization, many scientists have felt the need to reckon with their past. This "reconciliation" move is largely performative, but it does show the impact of non-scientists on the profession. What we see in behavioral economics, however, is more or less, complete silence. The fact that many of their basic theoretical core comes from racializing assemblages is unacknowledged. Meanwhile, as a field, behavioral economics has come to influence more and more microeconomic theory.

Arguably, economic theory has become more complex, it has not evolved beyond its earliest debates regarding economic agents. Experimental psychology only comes back into economics after being "scrubbed" of its political, and often racist, origins. The economic agent was never "purified" of emotion, but rather of the racialized affects of the uncivilized Other. That is, rationality only becomes defined in the absence of impulsiveness. Therefore, the economic rational agent has the "biological" and "cultural" specific behaviors that match with European industry and capital, rather than the "impulsive" Black and Indigenous subjects of reaction time experiments.

Economics has yet to be separated from population concerns, and it is unclear whether it could ever separate the two while retaining its foundational identity. Population is linked to biology, linked to a split between positive and negative traits, between physical and intellectual, which was operationalized with reaction times and IQ in psychology, while it was operationalized in economics with time preference and a split between rationality and sympathy. This leads to a cognitive and economic elite over the majority of the population (who, the elites argue, threaten to outgrow the available resources). This may be seen in the rule of police/military force over the working classes, which coexist alongside liberal colonial expansionist projects marketed as “developmental economics” for the world’s poor today.

As we have seen, the history of behavioral economics given in other accounts misses these important social and political contexts. For instance, while the historical accounts provided by Lewin (1996) and Bruni & Sugden (2007) are incredible sources of overall exchanges between economics and psychology, they fail to consider race and gender as components to knowledge production (Bartlett 2002; Bateman 2003), while also downplaying intertemporal choice as a boundary-object between these two fields, at least for much of the twentieth century.

The return of behavioral approaches to intertemporal choice has its dangers, including blaming the poor for their spending habits. Moreover, there are current links today between economics and biological differences: for instance, assumptions about fertility patterns and the inheritance of ability (Jones, Schoonbroodt & Tertilt, 2010; Black, Devereux & Salvanes 2009). Indeed, the logic of futurity inherent in political economy, eugenics, and (behavioral) economics continues today. Even with the supposed “erasure” of homo economicus, and the prevalence of behavioral interventions (i.e., mindfulness practices) in order for people to be more “present,” economic man is the figure of a never arriving future, postponing pleasure and equality

indefinitely. Or as Ute Tellmann writes, “For modern economic man, the future never arrives but always recedes,” (2017: 126).

In Western European and American economic thought, the ability to value the future has been tied to intelligence, mental health, natural fitness, colonialism, and white supremacy. The silence over these issues by behavioral economists (and other social scientists, including economic sociologists) is not a sign of progress, but is rather a weaponized silence for the benefit of white supremacy (Benjamin 2019).<sup>57</sup> As we will see in the penultimate chapter of this dissertation, the work of behavioral economists has not been used to drastically change systems of oppression, but instead to support policies that target poor people and communities of color, arguing that it is for their own benefit to follow such behavioral engineering. The following chapter will show how scholars from psychology and economics brought reaction time research into discount rate/intertemporal choice modeling to create the very basis of behavioral economics, despite the racial origins of both discount rates (this chapter) and RT (previous chapter).

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<sup>57</sup> See Hirschman & Garbes 2019 for an overview of economic sociology on race.

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### **Chapter 3**

#### **THE RETURN OF THE LAW OF ECONOMY: The rise of dual-process theory and behavioral economics**

Histories of intertemporal choice in the later part of the twentieth century have primarily been from the point of view of behavioral economists themselves. While both Heukelom (2014) and Grune-Yanoff (2015) provide outsider histories of intertemporal choice, they do so largely without the broader social context that these researchers were concerned about. By going through archival documents, published and unpublished materials, as well as printed interviews, I found that these researchers were interested in intertemporal choice not just out of intellectual curiosity, but were attempting to address social issues of their time. Finally, I argue that these researchers created a model that opened back up biological and cultural bases for normative (psy expert) power and racism.

Often these histories of intertemporal choice histories primarily focus on the role of economics in the development of behavioral economics at the expense of psychology and other factors. Grune-Yanoff (2015) and Heukelom (2014) both find that there was little direct interdisciplinary work done between psychology and economics.<sup>58</sup> Rather, in response to the exchange and especially the diversity of measurement disappointment, economists and psychologists developed substantially different concepts, models, methods, and explanatory strategies. Instead of integration, the interdisciplinary exchange therefore is best seen as an inspiration to develop and modify the respective discipline-specific concepts, theories, models and methods. Psychologists worked to expand their expertise, particularly with mathematical

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<sup>58</sup> As Grune-Yanoff (2015) states, "...behavioral economics, at least with respect to intertemporal choice, is not a (re)unification or integration of economics and psychology, as often claimed in the literature (e.g., Camerer 1999; Frey and Stutzer 2001)."

modeling, which allowed for a kind of ‘trading zone’ between psychologists and economists, although it was only with a core set of researchers.

It is this early history of scientific theory and research of intertemporal choice and reaction time that I wish to connect to the development of behavioral economics. Specifically, I will show how the history of scientific racism, along with biological determinism, has continued with the background assumptions of behavioral economics and its related policy recommendations. Though I will be focusing on behavioral economics, I will show that these racialized assumptions about reaction time and cognitive ability continue in related fields, such as social cognition and affective neuroscience (Cartwright 2018). These early developments in behavioral economics (1970s-early 1990s) led to the two current dominant explanations for impulsive behavior: dual-process theory (DPT) and hyperbolic discounting.

With the exception of Heukelom (2014), other historians of behavioral economics have tended to downplay the role of DPT and hyperbolic discounting in the development of the field. These historians instead tend to divide behavioral economics into two temporalities: new and old. For instance, Sent (2004) describes the old behavioral economics as scrutinizing “the implications of departures of actual behavior from the neoclassical assumptions.” Old behavioral economists would include Herbert Simon, James March, George Katona, and many others. While the new behavioral economics relies heavily on experiments, not to discredit neoclassical economics but to refine it with experimental controls, through field experiments, field data, computer simulation, brain scans, and so on. Although Sent’s historical dichotomy between old and new behavioral economics, it does not go far back enough, and tends to focus on the work of Kahneman and Tversky while ignoring the contributions of Richard Herrnstein, as well as the “cognitive-behavioral synthesis” that comes to be largely defined through dual-process theory. Richard

Herrnstein made his experimental finding central to the problem of intertemporal choice for behavioral economists from the 1970s to the 1990s, and how this finding brought back into focus differences in reaction time and cognitive ability between individuals and groups. Whereas Walter Mischel defined his work in terms of self-control and intelligence, his later work was framed within a DPT paradigm. As I will show, DPT in this context, became nearly identical to the law of economy that we explored in chapter 2.

These researchers are important today because of their synthetic approach to the study of economic behavior. While such a hodgepodge approach presents itself as paradoxical, the work here is remarkably consistent in terms of experimental procedures, quantitative measures, and plausible theoretical explanations. Through these shared practices and results, what we have is a new field, behavioral economics. Behavioral economics is thus primarily based on (subjective) choice over time, measured by one's reaction time (as in the choice reaction time paradigm, described in the introduction chapter). The idea being that when a subject makes a quick choice, they may be responding impulsively (an overriding of System 2 to satisfy System 1), or if they attempt to delay gratification as part of a choice reaction time study (such as Mischel's marshmallow paradigm). Although most behavioral economics work is broad, preferring to discuss the "irrational" choices of the "average person" or saying something about human nature, they nonetheless have repeatedly pointed out consistent differences between people's reaction times. As their focus on anomalous lifestyles or "sins" suggests, they are primarily concerned with understanding deviant behavior, and making suggestions (based on their research) for policies that police such *reaction time deviants*. Here we see the problem of race within a supposedly "color-blind" paradigm of science.

## THE RISE OF SELF-CONTROL RESEARCH

Psychology, like so many other disciplines, was radically reshaped during, and immediately after, WWII. Throughout the 1940s and onwards, there was an increase in state and philanthropic funding for science. Psychology had proven itself useful during WWI for recruit screening via IQ tests (Herman 1996). Psychological screening was once again used as a tool for recruit screening, but this time they were concerned with other traits of soldiers, like aggression, impulsivity, and most of all, morale. Interventions, such as John Dollard's *Fear in Battle* pamphlet, showed numerous policymakers that psychology could be used as a tool for social engineering, shaping individual and group behavior for the purpose of war or management. During and after the war, Americans began looking to psychology for answers when it came to self-control problems and delinquency in young boys. Like previous studies on children, it was often the case that such studies were based on a comparison between white and Black children (Cf. Ainslie 1975 for an overview). Throughout much of the history of modern psychology, Black populations have not been the average population for basic psychological studies, but instead have been mostly studied in the context of (usually inferior) school achievement and drug addiction, as historian of psychology Jill Morawski (1997) has pointed out.

In contrast to earlier bio-essentialist approaches to race, other psychologists took a more culturally bigoted approach to race, as seen in the so-called culture of poverty model that effected a variety of social and behavioral scientific fields. The culture of poverty doctrine came to influence educational psychology in a big way (Raz 2013). Again, the focus on attention proved to be a deciding factor in terms of whether people are considered human or not. For instance, lower attention spans in Black children was often explained as due to a deficient household. The growing concern with attention reached (Staub 2018; Stearns 1999) new levels in the 1960s and 1970s with

increasing numbers of ADD and ADHD diagnoses for Black children. The problem of attention was at least in part racialized at this time and the solution was primarily one of self-discipline and cultural “uplift.”

Meanwhile, economists, financiers, and some parts of the general public, grew more concerned over the seemingly irrational economic decisions of enthusiastic consumers (Packard 2007). Although the majority of economists double-downed on Samuelson’s rationality axioms, others, such as Herbert Simon, were not so sure. Indeed, the questions lingered, are consumers rational? Are people capable of delaying their gratification? These questions in the latter part of the twentieth century would eventually put forth the most successful critique of economics since its founding as a distinct discipline. As we saw in the previous chapter, issues over rationality and time preference have been central to economic thinking since at least the mid-1800s. However, it was with the Israeli-American psychologists, Daniel Kahneman and Amos Tversky, that the rationality axioms were questioned on economists’ own terms. Although Kahneman and Tversky are central to this story, I will primarily be focusing on issues of intertemporal choice and the less recognized originators of behavioral economics, including Walter Mischel, Richard Herrnstein, and George Ainslie.

## TEMPTING THE ID

From the 1930s to the 1960s, psychoanalytic theory was incredibly influential in a variety of fields, though primarily in clinical psychology. Many experimental psychologists during this time also referenced Freudian thought, including the behaviorists, Hull and Mowrer<sup>59</sup>, as well as

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<sup>59</sup> Mowrer was interested in how organisms “ready” themselves prior to reacting to a stimulus. Reactions and RT differed depending on the presence of symbols. These experiments seem to be precursors to Mischel’s work. See Lemov 2005 for more on Mowrer’s research and personal life.



the developmental psychology work of Walter Mischel. Mischel believed that Freudian thought could be used to explain his findings in the case of his 1958 study; for instance, that children are driven more by the “pleasure principle” over the “reality principle”. With the popularity of cognitive psychology in the 1950s-1990s, Freudian thought became less popular amongst experimental psychologists, beyond the obvious exception of George Ainslie. In his work on hyperbolic discounting, Ainslie (1989: 11) uses Freud to talk about effort, energy, fantasy, cathexis, and how impulses and defense mechanisms are formed. Or as Ainslie put it, “Freud was the first author to conceive of internal motivational conflict in economic terms.”

Beyond the “quiet” revival of Freud in experimental psychology, IQ testing and RT research continued through the twentieth century as well. The connection between IQ and reaction time became less studied until the work of Walter Mischel and Arthur Jensen. Mischel’s research is unlike much of the previous research discussed from the nineteenth to the mid-twentieth century. For instance, the reaction time research that was done earlier was in testing simple physical reaction time, while Mischel was interested in testing the response time of choosing a smaller reward now or a larger reward later. As mentioned before, Mischel’s response time research was framed as “delay of gratification” and primarily focused on the behavioral response time of children. Specifically, in the Mischel’s marshmallow paradigm (see Mischel 2014 for details), since the child participant was expected to make a choice, such as eating one marshmallow now or two marshmallows later, the researchers would see how long the child could wait with the one marshmallow in front of them to receive a second marshmallow, or how quickly the child would decide to wait or eat. Mischel’s delay of gratification work, which went from the 1950s to the 2010s, went through many transformations over the years. While the general research design was maintained throughout the decades, Mischel’s research went from a behaviorist approach with a

Freudian interpretation (via Mowrer), to a more purely behaviorist approach (via Berlyne), to a more cognitive approach, while also linking to IQ testing. Beginning in 1999, Mischel began to reframe his self-control research in terms of DPT (Metcalf & Mischel 1999), which he would continue to use through the rest of his career (Mischel 2014), citing Berlyne's work as a precursor to DPT.

Mischel's work has been cited in many different fields, and one can see in his work various links to specific areas like child development, economic decision-making, health behaviors, temperament, etc. The most infamous finding by Mischel was the correlation between longer delays of gratification to higher IQ scores. He noted that the lower classes exhibited lower intelligence and lesser capacity for sustained attention and impulse control compared to middle and higher socioeconomic classes. Mischel went on to discuss the social problems associated with lack of impulse control, contending that short delay patterns were often "the partial causes of antisocial and criminal behavior, violence and physical aggression, and failure to achieve reasonable work and interpersonal satisfaction." In addition, Mischel's work was positively cited in the infamous Moynihan Report, stating that the individual's ability to defer gratification correlated with the individual's family structure. That is, children in "fatherless homes" were more prone to immediate gratification compared to homes with a mother and a father; the former family structure being associated with Black families and the latter with white families (Cf. Staub 2018). Such an example is only one of the early policy implications of behavioral research, which we would come to see expand significantly by the 2010s. But first, psychologists had to configure a new arrangement of methods and theories to interact between each other (Freudians, behaviorists, mathematical psychologists, cognitive psychologists), as well as produce enough boundary objects to create an epistemic community with economists.

One such important link was between Freud and behaviorism, which continued in the work of behavioral economist George Ainslie. Daniel Kahneman, influenced by both Freud and Mischel, would first come to bring together experimental psychology and economics with the help of long-time collaborator, Amos Tversky.

#### FROM RATIONAL SUBJECTS TO THE ESSENCE OF BIAS

Ward Edwards was a psychologist in the twentieth century, as well as Amos Tversky's advisor at the University of Michigan. Edwards prefigured behavioral economics in many ways, but in general, he is known as the founder of behavioral decision research. Through his interest in mathematics, especially statistics, Edwards became curious about how psychology could test economic axioms (Cf. Edwards 1954). In his psychological-economic experiments, Edwards would ultimately find that people tended to behave in economically rational ways. Such findings were in part the goal of Edwards' research, which is why he chose supposedly "rational" people to begin with, as in able, mature adults (Cf. Edwards 1961).

Tversky would go on to conduct more psychological-economic experiments in the 1960s. Like Edwards, he was still enrolling supposedly rational subjects into his experiments, but unlike Edwards, Tversky did not have the funding to entice enough "normal" adults to participate (that is, they sought to exclude children, the intellectually disabled, and animals as subjects in their studies). Instead, Tversky had to rely on incarcerated men as participants in a few of his own experiments. Tversky paid his subjects with cigarettes but was careful to enroll only subjects with a "high enough IQ" as to resemble the rational subjects found in previous behavioral decision theory experiments (Tversky 1967). After finding some interesting differences between these

prisoners and rational expectations, Tversky became more interested in systematic cognitive errors that challenged rational choice axioms.

Tversky's most famous collaborator was Daniel Kahneman. Before his work with Tversky, Kahneman was most known for his research on attention, as described in his book, *Attention and Effort*. In this book, Kahneman (1973) argued that by studying changes in pupil dilation (and timing it), psychologists can predict effortful cognitive processing. On this basis, Kahneman (along with Tversky) would go on to argue that people rely on heuristics to reduce cognitive effort. Kahneman also discussed the relationship between inattention and perceptual bias, but his unique contribution was arguing for parallel processing of information. Many psychologists would come to agree with Kahneman's theory, bringing his experiments under the embryonic subfield, social cognition. Much of this attention research would be framed in terms of reaction time and choice reaction time (Cf. Kafry & Kahneman 1977; Kahneman 2003). The idea of mental energy was ostensibly reworded as "cognitive effort" and "cognitive load". Many other social cognition researchers would take up the task of studying and theorizing cognitive load, but what is most important for now, is that cognitive load forms the basis of DPT later on and is similar to "mental energy" in the nineteenth century "law of economy" paradigm in experimental psychology (Cf. Pettit 2013).<sup>60</sup> What these theories all have in common is that people have limited brain power, and that we must balance it in some way. Since we cannot always balance this energy consciously, our unconscious information processing system will balance it for us, which can lead to automatic behavior, including habits and cognitive biases.

Kahneman's initial work on IQ testing showed him that some people are able to take on a larger cognitive load than others. In his 2011 book, Kahneman wrote, "People who are cognitively

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<sup>60</sup> Note that DPT is not just from BE exclusively, by any means. Shiffrin & Schneider's 1977 papers are often cited as the first dual-process model in cognitive psychology terms.

busy are also more likely to make selfish choices, use sexist language, and make superficial judgments in social situations.” He also wrote that “A series of surprising experiments by the psychologist Roy Baumeister and his colleagues has shown conclusively that all variants of voluntary effort—cognitive, emotional, or physical—draw at least partly on a shared pool of mental energy. Their experiments involve successive rather than simultaneous tasks.” It is clear from these quotes that Kahneman still maintains a “cognitive effort” model of the mind and the differences between individuals in terms of how substantial a load they may handle before “selfish choice.” Moreover, Kahneman (2011) gives a positive review of RT-type experiments, self-control experiments, and DPT, the latter of which is the central way that Kahneman frames his work and psychology and BE as a whole.

Kahneman’s view of DPT, self-control, attention, and cognitive load did not come from his experiments alone but was in many ways inspired by other psychologists. When Kahneman came to the US, he had a chance to study with well-known psychoanalyst and clinical psychologist, David Rapaport. Through Rapaport’s reading group on Freud’s work, Kahneman became fascinated with the idea of experimentally testing Freud’s theory. Reflecting decades later, Kahneman points out the influence of Freud’s thoughts on mental energy and his own in regard to attention cathexis (Kahneman 2002).

The influence of Rappaport and Freud did not mean that Kahneman wanted to switch to psychoanalysis or clinical psychology. Kahneman’s short time as clinician proved to himself, as he put it (see Kahneman 2002), that he did not have the emotional requirements to support patients, but most importantly, Kahneman could not stop his fixation on mathematics and experimental practices. In part inspired by his wife, Kahneman moved from correlational psychology to psychophysics in order to study the interaction between eye movement and attention. After

witnessing the effect of cognitive and perceptual distraction during his eye movement experiments, Kahneman then became interested in other ways of studying attention and the limit of cognitive resource distribution. His next psychophysics thus focused on attention and cognitive tasks. The result of this work, for Kahneman, seemed to validate his intuition about cognitive overload and the general deficiency of human intellect. This would inspire Kahneman's approach to behavioral decision-making theory and experimental research.

Kahneman's desire to try his hand in a different experimental paradigm was ignited after reading some of Mischel's delay of gratification experiments. It was the simplicity, yet obviously profound, structure of Mischel's experiment that inspired Kahneman to consider similar simple question approaches, which he began with Tversky some years later. After inviting Tversky to give a lecture in his class, Kahneman and Tversky began talking with one another, forming a decades-long friendship and partnership (Lewis 2016). It was Tversky who introduced Kahneman to economic theory and much of mathematical psychology; however, Kahneman was quick to absorb these concepts and help turn them into simple experiments. It was also Kahneman's fixation on human error and cognitive load that would ultimately become the distinctive approach to the "heuristics and biases research program." Although Kahneman and Tversky were interested in environmental influences on cognition, they also conceived of their models in biological and evolutionary terms.

## THE EVOLUTION OF IRRATIONALITY

Kahneman and Tversky never cited Simon in their early works, and while Simon is often considered the "father" of new behavioral economics (Whitehead et al. 2017), his influence only gained traction in the mid-1980s; this was due to Wanner's promotion of Simon's work and

Kahneman and other Russell Sage behavioral economics advisors having adopted Simon's title of the field, "behavioral economics." There may be several reasons why Kahneman and Tversky did interact with Simon's work during the 1970s and early 1980s, but I will just focus on a couple important theoretical differences between them. While Kahneman and Tversky popularized "heuristics" as a cognitive approach in JDM and BE, it was Simon who was perhaps the first to use the term in this capacity. To remind the reader, heuristics refer to "shortcuts" of cognitive processing in order to reduce cognitive load (a speedy reaction time and system 1 function in later terms). Importantly for Simon, an individual in a particular environment could improve their heuristics over time. This simply means that for Simon, people's minds are quite plastic and tend to learn and adapt to their environments. If a cognitive shortcut is causing errors, over time, conscious or not, we will eventually change such heuristics into ones that cause less error. On this point, Kahneman and Tversky may agree to some extent, but more fundamental to them is the limit that people have to learn their way "out of" cognitive error. Instead, Kahneman and Tversky argue that heuristics are part of a given, largely unchanging, biological makeup for any given person. That is, heuristics are a biological (or neurological to be more specific) part of human information processing machinery (Tversky & Kahneman 1974: 113). The split between Simon and later Kahneman and Tversky is important for understanding the basis of dual-process theory, as well as hyperbolic discounting.

Kahneman and Tversky had a similar theoretical tension with Gerd Gigerenzer; the difference being while Kahneman and Tversky never made explicit how their view differed from Simon, the conflict with Gigerenzer was quite public, and likely personal, at least for Amos Tversky (Lewis 2016). Like Simon, Gigerenzer believed that people could improve their cognitive shortcuts. Unlike Simon, Gigerenzer believed that evolution is the central reason for why we have

good instincts and heuristics early on, and why our minds are so quick to adapt to new situations. Since humans are such a durable species, Gigerenzer tends to argue against system 1 being biased; rather, system 1 is like our gut reaction and tends to have effective heuristics.<sup>61</sup> In "How to make cognitive illusions disappear: Beyond "heuristics and biases," Gigerenzer (1991) would go against the "heuristics and bias" program of Kahneman and Tversky, creating quite the kerfuffle in the fields of JDM and BE. What Gigerenzer did in this article was present a number of refined experiments and extensive data that Gigerenzer believed made cognitive biases "disappear;" in effect challenging the veracity and reliability of Kahneman and Tversky's work. This criticism of their work made Tversky irate, and he demanded that Kahneman help him write a rejoinder immediately. In their response, Kahneman and Tversky (Kahneman & Tversky 1996) argued against Gigerenzer's methodology and interpretations of their work. Kahneman and Tversky argued that people may have "rational" gut feelings some of the time, but they were more interested in the (at least for them) predictable anomalies in (economic) decision-making.

Although the controversy was never resolved (if that is even possible; for example, see chapter 10 of Sismondo 2010), it helped refine the standard interpretation in at least American behavioral economics. Gigerenzer is often cited in behavioral economics, but not nearly as much as Kahneman and Tversky, particularly in America. What Kahneman and Tversky seemed to confirm is that most people act rationally for most of the time, but there are predictable ways that they do not act rationally (in the normative economic sense). For instance, when there are visceral temptations (Loewenstein 1996), or when one tries to estimate future risks (Finucane et al. 2000).

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<sup>61</sup> Kahneman and Tversky were certainly not against evolutionary explanations of human thinking. For instance, Kahneman (2003) explicitly sees DPT in evolutionary terms. However, there was a split between Kahneman and Tversky (1996) and evolutionary psychologists Cosmides & Tooby (1996). The main difference between these two camps would be that the latter saw percentage thinking as endemic to evolutionary human cognition, and the former saw frequency thinking as endemic to evolutionary human cognition.



For these “predictably irrational” cases, behavioral economists tend to recommend more paternalistic policies.

#### FUTURE DISCOUNTING IN PIGEONS AND CRIMINALS

Richard Herrnstein is one such underrecognized figure in the development of behavioral economics, despite his central role in organizing the first behavioral economics working group. As I will argue, Herrnstein’s matching law was the catalyst for the intertemporal choice and self-control research of behavioral economics (and also influenced “applied behavioral analysis”). Despite this point, Herrnstein’s early contributions are less detailed in any history of behavioral economics, which is a curious finding. I suppose that there are a few reasons for this; for one, Ainslie’s research made some extensions to Herrnstein’s work, and Ainslie was more prolific in the field of behavioral economics than Herrnstein. Furthermore, Herrnstein passed away before completing his book on behavioral economics (posthumous papers were published by Howard Rachlin and David Laibson), as well as the “behavioral revolution” around the time of *Nudge* in 2008. Of course, a more compelling reason, I would say, is that Herrnstein’s work on IQ overshadowed his behavioral research, and due to the controversial nature of this work, Herrnstein was likely purposely left out by other behavioral economics historical accounts.

Herrnstein can arguably be said to be the intellectual descendant of two streams of earlier psychology research: comparative psychology (through behaviorism) and differential psychology (via IQ research). Comparative psychology developed originally from the works of George Romanes, who was Darwin’s protégé (as discussed in chapter 2). Romanes wished to understand the mental evolution of man through comparing the mental abilities and reflexes of the average human (actually White, bourgeois, educated men, such as himself) to animals and disabled people.

While Romanes' research was thoroughly criticized by later psychologists, such as Edward Thorndike, much of the work of behaviorism is based on this premise of comparing the behavior of animals (in experimental settings) to the behavior of humans.<sup>62</sup> Herrnstein continues this work through his pigeon experiments, even utilizing the 'Skinner Box' in his matching law experiments on pigeons, though with two levers rather than Skinner's one lever. Like behaviorism, sociobiology and evolutionary psychology came from this early line of comparative research. While Herrnstein was never an outright sociobiologist, his works can be seen as having much in common with this field. For instance, Herrnstein positively cites Richard Dawkins in his behavioral economics work, specifically to discuss the adaptive nature of the matching law, and Herrnstein has discussed the need to understand differences in adaptability related to IQ and discount rates.

As I mentioned, behaviorism was also interested in RT when it came to behavioral choices; however, the quintessential behaviorist paradigm was about stimulus and response. There was usually a time element in these S-R experiments, but time was not usually explicitly measured ("reinforcement schedules" was one such way that that time was measured in some behaviorist experiments). It was not until the 1960s that Chung and Herrnstein brought back reaction time in a substantial way to Skinner's behaviorist paradigm. While Herrnstein ran, and then closed Skinner's pigeon lab, this method continues in other experimental paradigms using human and animal subjects today. Moreover, key to the behaviorist approach was the notion of a passive subject learning how to react to a given stimulus. The goal of this approach was to understand the process of habit formation. Skinner would take this research goal and make it into a political goal

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<sup>62</sup> See Simmons (2020) for a historical study of the role of animal subjects in behaviorist research. As Simmons (2020) states, "The simple minds" of the animal subjects "came to model 'feeble-minded' victims of eugenic segregation and violence."

in his book, *Walden Two*, and as I will argue, nudge does this as well, but in a less obviously structured and utopian way.

As I argued previously, Herrnstein's matching law was the catalyst of behavioral economics. The matching law was also Herrnstein's primary research topic, along with IQ research, from the 1960s-1990s. The matching law is a quantitative model expressing how animals distribute their choices among various alternatives. It states that animals match the distribution of their choices to the distribution of the reinforcers for those choices. In other words, rates of reinforcements vary dynamically, proportional to the rate of responding, showing that subjects will adapt to obtain more immediate rewards (hence, a hyperbolic curve). Herrnstein calls his matching law a "more precise and focused specification of the traditional [Thorndike] law of effect and of common sense regarding reward and punishment." While others compare it to the Weber-Fechner law. Since both the law of effect<sup>63</sup> and the Weber-Fechner law have also been compared to the law of economy, it may be safe to say that these laws construct a model of the human that is immediately sensitive to the stimuli in the environment, but this sensitivity becomes adaptable over time, either by rational consciousness or from the automatic unconscious, as DPT argues. While Herrnstein did not seem to appreciate the economic implication of this 'discovery' of the matching law, by the 1980s he became interested in what this finding could mean for policy and how it could be the basis of behavioral economics.

Herrnstein's eclectic sensibility affected George's Ainslie's work as well. Ainslie, like Mischel and Mowrer before him, attempted to combine Freudian insights with behaviorist experimental models (culminating in his 1992 work, *Picoeconomics*); though Herrnstein never

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<sup>63</sup> Gere (2017) also points out that the law of effect, coined by Edward Thorndike, has its origins in the work of Herbert Spencer and Alexander Bain.

seemed to engage with Freudian literature in much depth. Ainslie was a psychiatrist that came to Herrnstein in the 1960s for guidance, given his limited experience with behavioral experiments at Harvard. Herrnstein put Ainslie under his own student, Howard Rachlin. However, in the 1970s, Ainslie realized that the matching law implied a hyperbolic discount curve. The concavity of hyperbolic discount curves could explain “preference reversal” behaviors (as described by Paul Slovic and others previously), which is when actors prefer a larger-later reward over a smaller-sooner one when both rewards are fairly distant but switch to the smaller-sooner reward as time passes. It was Ainslie's interdisciplinary theoretical approach and methodological synthesis that made the initial connection between the matching law and hyperbolic discounting, and the ramifications of this connection, that “nudged” Herrnstein to apply his own work to BE.

It would be wrong however to think that Herrnstein's IQ research<sup>64</sup> never overlapped with his matching law and BE research. In *Crime and Human Nature*, co-written by James Q. Wilson, Herrnstein applies his matching law research to criminals. The authors state that criminals are more impulsive than noncriminals; they further connect impulsivity to time discounting (as in the matching law, as they even show hyperbolic curves of the time discount function) and to the intelligence and personality traits of this “impulsive criminal” type. “Individuals differ in the degree to which they discount the future. These differences are often part of a personality trait that can be measured...They may also differ in their ability to conceive of the future or to plan for it. They may lack the imagination, experience, or intelligence to commit a crime that requires planning or to visualize what state of affairs may exist long in the future when the benefits of noncrime become available. This may help to explain why criminals tend to be less intelligent than

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<sup>64</sup> Noam Chomsky and Stephen Jay Gould were vocal critics of Herrnstein's IQ work. See also Cohen-Cole (2014) and Staub (2018).

noncriminals...” (Wilson & Herrnstein 1985: 54). Similarly, in 1990, Michael R. Gottfredson and Travis Hirschi, wrote that poor impulse control explained all criminal behavior. More recent research makes the same or very similar argument in regard to hyperbolic discounting and criminal risk-tasking (Cf. Utset 2007; McAdams 2011; Winden & Ash 2012). Wilson and Herrnstein also describe these differences in time discounting when they endorse the culture of poverty thesis (1985: 487), stating that Black families have “short time horizons.”

After Herrnstein’s passing, his two lines of research were further explored by his previous mentees and collaborators. For instance, Howard Rachlin and David Laibson compiled and edited Herrnstein’s papers and chapter drafts he had written for a book on behavioral economics, which Rachlin and Laibson titled *Matching Law*. Laibson credits Herrnstein for inspiring his own hyperbolic discount rate, which is quite possibly the most influential discounting model in BE. Moreover, Herrnstein’s co-author of *The Bell Curve*, Charles Murray continues to bring together an analysis of IQ in respect to differences between racial groups. Murray was also well aware of Herrnstein’s work on the matching law and related reaction time research. For instance, in the afterword to *The Bell Curve*, Murray wrote, “Reaction times on elementary cognitive tasks that require no conscious thought, such as responding to a lighted button, show a significant correlation with IQ scores,” (1996: 561). This and many other quotes highlight Herrnstein’s, and other ideological allies’, belief in the connection between reaction time and the unconscious, between impulse control and intelligence, so while Herrnstein never cited DPT, there is no reason to think that his work was incompatible with such a premise.

## THE STRATIFIED ORGANIZATION OF THE BRAIN AS A FIRM

Richard Thaler was not a close collaborator with Herrnstein; however, he did work with Herrnstein by participating in the latter's "Intertemporal Choice" working group, funded by the Russell Sage Foundation. Thaler was trained as an economist, though he was not enthusiastic about the field during much of his graduate career. Originally, Thaler was writing a thesis about why the infant mortality rate in the US was twice as high for Black as it is for white populations. Unfortunately, after controlling for all of the obvious variables, Thaler could only explain half the difference (Thaler 2015). He went on to write another dissertation about how to calculate the worth of an individual human life. During the writing of this work, Thaler began questioning economic theory and set out to survey his colleagues regarding how much they think a given individual's life is worth. Their answers were magnitudes apart from one another. Thaler then began making a list of irrational things people did, for which economics couldn't seem to explain. During this period, Thaler (along with his advisor, Sherwin Rosen) went to an academic conference in Monterey, California, where he met psychologists/decision scientists Paul Slovic and Baruch Fischhoff. Thaler was completely taken by these psychologists and their work, and during a drive with Baruch, he learned about Baruch's advisors: Daniel Kahneman and Amos Tversky (Thaler 2015). After the conference, Thaler found Kahneman and Tversky's papers and became an ardent follower of their ideas. Since he was a trained economist, Thaler was able to bring Kahneman and Tversky's findings into economic models in a way that was more attractive to other economists (probably because Kahneman and Tversky were psychologists and Thaler was an economist).

After his initial interest in Kahneman and Tversky's work, Thaler went on to describe a number of economic behavior anomalies in his work. Thaler even had a byline titled "Anomalies" in a well-known economics journal. Thaler's newfound productivity led him to being introduced to Wanner via Kahneman, later becoming an asset to the Russell Sage Foundation Behavioral

Economics Program (Heukelom 2014). Through the Foundation's funding, Thaler went on to publish two books in the early 1990s related to behavioral economics, *The Winner's Curse* and *Advances in Behavioral Finance*. Later, Thaler would meet the lawyer Cass Sunstein, whom he would go on to collaborate with on a 2003 paper titled, "Libertarian Paternalism is not an Oxymoron," a precursor to their 2008 highly popular nonfiction book, *Nudge* (to be discussed in further detail in another section).

Thaler's biggest theoretical contribution in his early work was his dual-agent theory. This was the idea that there are two "selves" in a single economic agent competing for decision-making dominance. Since contemporary DPT models were only just being born out of social cognitive psychology, Thaler did not initially reference DPT. Thaler instead cited neurological and neuroscience articles that claimed to provide neural correlates to (at least) two different parts of the brain for different kinds of information processing. Richard Thaler and H.M. Shefrin (1980; 1981), present their dual-agent, or dual-self, model in terms of a doer (later, system 1) and a planner (later, system 2). Thaler and Shefrin further contextualize the internal conflict between the planner and doer in an analogy to the organization of firms; wherein, the authors state that system 1 is like a "selfish" employee, and system is the paternalistic manager. The issue for the firm, as well as for the divided actor, is when the lazy worker does not accomplish, or perhaps even undermines, the tasks set by the careful planner/manager's goals. The goal of BE is then to side with the manager and properly incentivize the doer to ally itself with the planner's goals. That is, BE tends to assume and support the dominance of system 2 processing over system 1. We can then see how BE, from its origins, is not an attempt to completely throw out economic theory; instead, BE is interested in how to make people behave more like rational economic agents. The goal of the behavioral economist is therefore to persuade the employee part of the self to cooperate with the manager part

of the self. Thaler would use this model to frame his later nudge policy work (Thaler & Sunstein 2008).

#### INTERTEMPORAL CHOICE AND THE MAKING OF BEHAVIORAL ECONOMICS

The biology of behavioral economics was also apparent in the work of other “new” behavioral economists, who can be found in one of the first edited volumes of behavioral economics, *Choice Over Time* (Loewenstein & Elster 1992). *Choice Over Time* was not simply a collection of chapters by people in the field of behavioral economics; instead, this book was the result of four years of meetings between most of the contributors. This intertemporal choice group was the result of much planning and funding on the parts of Eric Wanner and Richard Herrnstein. Eric Wanner, after completing his PhD studying cognitive science, worked for the Sloan Foundation, and then became President of the Russell Sage Foundation.

Before further examining the importance of the first foundationally-supported behavioral economics research program and working group, we should briefly understand the pivotal role that Wanner, and these foundations played in the development of behavioral economics. While working with the Sloan Foundation to foster new research groups for social issues, Wanner was tasked to develop a program that did not focus too much on economic theory, but rather empirical findings. Having already worked with numerous psychologists, Wanner knew how to network, and once he met Kahneman and Tversky at a 1982 cognitive science conference, he proposed starting an interdisciplinary research project (with Sloan Foundation funding) with the pair of psychologists. With Kahneman and Tversky, and other economists and psychologists on board (which, at times, included William Baumol, Leon Festinger, and Herbert Simon, amongst others), the project grew into different working groups, texts, conferences, and research retreats. Soon after



Wanner became president of the Russell Sage Foundation in 1986, nearly 50% of the research budget went to the BE program.<sup>65</sup>

However, it was in 1985 that the first behavioral economics conference was held; this conference was about intertemporal choice and included many of the psychologists and economists, such as Thaler, Ainslie, and Loewenstein. The conference was successful in bringing a wide range of interdisciplinary work; however, it was not until late 1987 that Herrnstein and Wanner began exchanging memos to discuss setting up a possible working group and conference together. During this time, Herrnstein believed that his finding of a “matching law”<sup>66</sup> of behavior could be useful in the development of behavioral economics, which is why he reached out to Wanner in the first place. Indeed, Herrnstein’s work already proved invaluable to the earlier behavioral economists during the 1970s.

Wanner, who was reportedly being pressured to better organize the Behavioral Economics program by the Sloan Foundation supervisory board (Heukelom 2014), agreed with Herrnstein in setting up an interdisciplinary research working group with a yet to be decided central topic; however, Wanner wanted Herrnstein to do most of the recruiting for the working group. Correspondence between the two men confirms much discussion over who to invite to the group, as well as budgets and issues over funding (such as how much to pay each member of the working group per meeting). In addition, Herrnstein leveraged his position in the working group to not only provide funding for the group’s participants (including travel grants), but he also received a

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<sup>65</sup> In addition, Wanner funded three research groups to meet and discuss their work. These groups were funded by topic: 1. Intertemporal Choice 2. Behavioral Finance 3. Economic Sociology. Although there is much I could say about the latter two funded groups, for the purpose of this paper, I will be focusing on the first group since their work is what developed into *Choice Over Time*.

<sup>66</sup> This law “predicts temporary preferences for poorer, earlier alternatives when they are imminently available, a phenomenon that has been directly observed in both animals and man, and which provides a paradigm for self-defeating behavior.” (Ainslie & Haslam 1992: 58).

generous amount of funding for his work in organizing the group. The funding Herrnstein received was not only for the intertemporal choice working group, but there also included requests for additional funding for his controversial IQ research.

Once Herrnstein recruited Howard Rachlin, Ronald Heiner, Drazen Prelec, and the aspiring young scholar, George Loewenstein, it was time to figure out how the working group would in fact work together and decide on the topic that would be the collective focus of their individual research projects. In Herrnstein's April 1988 memo to this initial working group, he states his desire for a practical focus for the group. Herrnstein had great ambitions for the group; he stated that the point of the group should be to get the economics community and the rest of the world to pay attention to behavioral economics. In order to do this, the group would have to obtain additional funding beyond the philanthropic efforts of the Russell Sage Foundation; Herrnstein suggested the Chicago and Harvard Business Schools as possible sources of such funding, which is interesting since behavioral economics would later become a crucial approach to business schools in the twenty-first century, but at this time, the connection between the two was relatively thin. In order to obtain funding from these schools, Herrnstein suggested defining a research topic that these schools would find desirable. Herrnstein's research topic suggestions included substance addiction, buying insurance, or managing individual debt, or other contexts where consumer behavior systematically deviates from optimality (from a normative economic theory perspective). It was not until September 1988 that the group had expanded and became focused on intertemporal choice models as their key research theme, due in large part to Wanner's support through the Russell Sage Foundation.

Wanner's other behavioral economics projects included the visiting scholar program, and later, the Russell Sage Foundation Book Series. It is documented (in Heukelom 2014) that while

still working for the Sloan Foundation, Wanner was pressured by Albert Rees (President of the Alfred P. Sloan Foundation at the time and former Princeton economist) Wanner to create working groups and to get scholars of behavioral economics to move away from just criticisms of the standard economic model. However, this was not exactly the case in these working group meetings, as evidenced in the *Choice Over Time* preface, as well as the archive documents. The central criticism of the standard economic model by the *Choice Over Time* contributors is the discounted utility<sup>67</sup> (DU) model (as initially proposed by Paul Samuelson; see previous chapter). The main problem these behavioral economists had with DU was its inability to predict real life behavior. This was important as the group increasingly focused on social issues and public policy, including poverty, crime, financial savings, and substance use. After the Intertemporal Choice working group ended in 1992, behavioral economists primarily turned toward theoretical possibilities of integrating BE into microeconomics, as well as trying to find the next novel experimental finding. However, the interest in practical applications of BE to policy reached new heights in the twenty-first century, thanks, in part, to the ongoing support of Wanner and the Russell Sage Foundation.

## CONCLUSION

This chapter has contrasted with previous histories of “new behavioral economics,” as defined by Sent (2004), by showing the central role of the behavioral economics intertemporal choice working group in the 1980s and 1990s in the setting up the research agenda of the field. This can be seen in how the working group discussed time preference as interchangeable with

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<sup>67</sup> This is a model of future consumption that indicates that it is invariant with respect to a person’s immediate wealth or consumption plans.

delay of gratification and self-control, and how they speculated on the policy and applications of such an empirical behavioral approach. These previous historical works (such as Sent 2004 and Heukelom 2014), therefore make a mistake by divorcing the development of behavioral economics from its material, social, and political context; that is, to separate knowledge from its production.

The materiality of behavioral economics can be further understood through its psychometric and biometric devices and concepts. We saw in this chapter the continued use of reaction time measurement as a means of obtaining the “truth” of the human subject. The reaction time measures increasingly became used in mid-twentieth century experiments over choice and behavior. Reaction times became foundational for behavioral economics through the “matching law” experiments of Herrnstein and Ainslie. It was also Ainslie who connected RT to economic theories of (consumer) discount rates; eventually, culminating in the development of (quasi-)hyperbolic discounting, a current trendy concept in behavioral economics research (which we will further explore in the following chapter). As behavioral economists in the 1970s and 1980s were trying to theorize about reaction time and discount rates (as measures of/stand-ins for self-control or delay of gratification) they increasingly relied upon models of dual-processing.

In many ways dual-process theory was a galvanizing model that allowed multiple research programmes to unite, from behavioral economics to social cognition, to affective neuroscience to user-experience design. Part of what made DPT so productive for cognitive and behavioral research was its basis in biology. Early on its development, neuroscientists had various descriptions of the neurological structures of each processing system. The biological component of DPT is not just neurological but is also evolutionary. Echoing the evolutionary theories of the nineteenth century that fueled much race science, today’s DPT relies on similarly culturally derived metaphors to describe seemingly universal and ahistorical affective and cognitive

processes that are explained by natural selection and individual differences. These descriptions of human thinking are problematic in that it suggests that intelligence is a clearly defined and essential trait of normal human adults, which is due to more recent evolutionary development; people who do not have such a defined trait therefore resemble earlier homo ancestors and animals. DPT is thus not only about the differences between cognitive processing systems but is a theory of time: evolutionary time (human vs. animal), reaction time (physiological vs conscious), and time preference (delay vs immediate time to gratification).

Ultimately, these examples show a clear cognitive hierarchy that privileges and celebrates certain traits while pathologizing and penalizing other traits. The cognitive elitism inherent in DPT and behavioral approaches to economic agents is not unlike previous intellectual elitism that we have seen in racist scientific studies from the nineteenth century. To discuss “self-control,” “emotional regulation,” and “intelligence,” without acknowledging the racial history behind it is a form of symbolic violence that erases colonial and white supremacist arguments (e.g., Ciccariello-Maher 2010). The anti-black politics in psychology continues today in current attempts to find statistical proof of racial differences in IQ and other psychological traits (Winegard, et al. 2020; Colman 2016; Pesta 2016).

Even if we ignore the biological basis of behavioral economics and DPT, these concepts can easily be applied to other cultural/environmental forms of racism in similar ways. The racist social ecology of behavioral economics can be seen in the way that it has dealt with race, racism and poverty. In terms of race, behavioral economics is relatively silent, but has tended to implicitly support “color-blind” science. Many behavioral economists, such as Cass Sunstein, have supported implicit unconscious bias (a system 1 problem) as the cause of racism in society. It is lucky for society, according to such behavioral researchers, that psychologists have developed implicit bias

training to eliminate racism from society. Of course, this is not so; such individualized forms of racism miss out on structural determinants (as Kahn [2017] and others have pointed out). Finally, poverty has been addressed in behavioral economists, not by an overhaul of economic structures, but through behavioral targeting. Behavioral economics as a political epistemology places poor and working-class people as particularly vulnerable to self-destructive tendencies, such as impulse buying and eating, drug use, criminality, and more. However, this chapter is only meant to introduce the initial development of nudge policy; the following chapter will address more current issues within behavioral economics and nudge policy. These issues include political differences in the applications of nudges, as well the generality of nudges and other epistemological and ontological splits within behavioral economics.

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**Chapter 4**  
**STRATEGIZING A SCIENCE OF ANOMALIES:**  
**Boundary-Work in Twenty-First Century Behavioral Economics**

Between 2008-2016 numerous think tanks, academic conferences, policies, publications, and business school hires were informed by or focused on behavioral economics (i.e., Geiger 2017; Whitehead et al. 2017). While the field has been promoted and criticized from inside and outside the field (i.e., Sunstein 2016; Kapeliushnikov 2015; Thaler 2015; White 2013), there has yet to be a qualitative study of how behavioral economists think of their work and the status of the field, particularly after the field's largest boom to-date in both public and private spheres. Through these interviews, we shall see how behavioral economists position their field, how they navigate the complexity of interdisciplinary studies, and the construction of akratic subjects (or viewing people as “weak-willed” or “myopic” in their decision-making). In other words, behavioral economics is a case study in which to observe how researchers connect problems of the field to problems of the subject in order to expand and maintain legitimacy and expertise.

Behavioral economics is typically defined as the application of behavioral methods to economic problems (Wilkinson & Klaes 2017). The interaction between psychology and economics has a long history, including many shared origins in the eighteenth and nineteenth centuries (see for instance, Sent 2004). However, the perceived split in the early twentieth century led to a later perceived overlap between the two by the end of the century. In fact, many commentators have argued that behavioral economics is completely exceptional in its interdisciplinary practice (Thaler & Sunstein 2008), while others have put forward doubts about there being much real interdisciplinary work in the field of behavioral economics (Grune-Yanoff

2015; 2016; and Whitehead et al. 2017).<sup>68</sup> The critics of the orthodox view of behavioral economics argue that behavioral economics scholars tend to stick with the discipline they were trained in, such that experimental psychologists tend to almost exclusively rely on experimental methods, while behavioral economics scholars trained in economics tend to focus more on developing economic theory and formulae.

Related to the interdisciplinary work and marketing of behavioral economics is the way in which behavioral economics scholars have professionalized the field, while simultaneously creating their special brand of expertise via boundary-work (Gieryn 1983). This chapter provides a sociological study of behavioral economics as a field by examining its history and current practices via published academic journal articles, popular press coverage, policy documents, and interviews I conducted with professors and graduate students who consider themselves to be behavioral economists. While I only spoke to individual behavioral economics researchers, their responses gave me insight into the institutional configurations that make their work possible. To take an institutional view is to take infrastructure and material practices (software, hardware, space, paper, phones, MTurk, etc.), as well as the myriad of collaborations between behavioral economists and private companies, and governmental bodies seriously.

An approach to the institutionalization of behavioral economics cannot reify either the rational or irrational subject. Instead, I define behavioral economics experts as embedded in networks of institutions and professional organizations. What seems rational to them is due to a variety of embodied, material, habitual, and affective practices rather than absolute values. Behavioral economics is thus both practical and abstract in that it seeks to derive universal theories from empirical experiments, while also arguing for the application of certain behavioral

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<sup>68</sup> For more on issues related to interdisciplinary studies see for instance, Froderman, Klein & Mitcham (2012).

experiments derived from theories. As Collins and Evans (2008) or Dreyfus and Dreyfus (2005) argue, we can treat expertise as a substantive skill, and emphasize the embodied and tacit mastery of practices that serve as background for rule-like activity.<sup>69</sup> Meanwhile, sociologists of the professions, treat expertise as attribution, they underline abstraction as the distinctive way in which professions make claims. As Abbott argues, professions compete by controlling the abstractions that generate techniques, and this is what makes professions ultimately stronger: “Only a knowledge system governed by abstractions can redefine its problems and tasks, defend them from interlopers and seize new problems” (Abbott 1988: 8–9). While I do utilize these concepts in my chapter, I argue that the interdisciplinary nature of behavioral economics is a more complicated case than many found in the STS and sociology of professions literature.

As an interdisciplinary field, rather than a strict discipline or department, how one is trained and interacts with others in the field is important for research productivity and status. I argue that behavioral economics is a relatively intractable field, amorphous and ambiguous in regard to its goals and axioms, and splintered factions based upon one’s disciplinary department and current department. Rather than a stabilized discipline, such as economics or psychology, I argue that academics who engage with behavioral economics do so in strategic ways. They use what I call ‘reference strategies and pleas to ‘discipline validity’ as means of boundary-work. Reference strategies refer to rhetorical moves that researchers might use to support their statements by referring to previous theories and findings from the field in pragmatic ways in order to avoid or downplay criticism.<sup>70</sup> Similarly, discipline validity is a term (used by more than interviewee) to describe an individual’s view of their field; that is, a statement that shows what a researcher thinks

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<sup>69</sup> For more on the sociology of expertise see Eyal (2019).

<sup>70</sup> For instance, Keith & Rehg (2007), Latour & Woolgar (2013), and Pera & Shea (1991).

of what other researchers in their field believe. We could say that discipline validity can be a particular reference strategy, while both may fall under “boundary-work.” Simply put, boundary-work are the actions that tend to the ways in which science is internally defined as a privileged site of knowledge production (Gieryn 1983). This is usually done by focusing their attention on the distinguishing science from non-science; however, it may also be useful in a case such as behavioral economics, wherein boundary-work is done to differentiate between two fields of science, such as orthodox economics and the new behavioral research applied to economics problems and concepts.<sup>71</sup>

The popularity of behavioral economics is partly due to the way in which its applications have been pitched as findings that are counterintuitive to rational choice assumptions widely held by mainstream economists. This can be seen by how the application of “nudge” to policy (see Thaler & Sunstein 2008) has attracted much consideration and debate inside and outside of behavioral economics (i.e., Whitehead et al. 2017; Schull & Zalom 2011;). Due to the limitations of space in this chapter, we will largely be bracketing debates on behavioral economics and nudge policy from outside the field; however, we will return to these outside criticisms more in the concluding chapter of this dissertation.

Instead, this chapter will examine how behavioral economists define their field. Through such an examination we come to ask many questions, such as how many of these researchers consider behavioral economics as a subfield and tend to label themselves professionally as psychologists or economists? How do behavioral economists account for their own subjectivity and positionality in their research? How do behavioral economists account for history, as well as

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<sup>71</sup> For boundary-work related to behavioral economics see Becchio (2019), Lisciandra (2018), Heukelom (2009; 2014), and Sent (2004).

social inequality, in their work? Answering these questions helps us to see the kind of boundary-work they are enacting through their rhetorical strategies.<sup>72</sup>

This chapter is thus a study of when boundary-making works, and when it does not, by using behavioral economics as its central case. To complete this study, I have separated my chapter into three defined sections before providing a comprehensive discussion in the conclusion. The first section briefly expands on the history of behavioral economics from the earlier chapters to the more recent work in the field in the twenty-first century. In particular, I report the responses some of my interviewees gave me for how they first encountered behavioral economics and what the field looks like today. The second section looks at the differences in theoretical approaches between behavioral economics. Through my research, I found that those trained in experimental psychology tended to favor dual-process theory, while those behavioral economists trained in economics departments favor a more abstract modeling of quasi-hyperbolic discounting. Despite these differences in theoretical approaches, these theorizations ultimately support the notion that people are inherently present-biased. Moreover, I found that theory was used in a pragmatic way; that is, behavioral economic researchers tended to use different theoretical frameworks depending on the experiment, methodology, or targeted audience (i.e., depending on what journal they are trying to get their research published in or whether it is for a private firm or governmental office). The third section deals with methods and methodology in current behavioral economics research. I also found disciplinary differences here, as I did when it came to theoretical models, though they were much stricter about the application of method than they were when it came to theory. Important for our concluding discussion would be the focus on population samples, research task

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<sup>72</sup> On the connection between boundary-work and rhetoric see also Gieryn (1999) and Sismondo (2010).



management, comparisons between laboratory, online, and field experiments, as well as (two recent and related controversial) concerns about replication and open data.

### MAPPING A PARADOXICAL FIELD

The popularization of behavioral economics between 2008-2016 led many people to begin studying the field. This is certainly true of most of the researchers I interviewed for this dissertation. However, since behavioral economics has so often been marketed as a “science of anomalies,” how could it hope to continue to be a “progressive” field with fresh, novel findings? This concern, and other concerns like experimental rigor, sample representativeness, open data, and replication, have seemingly become paramount to current behavioral economists. I argue that the behavioral economists today continue to use various strategies to advocate for the strength and vitality of the field; that is, they must engage in boundary-work to maintain jurisdiction and not be overtaken by competing research programs.<sup>73</sup>

My argument focuses on behavioral economics as primarily an academic research program despite its popularity and use outside of university settings. Besides self-published/insider perspectives, and the occasional interview with an individual behavioral economist, I have yet to see any texts which ask how behavioral economists think about their training and how they manage

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<sup>73</sup> The fixation on method is usually discussed in terms of testable hypotheses in a way that brings forth Karl Popper’s concept of falsification. Outside of Popper, the only philosopher of science that came up in my interviews was Thomas Kuhn (2012). As one interviewee stated, there is no unifying theory in behavioral economics; instead, behavioral economics “is a series of anomalies.” This surface level understanding of Kuhn is most clearly reflected in the work of Richard Thaler (for instance, Thaler 1987). For Thaler, and many other behavioral economists, Kuhn’s discussions of anomalies and paradigm shifts have been useful rhetorical strategies to define behavioral economics as a distinct, and progressive, approach to economics. Thaler attempted to popularize behavioral economics through writing monthly on anomalies of economic behavior; that is, behavior that did not conform to pre-established theories in orthodox economics. In order to normalize these “anomalies,” behavioral economists must come up with a theoretical explanation to explain its regularity. Behavioral economics, for Thaler (see 2015), represented a possible paradigm shift for the field of economics, by utilizing experimental behavioral techniques to test, challenge, and refine previous economic models. This is a stance echoed in my interviews with current behavioral economists.

their position in the field. As behavioral economics is a recently developed field of study, I thought it would be important to find out for myself how individual behavioral economists became part of this burgeoning field.

Before starting, it is important to provide some description of my interview sample. My findings suggest that popular press of the field, departmental differences, and professionalization concerns have impacted the development of behavioral economics. The behavioral and economic researchers I spoke to all had positions in academia; six were assistant professors, four were full professors, one was a postdoctoral scholar, and five were graduate students. Four of these interviews were with women, three of whom were white. I could only recruit one Black behavioral economist for my interviews. Only three interviews total were with people of color. As I will discuss in other parts of this chapter, this is in part due to the fact that behavioral economics has largely been dominated by white men.

One possible limitation of my findings is that since most of my interviews were with “junior scholars,” it may be that they were more likely to use reference strategies, such as discipline validity, as forms of capital (Bourdieu [in Granovetter 2018]), in order to imitate, or at least not explicitly criticize, more established scholars in the field. That said, my sample was not meant to be representative of the field as a whole, nor were my findings entirely homogeneous. Despite there being some connections between these desperate researchers, they nevertheless had diverting approaches to theory, method, and applications in behavioral economics, as we shall see.

### *The Popularization and Marketization of Behavioral Economics*

Considering that the majority of my interviewees began studying behavioral economics after 2008, many were vocal about the early influence of *Nudge* and popular works, most notably

Malcolm Gladwell's *Blink* and Dan Ariely's *Predictably Irrational*, on their intention to enter the field. Nearly all of my interviewees also stated that they were primarily motivated to enter the field in order to have an impact on policy in some manner while still contributing to the behavioral sciences.

One such interviewee, Jasper, a postdoctoral scholar in the Midwest, shared his earliest undergraduate interest was in economics and public policy. After taking some psychology courses, Jasper stated that he began to be highly aware of the many problems of policy only informed from economic models. For instance, he stated that "...when it comes to things like crime, that's probably when they're [economists] most wrong." Based on his more current behaviorally-informed research, Jasper stated that "most people who commit crime probably didn't think about it for a long time, sort of more like out of an emotional state." This therefore goes against rational-choice models that tend to inform policy, according to Jasper. Like most other behavioral economists, Jasper positions behavioral economics in opposition to more orthodox approaches to economics—an argument made clear to Jasper after he read *Nudge*.

Ironically, these researchers who were introduced to the field through popular texts were surprisingly cautious when discussing the more recent popularity and spread of their field. Some of the responses implied that they felt the field was losing its influence on policy and in academic circles. One interviewee, Daniel, an assistant professor at a business school in Utah, became nearly upset when I suggested that the field had grown in cultural, academic, and policy impact. The most common answer from my interviewees was that it was difficult to judge how popular the field actually was, particularly from someone within the field (sometimes they said that this was due to cognitive biases, citing research from their own field as evidence in their interview responses).

Another assistant professor at a business school, stated “It’s hard to say that behavioral economics has gotten bigger from within the field,” but then she went on to say, “There’s a larger portion of students who are like obsessed with this stuff [behavioral economics research],” which seemed like a good indication to her that field was becoming more popular. Other interviewees mentioned an increase in conferences that focused on behavioral economics or behaviorally-informed policy or design (i.e., behavioral exchange) and “nudge units.” Another behavioral economist talked about the popularity of the field to companies, researchers, and policy-makers. Companies became interested because they could “use nudges to sell more to people.” Others noted the rise of status of the field to other economists after Thaler’s Nobel Prize win to support the established value of the field.

Behavioral economics, while popular in certain academic spaces, has also found support via expert consultations (Whitehead et al. 2017). Like certain economists and psychologists, many behavioral economists have engaged in some sort of consulting work. The behavioral economics researchers who worked in business schools talked about teaching professionals outside the university. This could include executive education or teaching negotiation or how to conduct behavioral studies, etc. Some behavioral researchers will run studies with companies. Sometimes this might mean conducting studies to get people to buy stuff they do not want, but more often than not, these researchers suggest that they were doing the right thing when they worked with “good companies.” Most importantly for the scholars I spoke to was the opportunity to publish a unique study through collaborating with these companies.

Since behavioral economics is a “science of anomalies,” it should not be surprising that people in the field place greater emphasis on novelty (Thaler 2015).<sup>74</sup> In a field that generates a great deal of new research publications, behavioral economists have to use their own expertise to come up with witty titles and interesting, if not outright entertaining, experimental designs. Although meticulous in their approach to experiments, ultimately, they want findings that are both reliable and novel. This is in contrast to the field experiments that are done in collaboration with businesses, which certainly want novel applications, but more importantly, want a finding that works; something with statistical significance and that helps their business practices (i.e., profit). Many behavioral economists I spoke to said they only worked with companies for novel research purposes, and by this, they meant for a novel place, sample, and research problem that would unlikely be able to ascertain in normal circumstances.

As I only spoke with professors and graduate students, the vast majority did not work with companies for direct personal monetary gain, but instead used it as an opportunity to do research. Many said they do not want to be paid for this research because they want to publish their findings in an academic journal. One such behavioral economist, another business school professor, stated that “business schools provide faculty with research budgets” in order to “discourage us [business school faculty] from writing grants.” Once again, productivity, usually measured by research publication output, remains a priority for members of the field.<sup>75</sup>

While publications are indeed paramount for behavioral economists, particularly junior researchers hoping to land a tenure track position or to obtain tenure, they are also interested in

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<sup>74</sup> This refers to how behavioral economics is a science that tries to detect “anomalies” from economic theory; or more specifically, how descriptive behavior, as shown by behavioral experiments, often differs from normative economic models of rationality.

<sup>75</sup> For more on the relationship between science and publication production see Latour (1987) and Latour & Woolgar (2013).

solving social problems (though they do not always frame it this way). In fact, some of these behavioral economists see such problems as the main motivation for entering the field. These researchers see their experiments as a means for developing behavioral interventions that can possibly have broader societal effects. Such interventions could include new charity interventions for the poor or other social causes. For instance, Steven stated that,

At the time I was interested in how to encourage donations to charities. Especially to charities working with homeless or near homeless populations, that's why I started coming up with projects to try and encourage donations and so I messed around with different kinds of appeals like how much money is asked for. I tried to do interventions or manipulations and think about how good or bad the economy was at the time and how that influenced donation rates.

Behavioral economists position themselves as unique kinds of experts; they are both practical, yet rigorous in their approach. They know they need to publish research, but they want to do research that they think can make for relatively less politically controversial or economically costly. This positioning, as boundary-work, shows how they differ from standard economic models, as they attempt to be more novel and experimental at studying (and sometimes predicting) human behavior than a standard economist.<sup>76</sup> In general behavioral economists seem to position themselves less as a dying intellectual trend and more of a stable and contributing academic field.

## THEORIZING ECONOMIC BEHAVIOR

I typically asked about theory, models, and theoretical frameworks towards the end of my interviews with behavioral economics researchers. The reason for this largely had to do with the interests of the interviewees who were more likely to want to discuss their methods, findings, and applications than theories. Theories in their mind were something that either helped frame

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<sup>76</sup> On disciplinary boundaries, boundary-work, and psychology see Fils (2016), Masters, Yarkin-Levin & Graziano (1984); Root (2005), and Yen (2010).

hypotheses or, more than likely, to be used to explain novel experimental findings in a way that generalized such individual results.

As we have seen in the previous chapter, behavioral economists have differentiated themselves from previous psychology and economics theorizations of economic actors by fixating on methods. While method is their most important outsourced medium, or standardized package (Fujimura 1992), it is usually accompanied by a model of people (or economic actors) that presents individuals as inherently present-biased. That is, rather than rational choice theories of the human, which is at least implicit in most neoclassical approaches to economic agents, is challenged by behavioral economists. The implications of such a theory vary, as we shall see, but in general the theory is seen as being true in most predictable instances.

The fallibility of humans when it comes to economic decision-making are generally considered to be either due to cognitive limits of calculation (though, as we shall see there is a relationality here to information presentation/infrastructure and calculation) or present-bias, which may be due to impulsive emotions or an innate (not necessarily hereditary determined) preference. Present-bias is usually framed in the former way, as self-regulation failures and limits of will-power. In other words, most present-bias findings reflect what I call “akratic modeling” of subjects.

### *Unifying models*

Many of the behavioral economists I interviewed stated that there is no unifying theory in their field. Some of them reiterated the point that the field was more of a subfield that studied anomalies but is a subset to broader economic theory. “Economics is more of a coherent discipline than psychology, which has no unifying theory,” Erin stated, “Personally I think it’s fine, it reflects the reality,” she concluded. The most general assumption seemingly shared by all of my

interviewees is that behavioral economics provides evidence for how people “actually behave.” As Sandy put it, “I assume that people aren’t going to act like how standard economic models predict.” Another respondent, in response to the same question about a theoretical framework that all behavioral economists share said, “That’s tougher. Yeah, I don’t feel like there is necessarily a unified theoretical framework. There’s theories that we all kind of know and agree are better than the alternative, so like I know most people would agree like bounded rationality is better than the alternative and dual process makes useful predictions or that prospect theory or later directions of prospect theory make useful predictions, but I don’t know if like you would just say ‘oh you’re a behavioral economist so you must believe in the prospect theory function and it looks like this.’ And that’s okay.” In other words, the unifying framework of behavioral economics is a loose collection of findings, some occasionally useful theories, and a general behavioral methodology that contrasts with standard economics.

Ultimately the main function of the field to many of the interviewees was simply to “add more descriptive validity to models of behavior” from economics. Some argued that economics was simply the normative standard. Others, who were more involved with psychology research, did not feel that their behavioral economics research had much to say about economics or economic theory directly. What they all seemed to agree on was that there are “too many studies against econ(omic) standard models to prove that it is not descriptively accurate,” at least in every case. The main contribution of behavioral economics appears to be its findings that highlight the fallibility of humans, including “present-bias,” or the desire for rewards in the present rather than in the future.

One interviewee stated that “the studies which have received the most attention are related to present-bias.” While everyone may have present-bias, several interviewees mentioned



disparities between people in this regard. As Josh stated, in regard to demographic differences in present-bias, “Academics tend to have less of a present-bias. They research their savings plan.” Put differently, there are gradients of rationality, with academics (as one population) being closer to the ideal *homo economicus*. Academics are thus exempted from study for most behavioral economists. This follows again, as a particular strategy of boundary-work to differentiate between the fallible subject and infallible researcher.

Another reason for the popularity of present-bias in behavioral economics is that it can be used as a generic theory, or one supported by particular psychological or economic theory. For instance, present-bias can be described through dual-process theory (a cognitive science model) and/or quasi-hyperbolic discounting (an economic model).<sup>77</sup> From my reading of behavioral economic papers as well as through my interviews, I found that dual-process theory (DPT) and quasi-hyperbolic discounting (QHD) are certainly amongst the most popular theories or models of economic actors/research subjects. In STS speak, we can see present-bias as a boundary-object<sup>78</sup> that allows researchers in psychology to speak with economists and vice versa.<sup>79</sup> To be considered a legitimate contributor to the field, one is expected to have some understanding of both DPT and QHD; however, one could argue that DPT and QHD are more often seen as anti-boundary objects (Fukushima 2016), which divide psychologists (who are more used to DPT framing) and economists (who are more used to QHD framing).

### *Debating dual-process*

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<sup>77</sup> For more on present-bias and its relationship to DPT and QHD see O’Donoghue & Rabin (1999; 2015) See also Wilkinson & Klaes (2017). For more on DPT see Evans (2010).

<sup>78</sup> See Star & Griesemer (1989).

<sup>79</sup> Interestingly, Boumans and Davis tie behavioral economics to postmodern philosophy via present-bias (time-inconsistent preferences) and the resulting “multiple-selves” (2016: 172).

As mentioned, DPT is a central organizing theoretical framework that often acts as a boundary-object between behavioral economists, neuroeconomists, and policy-makers. DPT is a model to explain “quick, intuitive decision-making” in experimental research studies. As Colin, an assistant professor in Marketing, put it, DPT is useful when “you're communicating your findings, so rather than asking people to read 100 different papers, you can summarize them by putting them in this framework.” In other words, DPT is a useful heuristic for researchers when communicating results; a heuristic that has discipline validity.

For many researchers, DPT means that automatic decision-making is the same as our taken-for-granted habits. For many of the behavioral economists that I spoke to, it seemed less important whether DPT is “true” in some absolute sense, rather, the question is whether it is a useful model. More than one interviewee said they were “not up on the dual-process literature.” However, the majority had a positive view of the theory. As Josh stated, “Since standard economic theory does not take into account search costs, model 1 and model 2 seem like more sensible or realistic places to start in measuring and predicting overall search time and cost. It’s a useful paradigm to communicate lots of different findings.” When explaining the wide use of dual-process models, Josh stated that “It’s ubiquitous in the sense that if you're training in the field then you know about it, that's not like every single paper or even most people explicitly use it.” Relatedly, Colin stated the model tends to come up in conversation with non-behavioral economists when he is trying to explain his work and the field. “If I'm trying to give a big picture and I'm saying all there's a whole host of findings then you're going to bring up system 1 versus system 2 it's better for us to use... it's, it's used by the most prominent scholars in the field. So, it makes sense that it comes up but if you were to read individual papers and just like the day-to-day of a behavioral economist it's not constantly on my mind, it's not constantly coming up, it comes up sometimes.”

Interviewees typically saw DPT as a relatively "new" theory, pointing to its popularization through Thaler and Sunstein's *Nudge* and Daniel Kahneman *Thinking, Fast and Slow*. However, what these works and my respondents failed to recognize was the historical erasure that DPT has propagated when it comes to the origins of dual-mind theories. To call DPT new is to suggest it departs from existing work, though both DPT and QHD rely on some elements of reaction time and discount rate research from the late nineteenth and early twentieth centuries (which are connected to racial differences as described in the previous chapters). Sometimes, behavioral economists will refer to previous economists, such as Adam Smith (i.e., Ashraf, Camerer & Loewenstein 2005) or John Maynard Keynes (Koutsobinas 2014) to make some connection of DPT to earlier literature but leave the racial aspects out.<sup>80</sup> This acts as a discretionary strategy, wherein if it is not useful for publication, such as historical assumptions built into contemporary theoretical frameworks, then it can simply be left out of current individual research findings.<sup>81</sup>

There were of course some further controversies over DPT mentioned in interviews. In particular, one of the interviewees brought up the Gerd Gigerenzer versus Daniel Kahneman and Amos Tversky debates that happened in the late 1980s and 1990s (see for instance Gigerenzer 1991 and Kahneman & Tversky 1996). The controversy here was initially discussed in different terms other than DPT, but respondents tended to frame the debate in system 1 versus system 2 terms. That is, they took Gigerenzer's argument in favor of system 1 processing (or "gut feelings" as Gigerenzer calls them; see Gigerenzer 2008) as oppositional to Kahneman's preference for

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<sup>80</sup> In fact, in general, race did not come up as a topic of discussion in any of my interviews. The only time race came up was in reference to demography of samples, but that only happened once and did not seem to be any more of a concern than gender, SES, educational level.

<sup>81</sup> Given the racial history of these concepts, one could argue that they use this strategy in order to prevent criticisms of racism, in the same way that they, intentionally or unintentionally, leave out Richard Herrnstein's contributions to the origins of the field as addressed in the previous chapter (see also Herrnstein 2000). Such discretionary strategies allow behavioral economics to appear as "color-blind" and fit in with similar neoliberal discourses (see for instance, Bonilla-Silva 2009).

system 2 processing (Kahneman 2011). While Kahneman's influence has prevailed over Gigerenzer, at least in the US, the history of DPT debates goes largely unnoticed as the behavioral economists now take Kahneman's viewpoint as more "disciplinarily valid." Generally, the behavioral economists I spoke with were more concerned with how to make their experimental findings legible to others, including those in the related subfield of experimental economics, than advocating a strict theoretical point of view.

These issues relate to differences with the more experimental economics approach compared to behavioral economics. The few experimentalists whom I spoke to with a background in economics did not frame their work as one of understanding the conflict between two parts of the mind (or neurological processing systems). Rather, they talked about the limits of mental calculation and information processing, and a general bias for present consumption. So, while DPT is an important framing of behavioral economics findings for many researchers in the field, especially psychologically-trained behavioral economists, the "primitive" mind is much more implicit in explanations of present bias and limited information processing in those behavioral economists with more specifically economics training. While these slight differences can be found in the numerous publications in the field that I have reviewed for this dissertation, along with four interviews with behavioral economics researchers with an economics Ph.D., it is not an essential difference or definitive finding for the field as a whole.

For many of the researchers, theories are used for practical purposes of framing their research findings. Others felt that theory was too important for it to only be publishing consideration. This can be seen in the debate around DPT; wherein, some prefer a single processing model and others prefer a multi-processing model; others prefer more abstract formalization or metaphors, others prefer a biological basis of their theoretical frameworks. Most of the behavioral

economists I spoke to took multiple positions, I believe as a strategy to not disrepair their or other behavioral economists' reputation, or at the very least, to maintain a kind of scholarly pluralism. That said, some seem to use DPT because of its popular currency via its central role in *Nudge* and other popular behavioral books and press articles, while other scholars were skeptical of the model due its popularity and how generally it can be applied. The real concern for the latter is that DPT will not allow for nuanced theories or will take the space of other more applicable, and less generalizing, theories such as loss aversion.<sup>82</sup>

In sum, the irrationality of economic subjects is certainly an assumption made by most, if not all, behavioral economists; however, the idea of cognitive limits and present-bias are hypotheses that are experimentally testable. Theory for behavioral economists is therefore a tool for promoting and making legible their research findings. In this way, behavioral economists enact a kind of pragmatic pluralism, allowing for different theoretical commitments depending on one's background and allowing the field to remain productive while not getting lost in theoretical debates. This pragmatism is exempted from the core position of the field, which states that people are innately irrational in more or less predictable ways. transition to talk about novelty and historical erasure specifically. One of the central strategies I found was what I call a “discretionary strategy” of theory use; when appeals to validity comes down to the “data” and disciplinary norms.

## METHODOLOGIES & EXPERIMENTS

When it comes to method, I argue that behavioral economists engage in what I call “meticulous strategies,” or rhetorical claims of methodological rigor, which they use in order to

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<sup>82</sup> While loss aversion is not in contradistinction from DPT, it is one of the more popular concepts developed from behavioral economists. Loss aversion was the only other theory, besides DPT, QHD, and prospect theory, that was brought up by interviewees. Loss aversion could arguably be seen as a subtheory that falls under the previous theories mentioned (see also Wilkinson & Klaes 2017).

reinforce their expertise over behavioral experimentation. While policy-makers may want to directly nudge citizens, behavioral economists may respond by saying that nudges do not work only because policy-makers wish them to but can (and should) be implemented only after rigorous testing by behavioral experts, such as themselves. Behind this strategy is the belief in the scientific method as a neutral type/most objective type of knowledge production. Behavioral economists thus draw capital out of being ‘scientific’ when applying such strategies. Furthermore, behavioral economists often use what I call, “reference strategies,” wherein researchers try to maintain an open, innovative field while correcting for criticism. These strategies allow behavioral economists to further dodge historical and philosophical discrepancies while advancing their own careers as pragmatic behavioral researchers and problem-solvers.

There are many different approaches to methods in behavioral economics, but generally, they use some form of experimental methodology. Experimental economics, a related subfield, focuses more on methodology than behavioral economics, but there is a way in which the two fields influence one another. For more than one of my interview participants, psychology has “more interesting questions” than economics. Another said that behavioral economics is a mixture of judgement and decision-making (or JDM, which is an interdisciplinary field most associated with experimental psychology and social cognition) and economics. For many of my interviewees, behavioral economics could easily be described as “asking economic questions but with behavioral experiments.” While there are those in the field who tend to specialize mostly in economic theory and others that are more specialized in experimental hypothesis testing, most tend to do a bit of both, with the majority being more invested in the experimental side of research.

One recent way of talking about the interdisciplinary nature of behavioral economics has been promoted by Matthew Rabin. Specifically, Rabin (2013) calls for the “portable extension of

existing models,” (a term brought up in more than one of my interviews) or the means of achieving a psychologically more realistic notion of (economic) rationality. What this means in practice is using psychological experiments to inform economic modeling rather than say from econometrics. Such a practice was said by several of my interviewees to add more descriptive validity to models of behavior. According to Anna, there are “too many studies against the economic standard model to prove that it is not descriptively accurate.” Yet, despite this unifying perspective from people who call themselves behavioral economists, they nonetheless have different positions when it comes to specific research problems and selection and implementation of research methods. This can be seen through how they talk about their geographical location as well as their position in the laboratory hierarchy.

#### *Mapping methodological difference*

While behavioral economics may be often seen as a unified field, and one may assume that such universal knowledge should not be so geographically determined; however, I found many differences depending on where one was trained or where one is currently conducting their research. Specifically, there are different approaches depending on one’s home department and university. For instance, at the University of Chicago, the Chicago Booth school of business is seen as more of “a basic decision-making research program” according to one of my informants from the Harvard Business School, who also stated that her department was more focused on application of behavioral economics findings. Another respondent said that psychology departments (that conduct behavioral economics-related experiments) tend to be even less applied than business schools.

Different departments thus emphasize different methods and approaches, which also reflect perceptions of status in the field.<sup>83</sup> Psychology programs are “still probably more rigorous” than business schools, according to Anna, who further stated that “business schools have gotten better at training PhDs within the last 10-15 years.” But that “the window closed in the last 10 years for people outside of business schools [to be hired there].” Anna’s comment suggests that having an experimental psychology background was seen as highly valuable when behavioral economics became popular in business school hiring. The same thing could be said of experimental economists who were hired by business schools around the same time, according to my informants.

The difference between behavioral economics and experimental economics was explained to me in a number of my interviews. The biggest difference between the two fields has to do with incentives and other rules of methodology. There is much writing on these differences and interviewees rarely brought up experimental economics. Psychologists were firmly for behavioral economics, as they understood it, over experimental economics. Economists, on the other hand, were more eclectic in their approaches. Psychologists were only likely to use field experiments if it served a particular purpose (i.e., because the journal requested it or because of a partnership with a state body or consulting with a company) and if they had the funds to do so. It is a bit of a misnomer calling one approach experimental and the other behavioral when both include experiments to study economic behavior. Most experimental economics studies were actually more akin to behavioral game theory, an approach pioneered by early behavioral economist Colin Camerer in the 1990s and early 2000s (i.e., Camerer 2003). The justification of an experimental economics study was to “incentivize participants properly,” as one interviewee rather succinctly put it. Another reason to conduct behavioral game theory and experimental economics experiments

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<sup>83</sup> For understanding behavioral experimental methods see Davis (2008) and Wilkinson & Klaes (2017).



is to study interaction under rational market conditions rather than attempting to prove the ‘irrationality’ of individual test subject behavior.

The idea that behavioral economics is a unified field is challenged when investigating the differences between departments, revealing differences in training, approaches, and status. This is most obviously seen when comparing behavioral economists with experimental psychology training versus those who trained in economics. Moreover, behavioral economics is at times compared, and at other times in direct conflict, with experimental economics. Training and discipline are thus important for understanding issues of closure, interdisciplinary collaboration, as well as economic imperialism and reverse imperialism.

Differences between departments, training, approaches and status show the different kinds of boundary-work behavioral economists engage in to perform their discipline. By attempting to bring together academics from both psychology and economics departments, “Economics imperialism,” is a term “referring to the application of neoclassical economic reasoning and rationality theory to other sciences...” Whereas, “reverse economics imperialism,” according to Boumans & Davis, involves the application to economics of reasoning that has been developed in other sciences. They cite behavioral economics as the key example here, stating that it is seen as “the application of psychology to the theory of decision-making in economics.” They further state that “the type of economic explanations” behavioral economics research produces has “only a very limited resemblance to neoclassical a priori reasoning about rationality and competition in competitive markets.” (2016: 151). Issues of power when it comes to knowledge production can further be seen in how behavioral economists discuss laboratory hierarchies.

### *Behavioral Laboratory Hierarchies*

Laboratories are where we see science in action. While I did not conduct a laboratory ethnography, I did have a chance to talk to professors and graduate students about the actual work of the lab and how they conduct behavioral experiments. The discussions drew boundaries between laboring responsibilities and disciplinary differences, essential for answering the research questions I asked at the beginning of the chapter regarding power and behavioral economics research. Oftentimes these experiments are collaborations between faculty members, and more often than not, between faculty and graduate students. These collaborations often leave out undergraduate or staff who actively play roles in making experiments run functionally, thus mystifying the social structure in place that presents certain ideas as scientific.

Hierarchies of laboratories have been written about elsewhere (see for instance, Mody & Kaiser 2008; Traweek 1992), but I take some of these insights to bear on behavioral economics research. The central justification I heard from interviewees was that hierarchies were necessary for research training and scientific knowledge production. As Sandy stated, “Graduate students need guidance, like doing the grunt work of running [experiments].” She then went on to discuss her “wonderful grad students” who work as research assistants completing tasks such as Qualtrics programming, completing IRB documents, formatting research articles, searching for literature for a research paper, and a myriad of other, usually smaller tasks, as well as the many tasks associated with conducting a behavioral experiment with live people. Delegating tasks to research assistants is necessary for the sake of completing experiments, Judy stated, with the implication that productivity and research output were paramount values. But I also found that graduate students also tended to say the same sorts of things about delegating tasks to undergraduate researchers. Undergraduate researchers often “run” these experiments by recruiting participants, having the participants sign IRB documents, and keeping track of such documents.

The delegation of tasks in laboratories are thus hierarchical and are based on implied meritocratic standing. As Stan, an assistant professor at a business school told me, “grad students have a lot of time, but no money, but it’s the opposite for professors.” Based on her ethnography of an applied physics laboratory, Sharon Traweek (1992: 110-111) wrote that “The hierarchy of institutions is presumed to be the outward, visible manifestation of degrees of merit...” which resembles the reports from my interviewees regarding merit in the field. Indeed, compared with other labs or other professors, behavioral economic researchers appear to be ranked by novelty, expertise, and productivity. Being seen as productive, producing large numbers of well-cited and novel studies, leads to rewards in prestige as well as financial income.

In order to be productive, one needs to conduct experiments, which require funding to reward research subjects. In times of duress, sometimes, tenured professors will pay their research subjects upfront and will provide their department with receipts to be reimbursed. This generally requires that additional signatures be gathered from research subjects. The money, signature gathering, receipts, and reimbursement documents are generally handled by the research assistant that the lead investigator trusts.

In order to find out the connection between such hierarchies of laboratory roles to research output, I had to ask which lab members were responsible for generating research questions and testable hypotheses. Despite the fact that research assistants are often the ones “on the ground” observing real people, it is the higher status researchers who choose research questions. Talking with tenured professors, I found that many of them do not base their research questions on talking to people outside of the discipline but are instead inspired by other research questions from the field, or popular topics, or from personal experiences (usually in terms of being irrational in some predictable way). While the undergraduate or graduate research assistant can sometimes pitch

research projects (for theses and dissertations), it is the heads of laboratories who usually decide which research questions to pursue, since they have the money necessary for conducting experiments (to pay volunteers) and experience publishing experimental results.

In sum, higher status leads to more productivity as more senior researchers can rely on the labor of assistants and collaborators. Productivity here is generally measured by publishing and citations, which give researchers a sense of stability in a particular field. In addition, such hierarchies reveal certain forms of thematic development and representation; that is, only the senior researchers choose research questions, thus limiting the number of possible research directions.

### *Experimental Design & Sampling Concerns*

Different experimental designs and population samples largely depend on funding and publication requirements. While many experiments rely on simple or reductive decision-making, more researchers appear to want to utilize the kind of automated interaction between subjects and programming. This has led to many experiments being conducted online wherein subjects go through a learning process, often receiving instant feedback. In fact, according to my literature review and interview respondents, most experiments in the last few years have been conducted online, primarily through Amazon's MTurk platform. These online experiments are preferred as they are generally cheaper than in-person experiments and experimenters can attract much larger samples than they could otherwise. In either case, RCTs (randomly controlled trials) was the primary way that experimenters designed their experiments.<sup>84</sup>

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<sup>84</sup> For more on the history of the relationship between RCTs and behavioral economics, see de Souza Leao & Eyal (2019; 2020). On the philosophical issues underpinning RCTs, see Cartwright (2007).

A few of my interview respondents claimed some concern that online research subjects might become distracted thus “corrupting” or “distorting” the veracity of the data. The paradox here being that experimenters want their research subjects to be distracted in some ways, but not other ways. That is, research subjects are often expected to be distracted enough to be deceived, since for many experiments this is key.<sup>85</sup>

What is also needed are many participants in order to have different treatment groups for the experiment to work. At least one group is needed for a treatment effect (the experimental manipulation, or sometimes referred to as the independent variable) and another without. However, in most cases, experimenters have several treatment groups in order to test various treatments at once. The goal here, for instance, could be to help determine whether differences in reward are the primary factors (statistically speaking) in determining choice or whether it is some other context factor. A predetermined narrative of the experiment (usually as a vignette, with some choice at the end) is written with a research design in mind. That is, one vignette may have differences in money or the name of the person in the story to see if such factors lead to differences in choices. Experimenters need to plan out the number of experimental manipulations in order to determine the number of experimental groups and a predetermined sample, which is “usually about 100 people per condition for simple treatment effects.” according to Daniel. Some experimenters, like Allen, were being reflexive in this manner by stating that “power calculations have many assumptions built into them.” Like other behavioral economists, Allen was concerned about validity and the problems of paradigm-shaping cognitive biases.

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<sup>85</sup> The problem between being “normal” behavior and “abnormal” behavior is an ongoing boundary issue for behavioral economics, which is described later in this section.

Sampling was a concern for most of my interviewees. This is unsurprising given the amount of text written over the issue from inside and outside the field. The most frequently cited article on the dangers of a weakly diverse sample was published in 2010 written by Joseph Henrich, Steven J. Heine & Ara Norenzayan. The WEIRD acronym in this article refers to populations that are Western, Educated, Industrialized, Rich and Democratic. Their argument, convincing to many psychologists, is that psychology has tended to favor such samples in their studies; such issues of sample representation are related to legitimacy concerns of generalizability and external validity. These issues of representation were not consistently brought up in my interviews by the participants. Their responses to questions of samples left the impression that they were not concerned about it due to the fact of new journal norms that are often required by college student samples and a wider sample drawn from MTurk studies.

Unsurprising, many of the interviewees pointed to the limits of research funding and institutional support, while one or two graduate student interviewees mentioned the sample as a kind of precedence in the field. Other researchers who were interviewed brought up their own attempts to go beyond the most common samples (once again centering the problem of representation) by enrolling people off the street. In many ways, these anxieties expressed over sampling further reveal what I have been calling ‘reference strategies,’ wherein, researchers try to absorb criticism or strategize in a preemptive manner before receiving criticism that other researchers have publicly received.

One important aspect of representation and sampling that was not brought up had to do with leaving certain people out of research participation, in particular, people who might be seen as extremely mental ill, which is assumed on the appearance and behavior of possible research recruits. This example shows that behavioral economists want their experiments to have more

representative samples, but at the same time do not want to include possibly mentally ill individuals into their studies. Such a research strategy shows the kind of boundary-work that researchers use to differentiate "normal" psychology from abnormal psychology.<sup>86</sup> While research subjects are likely to behave irrationally, researchers worry that their findings will not be taken seriously by others if their sample is filled with people who may be experiencing extreme mental illness. In part this is due to the desire to create interventions (nudges) that influence “everyday people,” or a kind of medicalization of the everyday irrational rather than the explicitly psychiatric behavior modification of mental health consumers/patients.<sup>87</sup>

Besides these kinds of sampling issues, demographic differences within and between studies are usually described in the sense I described above as a discretionary strategy. Even though behavioral economists are concerned with their research samples being representative, they nonetheless tend to ignore factors, such as race, in their analysis. This is largely due to the fact that such identifiers are quantified, which only factors in the final analysis if the particular demographic variable has a statistically significant correlation to the independent variable.<sup>88</sup> Viewed this way, one could say that behavioral economists understand statistical significance as “overcomes” race, class, gender, etc. differences by showing that experimental treatment groups had a stronger correlation to independent variables than demographic features.<sup>89</sup>

### *Making Experiments Legible to the Field*

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<sup>86</sup> For more on the history of boundary-work between abnormal psychology and experimental psychology see Davidson (2018).

<sup>87</sup> For more on these issues see Ben-Moshe (2020) and Staub (2011).

<sup>88</sup> The other way that such differences are ignored are by not being part of the research question before the experiment even takes place.

<sup>89</sup> Race is thus a ghost variable that haunts behavioral economists, particularly in its relationship to its practitioners and foundational assumptions (dual-mind theories, self-control problems, etc.). For more on race as a ghost variable see Karkazis & Jordan-Young (2020) and Hansen, Parker & Netherland (2020).

While trying to maintain legitimacy, behavioral economists must continue innovating their methodological approaches. This is an issue for the field as a whole but is also notable at the individual level where competing scholars feel pressure to conform to ever-increasing standards of rigorousness. These standards include the number of replications of one's initial study (differing from a pilot study) or "strategies of replication", standards of transparency "strategies of transparency", and size and diversity of one's research sample or "sampling strategies".

Behavioral economists have protected themselves and their field by claims of methodological superiority over the other social sciences. This does not mean that other approaches are valueless, but rather they have a relatively orthodox view of the scientific method which privileges experimental approaches that isolate specific variables, operationalizing these variables in measurable ways that can then be quantitatively analyzed. That is, when discussing their research methods, behavioral economists tend to position their approaches as in some way mimicking experimental methods from the natural sciences (a strategy that goes back to at least the nineteenth century) in order to gain further (scientific) legitimacy.<sup>90</sup>

Some of the behavioral economists I spoke with also had concerns with the opposite strategy of "applied" strategies. As more nudge think tanks and behavioral researchers outside of academia become more numerous, academic behavioral economists want to position themselves as more academically rigorous, while also still being seen as practical and useful; this is why behavioral economists were likely to resist too much emphasis on theory and abstract knowledge

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<sup>90</sup> As Jill Morawski points out, "The experimental method, adopted from the neighboring sciences, provided psychology with a protocol for work as well as for professional legitimation. Psychologists took that method to be a genuinely liberating practice. The experiment permitted the researcher to control the messiness of human life in order to locate its underlying causal mechanisms. It also provided a place where researchers could perfect acts of self-control--where they could conduct observations cleansed of personality, biases, and expectations. As such, the human psychology experiment constituted a new form of social relations in which authority and abilities were differentially named and distributed." (in Fine et al. 1997: 25).



or qualitative of approaches to the field. That is, behavioral economists tend to use meticulous strategies to enroll scientific discourse for the purpose of legitimizing the field. This is done not only by using quantitative statistical analyses and careful experimental design, but also by making data more available to the public. Increasingly these methodological norms are seen as being a marker of "good" scholarship.

In my interviews, I found that replication of previous experiments was praised as an essential aspect of any experimental science, with particular reference to behavioral economics experiments. However, not many of the interviewees were interested in replicating previous experiments themselves. This may seem slightly surprising given the media coverage of many incidences of experimental malpractice (i.e., Bhattacharjee 2013; Dahlberg 2018); however, many of my interviewees used rhetorical strategies in order to set themselves apart from such malpractice and to show how the field was coping, and in many ways thriving due to increased journal requirements for additional experiments per publication and requirements of making one's data open access.

Part of the reasoning was that experimenters have to replicate their findings in various studies before being published as a single finding in a stand-alone academic journal article. According to Daniel, his lab, which included eight members at the time, began pre-registering their data during the 2016-2017 academic year. "Pre-registration is helpful for making data publicly available," said Steven, a colleague of Daniel's from the same behavioral laboratory. These new publication norms have influenced the daily research practices in behavioral laboratories, while also signaling new expectations of experimental rigor. Put differently, behavioral economists are now expected to be more open (relative to previous "open data" procedures) about their research

process in order to reaffirm the field as legitimate and resist criticisms that their findings are artificial.

## CONCLUSION

Behavioral economists have been able to produce a generative and influential field by implementing various strategies that at times reinforces, shifts, or tears down boundaries. That is, behavioral economists invest less in explicit competition, and more into a general pluralism that allows for maintaining, and sometimes, expanding of behavioral economics' jurisdiction. For instance, there exist multiple forms of method and theory to propose various ways that behavioral experiments reveal actual behavior. Such pluralistic norms nonetheless all support the experimental means to test and fix behavior that does not fit the normative expectations of neoclassical economics. These "anomalistic" findings allow behavioral economics to appear to those outside of the field as a helpful, arguably often superior, tool rather than a definite discipline with clear policy commitments outside of normative standards.

Behavioral economists use rhetorical strategies to position themselves and their field as innovative and progressive. History and power inequalities are jettisoned in favor of "findings", or empirical reports that can be published, allowing individual researchers and the field to be seen as productive and more relevant than other approaches. This is particularly the case as behavioral economists often see themselves as creating more realistic models of human economic actors.

This chapter has examined the ways that behavioral economics is seen by behavioral economists themselves. Through my extensive interviews, I found that researchers apply various rhetorical strategies in order to position themselves and their field in progressive, legitimizing ways. As a profession, behavioral economics produces not just experts in a specific field, but also

seeks to produce “experts of experts,” not completely unlike STS—a line of thought that I will discuss further in the conclusion to this dissertation.

Behavioral economics has had long-lasting effects since the 1980s, and most likely will remain influential in the coming decades; however, since it is a science built on anomalies, its novelty continues to dwindle. As its core representatives age and retire, the field’s future remains somewhat ambiguous. It will likely continue in more ethereal forms as specific findings and theories (i.e., the endowment effect) and method (i.e., behavioral RCTs), as well as a general policy tool (perhaps with or without the ‘nudge’ label).

Behavioral economists use a variety of strategies to maintain, and sometimes expand, their jurisdiction of expertise. I have used “strategy” as a label for the interactive and intra-active processes of behavioral scientific (boundary-)work. While I have discussed the more-than-human actors and actants that help shape the field of behavioral economics (i.e., computer networks, objects of desire, articles, etc.), I have centered the human actors here, not because they are detached from sociomaterial environments, but because they rationalize their own behavior in strategic frameworks. We have seen how these researchers use reference strategies to maintain their place in their field, how they use discipline validity to justify their methods, all of which show specific forms of boundary-work. Reference and other related strategies are useful for maintaining a sense of a “reference realm,” (Ihde 1986: 61) or shared *lebenswelt*, from which behavioral economists and their interlocutors can communicate under some sense of shared meaning and understanding. In other words, such strategies allow for behavioral economists to maintain a sense of identity while also allowing for select changes and diversity within the field.<sup>91</sup>

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<sup>91</sup> Certainly, relevant here is the sociological work on knowledge production in racialized and gendered organizations and institutions (see for instance, Collins 1989; Ray 2019; Smith 1987).

Reference strategies and boundary-work more broadly allow behavioral economists to challenge and/or absorb critique and to project scientific expertise and legitimacy. Performing scientific expertise is thus a process of maintaining relevance and (intellectually, at least) domination. Policy-makers have used these forms of scientific expertise to promote nudge-type policies, sometimes with the help of behavioral economists themselves. Thus, strategies are inherently political despite the resistance of behavioral economics to embrace these terms. Instead, they assert that they are simply “Letting the data speak for itself.” The notion that data could be political only comes up when discussing data errors or experimental scandals, completely ignoring recent (and not so recent) attempts at critically engaging data politically and historically (see for instance, Gitelman 2013). Yet, whether we are talking about reference realms or cognitive bias, the possibility of ontological “myopias” within the field is significant (Rodríguez-Muñiz 2015). As one interviewee stated, “For something to not even enter into your choice set is pretty profound.” This is particularly the case when we look at the racialized and gendered components, as well as demographics, of the field. As one of the few women in the field I spoke with said that there are “not many women [in the field].” She went on to say that this is because economics as a whole is “a very male dominant discipline,” and that this may have something to do with socialization, stating that the gender disparities in the field “could be because girls don’t do math, [we are] socialized to be into feelings instead.” In the next chapter, we shall see additional ways in which the racialized and gendered aspects of behavioral economics are intertwined with theoretical frameworks of akratic subjects and the targeting of poor communities (usually of color) via behavioral policy.

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## Chapter 5

### EXTENDING BEHAVIORAL EXPERTISE, NUDGING POLICY: On Behavioral Policy Knowledge

Since at least 2010, behavioral economics has proved to be a valuable resource in policy-making settings. Largely due to nudge units (also called “behavioural insights teams,” or BITs), there has been a rise of behaviorally-informed policy around the world (Cf. Whitehead et al. 2015). In this chapter, I look at the history of nudge policy as well as current uses of behavioral expertise in policy settings. By focusing on the development of nudge, this chapter notes a shift from purely academic concerns to public policy.<sup>92</sup> While the previous chapter illustrated some of the theoretical and methodological issues in behavioral economics, this chapter looks at these issues in the context of nudge policy development and debates.

As I will argue, the bringing together of models/theory with methodology provides proponents of nudge theory the space they have acquired in “evidence-based” policymaking settings. Unlike many other models of evidence-based policy, nudge has marketed itself as this whole package, providing sometimes workable and diverse theories of people, while also providing an experimental method of testing interventions. Nudge often assumes irrationality in people, and therefore produces the rational experimenter who “strategizes science” in order to discipline these subjects into fitting into rational models. That is, mirroring the dual-process model of nudge, or the doer (System 1)/planner (System 2) model, policymakers and behavioral scientists take on the planner role for the masses (the doers). Often, behavioral economists have argued that such discipline (coming from nudge policy) is necessary if the “irrational” subject judges the nudge to make them better off than before the nudge intervention. However, such an ideology negates

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<sup>92</sup> I use the term ‘nudge’ (as opposed to *Nudge*, the book written by Thaler & Sunstein) in this chapter when referring to the theoretical basis of nudge (usually behavioral economics theory), as well as its applications (i.e., policy).

other possibilities of improvements (such as universalized healthcare, housing, income, etc.) that may have broader and longer-term impacts.<sup>93</sup> These possibilities are largely negated in favor of more cost-effective and arguably more politically viable alternatives. This is seen in the way that nudges tend to target the less wealthy and less educated of the general population. As one behavioral economist that I interviewed stated, people with “lower education, less income, less time, benefit from nudges.”

Applications of behavioral economics research are many; one can think of behavioral economics at the individual level (self-nudges) or at the marketing level (consumer nudges), business management and finance (management nudges), application to digital devices (digital nudges), medical practice (medical nudges) or public policy (nudge policy). More so than other approaches to either psychology or economics, behavioral economics has come to affect people and institutions in multifarious, scalar ways. In other words, nudges are the most popular export from the field of behavioral economics. Of course, there are differences between behavioral economics when it comes to the strength and appropriateness of nudges (as discussed in a later section of this chapter). Nevertheless, behavioral economists seem to all support some versions of real-life implementation of behavioral economic research. Nudge, or the application of behavioral economic research, is a means in which behavioral economists can assert their expertise.

The popularity of evidence-based policy correlates with the proliferation of think tanks, and nudge units, more specifically. Seeing behavioral economists and nudge experts as policy consultants and knowledge brokers (see Feitsma 2019), reveals the growing value and importance of knowledge production in policymaking. This can be seen in the proliferation of local, national, and international policy, as well as related nudge units and think tanks.

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<sup>93</sup> Using the psychologically-informed language of nudge itself, this shows a particular cognitive bias (i.e., present bias) in the rationality behind nudges.

One such means of expanding the expertise of academic behavioral experts is called “strategic science.” Strategic science is a particular research strategy to accomplish both experimental findings and policy enactments (Roberto & Brownell 2017). “Strategic science means asking scientific questions that people in positions to enact change want answers to. When possible, the questions are co-created between scientists and policy makers or policy influencers”, one behavioral economist explained. Strategic science is thus a means of marketing the expertise of behavioral economists. As argued in the previous chapter, ideas are not convincing on their own, they must be accomplished, they have context: via expertise/professionalization and institutions, etc. By engaging in particular forms of rhetoric, these experts extend their jurisdiction by combining scientific and policy spaces and concerns. That is, the policy comes to guide the research questions of these behavioral scientists, while the science guides the application of policy through generative evidence and experiment.

The expansion of behavioral expertise is of course not without its critics. Criticisms and tensions in nudge theory and policy have been explicit since the beginning of libertarian paternalism and asymmetric paternalism, both published in 2003. The most common criticism appears to be the paternalist part of the equation, while more recent criticisms have focused on the libertarian angle. For the former, critics have equated nudge with technocratic rule; for the latter criticism, critics have equated nudge as a “band-aid” to more serious social and governmental problems that require more severe regulation. As I will show in my interviews with practicing behavioral economists today, these criticisms and tensions reveal ongoing ethical and research concerns in the field.

Some of the criticisms thrown at nudge have led to distinct changes in nudge theory and practice. For instance, there is more emphasis on meticulous and rigorous experimental design, as

well as transparency of nudge and data from field experiments than there was before. In addition, nudge theory has had to deal with issues related to public participation, a concern shared with STS scholars. While behavioral economics and nudge theory have used a variety of strategies to expand and maintain jurisdictional expertise and professionalism (Abbott 1988), the ongoing tensions between cognitive bias and political bias reveal the seemingly unpassable limitations of the field and its applications.

This chapter explores the recent tensions, conflicts, and conciliations related to behavioral economics-informed policy. I draw upon the primary literature, secondary literature, policy documents, published interviews, as well as interviews I conducted with behavioral economists to explain the travel from the field into policy applications. Although I will be referencing and summarizing certain nudge policy examples, I will primarily be discussing and analyzing the different sectors (i.e., finance, programming, medicine, wellness, criminal justice, management, etc.) in the next chapter.

The first section deals with the history of nudge theory and policy in the context of behavioral economics. The second section deals with the expansion of nudge policy to other countries outside the US and UK, where the first “nudge units” were first formed. The third section deals with nudge units and behavioral policymakers as knowledge brokers; that is, I explain the role and value of behavioral expertise in the context of policy-making. The fourth section expands on all of this by describing the models and methods that nudge units and policymakers value. I then explore the criticisms and limitations of nudge as discussed inside and outside of behavioral economics. Following this, I discuss some of the politics of nudge as discussed by the behavioral economists I interviewed (as discussed in the previous chapter). This naturally leads into a

discussion of cooptation of criticisms and the evolving nature of nudge theory today. I finish this chapter by discussing the political limits and potential of nudge theory today.

## HISTORY OF NUDGE

As I have argued in the previous chapters, behavioral economics and nudge can only be seen as co-productive forces from the beginning of the field. That is, the first scholars to call themselves “behavioral economists” were interested in theoretical and applied policy outcomes simultaneously through their research and working group discussions. For example, Richard Herrnstein’s Matching Law work is the earliest of the new behavioral economics theories; Herrnstein received funding for Matching Law research from the NIH, or National Institute of Health, from 1977-1980 and again from 1980-1983 in order to apply his behavioral economics work to public health policy issues (see chapter 4 of this dissertation).

In the 1990s, economists Matthew Rabin and Theodore O’Donoghue began to write about policy applications of behavioral economics. Given the consistent anti-paternalism of the field of economics in the US, Rabin and O’Donoghue described their policy approach as “cautious paternalism”, and later on, “optimal paternalism.” The idea behind Rabin and O’Donoghue’s approach was to not make any bans on choices, but rather to limit choices and how such choices are presented. They thought such policies could be particularly useful to teens (in regards to sex, drug use, etc.) and adults with substance abuse problems, mirroring the problems and solutions proposed by Herrnstein, Ainslie, and Prelec in the 1992 *Choice Over Time* volume.<sup>94</sup> During a behavioral economics roundtable (which is an annual event paid for by the Russell Sage Foundation) in 2001 at Stanford, Matthew Rabin proposed to George Loewenstein, Colin Camerer, and other behavioral economists, a project in which they present numerous possible policy

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<sup>94</sup> 1993 World Bank Report (getting people to invest in their own health in capitalist and “post-socialist” countries)

applications based on behavioral insights. This project became known as “asymmetrical paternalism,” ending with a publication in 2003. While Thaler had apparently heard Rabin’s pitch, he quickly started his own approach along with Cass Sunstein, which they called “libertarian paternalism,” with a publication also in 2003, creating a bit of a competitive rift between these otherwise collaborative behavioral economists. Both projects, however, were attempts at a “third way” in politics and regulation. That is, they wanted to provide a framework that could appeal to both liberals and conservatives. Since conservatives are typically seen as more averse to regulation, as one of my interlocutors explained, it needed to be seen as less coercive or taxing to this side of the political spectrum. Hence, why Camerer et al. titled their article “Regulation for Conservatives.”

Perhaps the first explicit policy implementation inspired by the “light paternalism” of behavioral economics was the Save More Tomorrow program as conceived by Richard Thaler and Shlomo Benartzi, another behavioral economist. Thaler (2015) was inspired by Mischel’s marshmallow experiment when he first conceived of this policy. Specifically, Thaler saw the Save More Tomorrow program as a way to override a self-control problem (Thaler & Benartzi 2004). The “planner” self would not have to do anything while benefiting long-term by this plan to override the “doer,” it was all done automatically by the real planners (i.e., behavioral economists and policy-makers). This was just the start of the many implemented policies that behavioral economists would influence.

President Barack Obama became one of the first politicians to embrace Nudge as a political tool (Cf. Chakraborty 2008). Obama had been a lecturer at the University of Chicago during the 1990s, which is when he met Law professor Cass Sunstein. Since that time, Obama and Sunstein remained friends, with Sunstein becoming a supporter and consultant to Obama’s presidential

campaign (Thaler 2015). After the 2008 presidential election, Obama appointed Sunstein to be the head of the Office of Information and Regulatory Affairs. During his tenure, Sunstein implemented many regulatory and public policy changes. Most regulatory changes were made in order to save costs for the administration, including automatic savings programs. In terms of information changes to the public, Sunstein changed the food pyramid to a food plate to show a more relatable infographic for consumers to understand their healthy food choices (Cf. Sunstein 2013).

In 2014, Obama, with support from Sunstein, Thaler, and others, began the US version of the Behavioral Insights Team (the first nudge unit, which was founded in the UK), known as the Social and Behavioral Sciences Team (SBST), as chaired by the White House Office of Science and Technology Policy (OSTP). Obama had appointed Dr. Maya Shankar to run the Team, but the team was shut down in January 2019, following Trump's inauguration. Before the shutdown of SBST, they managed to make many changes to policy through behavioral nudges. Many of these were simple, cost-saving changes to policy were extensions of similar policies previously employed by Sunstein under Obama. Some SBST policies included making double-sided printing the default for federal printers; a Save Me Tomorrow program for the Army; and sending text reminders for college students to fill out their college financial aid forms (Basu 2015). Although the Trump administration ended the SBST program, President Biden has continued a version of the SBST called the Office of Evaluation Sciences. Biden also hired Cass Sunstein as a senior counselor for the Department of Homeland Security in 2021 and continues to work with social and behavioral scientists in attempts to create behavioral policy solutions, particularly in reference to COVID-19 security and vaccine policy (Epstein 2021).

These theories and measures are not only propounded by the behavioral scientists themselves; instead, we see many politicians, public health specialists, marketing agents,



managers, and think tank consultants co-producing these ideas and policies as well, thus revealing a great expansion of behavioral expertise that is not only indicative of nudges in the US, but internationally and at the global level.

### *BITs & Global Nudges*

While Sunstein was busy working with President Obama in America, Richard Thaler was working with the conservative UK government to implement Nudge policies. UK Prime Minister Cameron worked with Thaler, along with behavioral economist David Halpern, to push for a specific unit of policy researchers to test and implement behavioral policies. In 2010, the UK government set up the Behavioral Insights Team (BIT) with Halpern leading the team. The BIT would colloquially become known as the nudge unit and was the first of many such behavioral policy organizations and think-tanks. In 2013, the BIT would detach itself from the government in order to go into private consultation with other world governments, while still being an important resource for the UK government (Halpern 2015). Most nudge units around the world remain internal to the government (OECD 2017), while the U.K. case is a prominent example of a policy advisory body fulfilling knowledge brokering functions by being situated both inside and outside public administration. To catalyze the application of behavioral insights into policymaking, BITs “are being built inside and outside government as well as at the international level” (OECD 2017: 22).

After the UK and US nudge units, Australia as well as Singapore and several European governments followed in kind (John 2014), while Latin America and the Caribbean have started their own Behavioral Insights Network in the past three years. The national and global spread of behavioral economics has largely been facilitated by non-governmental international organizations

(such as BIT, WHO, UN, etc.) and multinational corporations (such as Unilever, Google, etc.) promoting behavioral health change that are usually associated with public bodies (Halpern 2015).

Nudge, as a whole, has thus expanded expertise and the role of behavioral researchers. The behavioral tools that policymakers use help reify the models of behavioral economics, making policy and law seen as necessary and (cost) effective. In the following section, we will explore how behavioral expertise is constructed and used in policymaking settings.

### MAKING BEHAVIORAL POLICY EXPERTISE VALUABLE

Calls for responsible government have provided opportunities for behavioral experts in policy settings. Ultimately, the basis of nudge is to allow researchers a say in policy. As evidence-based policy has become a more favorable practice, behavioral economists continue to try and be the evidence-based policy experts on actual human behavior. The goal of testing policy is a pragmatic response built upon assumptions of scientific objectivity and validity. As one behavioral economist told me, “Let’s assess what works [when it comes to policy].” In my interviews, I found that behavioral economists enacted a variety of strategies to talk about their relation to research and policy applications. As mentioned in a previous section, these behavioral economists suggest the relational and dependent aspects of theory, experiment, and application.

Another interviewee spoke about the appeal of applied science and consulting on nudge pilot studies: “Judgment and decision-making, or the applications of it, is what I find really interesting. I know some people are much more interested in the more basic heuristics and biases, some are interested in predictions and how we make predictions. I’m interested in the applied science. How can we help people make better decisions that reduce externalities that make them healthier in the long run that increase prosocial behavior, all of those kinds of decisions are what

I found the most interesting.” That is, the applied aspects of behavioral economics (i.e., nudge) has been a central reason for people entering the field.

Through nudge, behavioral economists utilize psychological expertise to extend the jurisdiction of experts/professionals in theory and policy. As Gil Eyal put it, “Psychological expertise, as distinct from psychologists, is strengthened not by restricting the supply of expertise but by extending it, so that managers or educational experts, for example, borrow freely from its conceptual apparatus and draw on its methods to boost their own authority.” (2013: 876). While business schools have taken up many of the ideas from behavioral economics and nudge (see previous chapter), public policy relies on behavioral experts as knowledge brokers and experimentalists.

#### *Nudge Experts as Knowledge Brokers*

The various roles of behavioral experts in policy-making have received a great deal of attention recently. This literature has explored the roles of these behavioral experts in policymaking settings through interviews and observational research. Through this secondary literature, we can see how nudge units occupy a specialized role in the policy design process, which is broadly indicated across the discipline of public policy (Oliver 2015; Strassheim et al., 2015) as well as public management (John 2018).

Nudge units have acted as catalysts for integrating behavioral insights into policy design processes. This sometimes means creating policies for old or new problems, but it can also mean changing existing ones that might be seen as more novel, fair, transparent, effective, or simply less costly. As Mukherjee and Giest (2020) point out, nudge units “...inhabit a unique position within governments’ broader policy advisory systems, as these groups start out as internal advisory units but can grow to become external partners that galvanize the creation of more behaviorally informed

policies, across sectors and often across jurisdictions.” Put differently, behavioral researchers are in a particular position to bridge research and policymaking, while also acting as enterprising policy actors. The enterprising aspect here points to the opportunities these nudge experts have to insert and legitimize new behaviorally-based ideas and/or methods into the policymaking process, thus creating a tighter link between behavioral science and policy.

Behavioral experts in policy settings have been described as knowledge brokers, a term that includes other experts who engage in knowledge diffusion, dissemination, and implementation with other policy-making experts (Feitsma 2019). As hybrid intellectuals and boundary-spanners between academics and policymakers, substantively fulfills the entire range of brokerage activities described above both externally and internally to the government. According to Feitsma (2019), knowledge brokers translate research into applicable lessons for policymakers (Giest et al., 2015), which includes knowledge dissemination, customizing the evidence for a particular target audience. Whereas knowledge implementation is “a more active process that involves systematic efforts to encourage adoption of the evidence” (Sebba, 2013, p. 396).

Beyond nudge units, which are not unlike other contemporary think tanks,<sup>95</sup> many behavioral economists work as consultants or otherwise contribute to policy knowledge production. This can be seen in the rise of research centers and organizations, as well journals (i.e., *Behavioural Public Policy*, *Behavioral Scientist*, etc.) and conferences (i.e., the annual Behavioural Exchange conference, NudgeStock, etc.). Moreover, some behavioral economists have gone on to work more closely with policymakers to figure out research problems/questions. Such an approach has been called “strategic science.” As mentioned, strategic science is a particular research strategy to accomplish both experimental findings and policy enactments.

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<sup>95</sup> See Medvetz (2015) for more on think tanks and hybrid intellectuals.

“Strategic science means asking scientific questions that people in positions to enact change want answers to. When possible, the questions are co-created between scientists and policymakers or policy influencers”, as one behavioral economist explained to me. While more than half of the researchers I spoke to had at some point conducted a policy-oriented study and/or earned money from consulting with the government, or with businesses, over possible behavioral solutions to policy issues, their focus was primarily on academic research.

In short, when it comes to nudge and the relationship to policy-making, it is less about producing new (general) behavioral knowledge (in the academic sense; i.e., producing research articles) than it is about producing policy knowledge and desired outcomes. Behavioral experts expand their jurisdiction through policy instruments, models, and experimental designs. Each of these behavioral tools comes with them a set of values and purposes, a way of reducing ‘risk’ and possibly maximizing ‘utility.’

#### EXPANDING BEHAVIORAL POLICY THROUGH INSTRUMENTS

One of the selling points of nudge-type policy, according to one of my interviewees, was its ability to *reduce risk*, such as reducing the risk of employee absenteeism by implementing behavioral and monetary incentives through worksite wellness programs. In the world of policymaking, risk management can be defined as a process of complex negotiation of trade-offs and exchange (see for example, Burgess 2012). What nudge helps supply is a behavioral model and means of testing risks, which then reinforce a particular form of communicative governance, one based on extensive use and combination of informational tools. Understood this way, nudge has more to do with the informational turn in policy design than with a pending behavioral revolution (an argument also made in Esmark 2017). In the public policy literature, the use of

policy instruments was also developed to understand the change in the provision of services, the rise of automatic instruments to avoid blame (Weaver, 1989), to improve policy implementation (Bertelmans-Videc, Rist and Vedung, 1998) or to identify public policy change (Esmark 2017). Nudge can be seen as a “de-politicizing” force in the various forms of its tools (i.e., RCTs) and models (i.e., dual-process theory).

### *RCTs as Behavioral Policy Tool*

The “global wave of experimental trials,” as de Souza Leão & Eyal (2019) put it, is often managed by organizations such as BITs or the Abdul Latif Jameel Poverty Action Lab in the US. Randomized Controlled Trials (RCTs) are often seen as the “gold standard” of experimental evidence. RCTs serve to test which organization in the context of choice works best to nudge individuals towards more rational choices, without eliminating their freedom of choice. RCTs in the hands of behavioral experts (including so-called “randomistas,” such as Esther Duflo and the Abdul Latif Jameel Poverty Action Lab) allow for the combining of scientific validity and reliability with political relevance and applicability (de Souza Leão & Eyal 2019). Through calls for systematic integration of experimental evidence, RCTs perform the function of “evidence-based” policy. Such policy assumes a “de-biasing” effect (de-biasing of political ideology or motivated reasoning), and is often seen as having the additional effect of eliminating the need to take into account race, gender, etc. Put differently, RCTs rely on statistical measurements that quantify people into discrete numbers, which separate the individual from communities, identities, etc. and instead uses certain numbers to generate large correlates of data. In seeking overall validity, behavioral experts reduce the complexity of people. In order to seem less reductive, many behavioral scientists now often attempt both laboratory and field experiments (see previous chapter); whereas nudge policymakers must rely on field experiments and pilot studies that show

promising numbers in terms of the effectiveness of nudges. Yet, for nudges to be seen as economically valuable, they must have economically ‘real’ consequences. That is, for nudges to be seen as effective, they cannot simply be choices made on a computer in a laboratory as this does not have an effect for the subject in “the real world.” Hence, the rise of field experiments.

According to some critics, the verifiable and evaluative method of RCT creates an illusion of control (Dunlop & Radaelli 2015) among experts and policy actors. Part of this illusion is due to the fact that RCTs “are not capable of telling us what would happen if these policies were implemented to scale, of capturing unintended consequences that typically cannot be included in the protocols, or of modeling what will happen if schemes are implemented by governments...(Deaton & Cartwright 61).” That is, RCTs are meant to depoliticize ideologically loaded problems by their very premise of removing “non-essential variables” and to identify the most effective policy tools.

### *Models for Nudges*

Another area of debate is between the ethical usage of either ‘nudge 1’ (targeting System 1 cognitive processing) or ‘nudge 2’ strategies. This dichotomy reinforces notions of the dual-process theory, thereby dual-nudges and dual-minds reflect and reinforce one another as a form of performativity.<sup>96</sup> How do we know there is a system 1? Nudgers may answer this by saying that it

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<sup>96</sup> The concept of performativity is even more important for my analysis of behavioral economics. Although there are several interpretations of performativity (MacKenzie, Muneisa & Siu 2007), the idea is that economic theory creates the phenomena that it describes. Francesco Guala, for example, elaborates on the role of economists in the creation of markets by differentiating between two types of performativity. Type-1 performativity is not really performativity at all; Type-1 merely denotes that economic experiments inform institutional design. This is quite different from what Guala calls Type-2 performativity, which is when economics goes from informing the “right” conditions for “rational” behavior, to actually shaping the “behavior of the individuals who will act in the designed environment.” (2007: 152). Type-2 performativity is a force that extends its power over the individual, limiting and coordinating his or her actions. This “disciplining” of the experimental subject is done through increasing monetary incentives, emphasizing privacy of actions, and giving instructions before the start of the experiment “in order to make sure that subjects understand what is in their ‘real’ interest, what ‘ought to be done rationally, or what ‘really’ to expect from others.” (Guala 2007: 144).

is because “system 1 nudges work.” However, nudge plus requires careful justification (more psych science). It is essential to understand how nudges relate to the dual process models as advanced by Stanovich and West (2000), then taken up by Kahneman (2013) and Thaler and Sunstein (2009) as it is seen in most behaviorally-informed policy documents that I examined, including MINDSPACE.

As we have already seen, many of the top behavioral economists see the mind as being composed of a more recent, deliberate part of the mind and a more “primitive” part of the mind. Now the primitive part is not necessarily always in error or the cause of self-sabotage; however, this is the most frequent explanation for “irrational” behavior and is often cited as the central impetus for behavioral policy (MINDSPACE). In this way, behavioral economics represents a therapist for society, but rather than target groups or individuals alone, they target the “dividual” level.<sup>97</sup>

In keeping with economic analysis, other behavioral experts in policymaking settings, link to economic terminology such as externalities, internalities, and discount rates.<sup>98</sup> Typically, externalities is a term that covers the costs or benefits of an activity which spill over onto people not involved in the activity (i.e., neighbors disturbed by loud music or people who breathe polluted air). In the case of behavioral economics and nudge, an activity such as smoking cigarettes or skipping exercising today does not generally harm anyone else, however, as nudge experts argue, it likely harms your future self (Allcott & Sunstein 2015). The idea of internalities (and hyperbolic discount rates) support the notion of present-bias and the idea that multiple or split selves, where one sabotages the other. In such instances, it is up to the behavioral

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<sup>97</sup> An argument also made by Loewenstein & Haisley (2007).

<sup>98</sup> These terms are not unfamiliar to policymakers who typically have to use economic discourse in their work and policy advocacy.



policy expert to guide the choices that benefit the “future self,” which is usually associated with the deliberative System 2. The debate over which self (present or future self) or processing system (System 1 or System 2) to nudge continues amongst behavioral economists and policy-makers, as we shall see in the next section.

### LIMITATIONS, CRITICISMS & DEVELOPMENTS

As behavioral expertise and nudge applications have grown, we have paradoxically seen more and more authors also point to failures of behavioral public policy. Some of the problems that behavioral economists have spoken about include hesitancy at applying behavioral economics research to social problems, issues with methods, fads in findings, research or application errors, backfiring of nudges, open data of studies, transparency of nudges, etc. Or, to put it in more direct terms, White (2013: 59) contends that nudges are “ineffective, unethical, and counterproductive.”

Part of the hesitancy to use nudges in policy is based in part on fears of the cognitive biases of researchers and policy-makers themselves. As one interviewee said, “Even policymakers and researchers might get things wrong.” One such cognitive bias for researchers would be the fads in findings. For policymakers, this could be the novelty or cost-effectiveness of the initial nudge implementation. The benefit of nudge is that the solutions that they suggest are “simple and easy” yet, “there are some problems,” as David, a behavioral economics graduate student I spoke with said.

One current problem that behavioral economists and nudgers have been discussing is often known as “backfiring.” Take one of the most widely cited nudges, the Save More Tomorrow program. In this instance, when people go along with the nudge and stick with the default (investing in retirement savings), there is a kind of backfiring in that people then take on more credit card debt along the way. Citing another study, one interviewee stated that “people will stick

with the 3% saving default, though some people would have saved 10% if the opt-out default policy was not in play.” Other behavioral economists discuss this in terms of “moral licensing,” (Bartke et al. 2017) thus shifting the blame from poor behavioral studies or policy implementations created by behavioral experts onto the research subject or policy target to explain the failure of a particular nudge intervention.

Other related current problems would be the overall effectiveness of nudges, as well as the appropriate level of nudges. For instance, some people, including a couple of the behavioral researchers I spoke with, claim that a carbon tax would be better than a nudge when it comes to environmental policy and carbon regulation. This is in direct conflict with work of other behavioral economists, such as those who have worked with OPOWER, the company that provides a software platform to utility companies, who attempt to nudge people to consume less by giving electricity users context for how much they use compared to their neighbors. The two behavioral economists I mentioned above, said directly, “OPOWER has negligible effects.”

Yet another problem for behavioral experts has to do with the perception of a nudge being eventually seen as ineffective by behavioral research standards. As Anthony, another behavioral economist, put it, “There is a risk of something happening, like with implicit bias training. There is no evidence for this working whatsoever, but companies love it, because they can say they are doing something.” That is, we can see from the problems outlined by behavioral economist George Loewenstein and others (See Loewenstein et al. 2017), that there is a lack of longitudinal studies and replications of field experiments in new settings. In other words, if nudges are seen as only working in the short-term, or only in one-off experiments, then what is their value?

The politics of nudge are complicated further when one takes into account the possibility of (cognitive) bias of the behavioral experts and policymakers themselves.<sup>99</sup> A recent report by the BIT on ‘behavioural government’ argues that elected and unelected officials are themselves influenced by the same heuristics and biases that they try to address (BIT 2018: 7–13). Strassheim (2021: 5) further states that “Policymakers and professionals themselves tend to under- or overestimate risks, overreact to certain issues or problems while ignoring others or interpret evidence in line with their own beliefs...” While in another recent article, Lodge and Wegrich (2016) describe the ‘rationality paradox of nudging’: “[A]t the heart of nudge is a basic paradox: it assumes bounded rationality but offers a comprehensive vision of rationality to address problems caused by bounded rationality.” (253). Finally, both the World Bank (2015) and the United Nations (2016) have shifted the attention back to this question: What are the cognitive limitations and biases of experts and decision-makers? In order to answer this question, and respond to other such criticisms and limitations above, nudge experts have created new or adapted previous concepts, which we shall now turn.

### *New Approaches to Nudging*

One of the key demarcating strategies that describes ethical dimensions of behavioral nudges has come in the form of the binary between nudge and so-called sludge. Derived largely from the work of Thaler, a sludge is a term to discuss nudges that are not for the greater good and can be a threat to democratic processes. The term sludge (as well as the term “dark nudge”) is most often used to talk about manipulation against a person’s best interests. This can be seen in various

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<sup>99</sup> The research carried out by Kahneman and Tversky was, at least in part, originally motivated by the question as to how the intuition of experts and professionals works (Kahneman 2013).

marketing nudges that privilege profit over reducing obesity or through data collecting/selling data or unethical experiments like the Cambridge Analytica scandal (see Barker 2018).

The adaptability of nudge theory and strategic science can be further seen in a new catalog of nudges and variant approaches that were catalyzed by previous and current criticisms. Such terms and divergent approaches to nudge theory include sludges, dark nudges or dark patterns, shoves, budes, nudge plus, though there many others, given the wide influence of nudge. For instance, many behavioral economists have attempted to differentiate between nudges that are transparent, fair, and provide a better outcome for a decision-makers wellbeing, and nudges that are not transparent, fair, or better for the decision-makers wellbeing. Richard Thaler now calls these latter nudges, sludge. As Thaler (2018) writes, sludge can come in two different forms: “It can discourage behavior that is in a person’s best interest such as claiming a rebate or tax credit, and it can encourage self-defeating behavior such as investing in a deal that is too good to be true.” Other researchers and policymakers have also referred to dark nudges and dark patterns. In reaction to such dark patterns and sludge, Oliver (2017) talks about ‘budes,’ which are interventions in order to get private industries away from marketing sludges.

As previously mentioned, other behavioral experts and policy-makers have advanced a pointed criticism of nudge over its weakness to make larger, and longer-lasting, behavioral change. One such critic in this regard is Sarah Conly, who argues for a more “coercive libertarianism” over the “soft paternalism” of nudge theory. Conly and others thus propose that policymakers utilize shoves, or legislation or bans, over nudges in specific cases. In the case of obesity, for example, Conly (2013) recommends banning trans-fat above maximum acceptable limits, which will have the effect of ameliorating negative externalities rather than tackling negative internalities. It may seem odd that some nudge theorists propose shoves, considering the *raison d’être* of nudge is to

avoid strong forms of paternalism that may bring substantial controversy and opposition; however, Thaler and Sunstein have never proposed nudge or libertarian paternalism as the solution for all policy issues or debates. For ‘shove’ advocates, shove is an acceptable form of nudging when it is an explicit regulation of citizens’ behaviors where such regulation indisputably brings benefits to those who are targeted that outweigh the costs of restricting their freedom.

The BIT (2018: 11–12) also suggests strategies to overcome the biases of behavioral experts themselves, advising that transparency about evidence, as well as building networks to access expert advice and insight, assembling teams that are “cognitively diverse” or integrating experimental trials into policy execution. Some commentators have argued that there should also be transdisciplinary training courses “designed to inform policy-makers and experts alike about potential pathologies, questioning the separation between values and facts and allowing the collective exploration of behavioural public policy failures could be a way to overcome these biases,” (Strassheim 2020: 13; see also Dunlop & Radaelli 2015).

In advancing change to nudge policy and thought, John and Stoker have proposed ‘nudge plus’, which advocates for more focus on deliberation in nudge policymaking (John 2018; John & Stoker 2019). Rather than simple manipulation, such as an opt-out policy, a “nudge plus” would include a reflection tool as part of this default. The agent receiving a default combined with a plus would switch from thinking fast (System 1) to thinking slow (System 2). What this shows is the role of expertise in guiding thinking and behavior through the built environment and the substitution of values, which initially seemed to be endemic to the previously ‘un-nudged’ agent.

## CONCLUSION

One of the strongest arguments in favor of nudge is that the presentation of choices (or ‘choice architecture’) is not neutral; setting one type of default dissuades the chooser from the

other option. In essence, all choice architecture is the result of certain sets of values. By bringing more attention to the ways that choices are presented opens up possibilities, including resistance to the given choices right now. We can think of the radical options of abolition and transformative justice over incarceration today as a way of slating one type of choice architecture for another. Such changes are certainly not a nudge. While more aggressive than a nudge, it is not necessarily a shove since it would not be a federal, or otherwise ‘top-down,’ enforced policy. We could also think of choice architecture in terms of Closed Captions as the default in video recordings as another, less radical, form of choice architecture. In any case, all these ways of politicizing choice architecture must keep in mind the mediation of nudge (governmental) logic, which locates politics in behavioral science, which sees people as statistical numbers, and sells psychological explanations for our “self-destructive” choices.

Similarly, nudge has an overly psychologized idea of people’s ‘environments’—only looking at immediate, physical and technical aspects at the micro-level that have proved to affect decision-making in psychological experiments (Whitehead et al. 2017). This neglects that the immediate choice environment is also shaped by deeper socio-cultural, institutional, political, and economic forces at the macro-level (perhaps, what could be called a meta-choice architecture) that are much less ‘craftable’ in comparison to nudge reform policies. As White (2013) and others have argued, nudge theory makes the contradictory claim that people will be nudged into better decisions when they want to but will somehow be unaffected by nudges when they have better reasons to make a different choice.

Part of the appeal of behavioral economics is that it validates the position of the policymaker. Whereas the policymaker is the one who guides the citizen into better outcomes, so now, thanks to nudge, does the behavioral expert. How behavioral experts have made their appeals

are just as important as how they have followed through with their proposals. As previously mentioned, part of what makes certain claims made by behavioral experts so appealing is that they cast the everyday person as irrational and in need of guidance. It allows the policymaker to have clout, while also not appearing as overly paternalistic and authoritative. In being so helpful to those who struggle to maintain health and obtain wealth, “nudgers” act as therapists to a maladjusted society. But in helping “the poor and less educated,” adjust to an oppressive society, they do little to actually oppose such oppression.

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**CONCLUSION:**  
The Cost of Behavioral Paradigms

In this dissertation, I have presented a constructivist account of behavioral expertise by exploring the institutional discourses, boundary-work, and experimental practices that helped shape the development of behavioral economics. My findings reveal the connections and disconnections across scientific disciplines in the development of the field. In addition, I have shown how behavioral scientists constructed a deficit model (Wynne 1993) of the subject, who is prone to internal contradictions and slips of self-governance, which traveled from the laboratory to public policy. Race, and other axes of difference, were at various times centered or ‘de-centered’ in these deficit models. By sharing the repressed history of the field and showing its contemporary manifestations, I hope to open possibilities of imagining the “behavioral” otherwise.

In my history of BE, and its measures and concepts, such as intertemporal choice and reaction time, I have revealed how the history of scientific racism, along with biological determinism, has continued in the background of this field and related ‘nudge’ policy recommendations. This trajectory from the nineteenth century to today, I argue, should principally be thought of as the result of co-production between knowledge and social order (Jasanoff 2004). Knowledge production institutions (as in universities, for example) can be conceived of as bounded social networks of discourse and practice, which shape and rearrange social status, and epistemic communities (Hirschman & Popp Berman 2014). I have shown for instance how experimental assemblages like the chronoscope that traveled from the German laboratory of Wilhelm Wundt to the study of racial differences by R. Meade Bache (albeit in different versions). Or take the intellectual and institutional lineage of many of these scholars are also discussed, such as B.F. Skinner, who passed his laboratory, as well as his behavioral engineering ambitions, down

to Richard Herrnstein. In turn, Herrnstein mentored George Ainslie and numerous younger behavioral economists.

Since institutions shape discourses, by looking at research papers and interviewing contemporary behavioral economists, we can also see how racial discourses were shared, rejected, ignored, obfuscated, or repurposed by these scientists. The immediate intellectual and institutional frameworks should not be studied as completely distinct from other institutions and processes, however. The repressed history of these behavioral concepts, research, and policy should be considered in the context of structural violence and bifurcated institutions of governance.

In this concluding chapter, I begin by connecting some of the narratives presented in previous chapters. I then discuss issues of psy expertise (Rose 1998) and how forms of psy expertise were taken up by various institutions for the purpose of screening and intervening on psychologized subjects, a process also known as therapeutic governance. The following three sections expand on these various modes of therapeutic governance by exploring the concerns of social inequality in nudge, the role of models of addiction in the making and application of behavioral science and policy, and the “collective amnesia” that uses the “behavioral” to displace structural violence. I then outline the limitations of my findings and analysis before I discuss possible, and actual, future research projects that connect to my dissertation findings. I conclude by asking the reader to imagine radical interventions at the level of “meta-choice architecture.”

#### RETURNING TO THE PROBLEM OF THE LAWFUL ECONOMY

In the case of this longer historical perspective, as provided in this dissertation, we first attend to biology and psychology in their nineteenth century forms. Although Darwin was a considerable influence on early psychology, it was Spencer’s neo-Lamarckian perspective that

likely shaped early experimental interventions on the minds and habits of psychologized subjects. For Spencer, and the many scientists who were influenced by him, heredity was something to be studied empirically, locating both essential and plastic traits in humans. The most evolved human is one that compounds adaptable reflexes over time. The civilized human, in this view, is intelligent and relatively autonomous, with less reliance on the body and speed of physical reactions to the environment. The scientific assessment of intelligence continued into the early twentieth century, particularly in the context of eugenics and euthenics.

### *Reaction Time and the Self-Sabotaging Mind*

The scientific assessment of intelligence included reaction time (RT) research, which, in the late nineteenth century and early twentieth century was often studied concurrently with IQ tests and other “normalizing” scales (i.e., from Galton and Bache in the late nineteenth century to Cattell and Jastrow in the early twentieth century, to Jensen and Herrnstein in the mid-twentieth century). These studies were often used to understand differences in instinct and cognitive ability between racial groups and were the basis for one of the first modern scientific models of the mind, i.e., the law of economy, which states that habits and reactions are the means in which the mind alleviates its own burden of having to constantly form conscious choices.

Nineteenth century RT tests revealed individual and group differences in reflexes, though when combined with other experimental tasks, the RT implied differences in mental capacity. As RT became a standard approach, an assumed measure that became part of the background of the experimental process, as in a routine procedure. Nevertheless, RT remained essential to experimental psychology in assisting in determining mental fatigue, hyperbolic discount rates, and cognitive load, while also providing empirical support for the law of economy, and dual mind theories such as DPT (see Rubinstein 2007 and Fudenberg & Levine 2006 as examples).

Perhaps the most well-known example of DPT comes from Daniel Kahneman’s “default-interventionist model. Kahneman’s DPT is always in danger of the self-sabotaging System 1 that reacts quickly and impulsively. While there may be an evolutionary benefit to System 1 (as argued by Kahneman and others), it can also be the cause of cognitive error. This error is usually due to cognitive overload, which is often conceived as an effect of environmental influences, such as too many stimuli or visceral influences or complex information, which wears down System 2’s ability to contain the impulsive and ravenous System 1. Kahneman’s DPT can therefore be seen in the context of the “attention crisis” and other concerns related to consumer culture and the deception of marketing campaigns (for more on the methodological conflicts around DPT more recently, see Brisset & Jullien 2019).<sup>100</sup>

### *Economic Models of the Future*

Reaction time measures and theories of self-control became important to economic thinkers in the late nineteenth and early twentieth centuries. In particular, these experimental measures allowed economists to model preferences and utility over time with empirical data. Despite this initial interest in experimental psychology, much of the twentieth century economic profession was decidedly uninterested in creating ‘trading zones’ of exchange. Instead, these economists invested in the boundary-work they deemed necessary to legitimize economics as its own field, one that they saw as more objective (based on ‘rational’ axioms and mathematical models) than the subjective empirical approach that they saw in economics (though, for a time, behaviorism was favored by certain mainstream economists). Eventually, in the latter half of the twentieth century,

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<sup>100</sup> While I have not developed enough evidence and argument to construct an alternative model to DPT, in this dissertation there exists many other alternatives in the cognitive (whether psychological or sociological) literature. For now, I shall point to Pardo-Guerra’s Barnes-Callon synthesis model of cognition that “...embraces both socio-cognitive and structural factors (via Barnes) as well as the role of materialities and calculative agencies (via Callon)...” (Pardo-Guerra 2011:220).

economics was considered to be a valuable field for policy and commerce; however, other policy issues would come to the fore in the 1970s and 1980s that opened up the opportunity for a new exchange between psychology and economics. In the remainder of this section, I trace a bit of that history, and show the importance of race in the development of the field and its intertemporal axioms.

As explored in chapter 3, economics was also a racial project (Omi & Winant ), constructing the civilized man as the rational economic actor, and the savage as the irrational Other (Dimand 2005). The construction of economic theory was not just about the management of colonies, though that played a substantial role (Zein-Elabdin & Carushella 2004), it was also about the management of the poor in European states (Peart & Levy 2009), and the slave (Pack & Dimand 1996). In some of these cases, the poor Irishman was cast alongside the “savage” as impulsive. This irrational other was constructed as prone to overconsumption, substance use, and aversion to labor, but perhaps most dangerous of all, driven by sexual impulses that could lead to overpopulation (to the detriment of the Anglo population). The problem for these economists was that if these people act without constraint, the future will likely be lost due to these “base impulses.”

Early economists therefore turned to modeling utility preferences over time to better understand how the economic environment could be restructured to constrain these proclivities for immediate consumption. These models of discount rates over time framed certain individuals with a high time preference. A person with high time preference prefers more immediate smaller rewards over larger later rewards (much like the structure of Mischel’s marshmallow experiments discussed in chapter 4). High time preference was frequently discussed in terms of differences between races and ethnicities in late nineteenth century and early twentieth century economic



thought, as we saw from economic thinkers as (theoretically) diverse as William Stanley Jevons to Irving Fisher to Nassau Senior. While the descriptions of high time preference in explicitly racial terms eventually faded later in the twentieth century, economic models of discounted utility became dominant, once again portraying a steep preference for immediate rewards as irrational.

Rather than challenge these normative models on normative grounds, behavioral scientists in the late twentieth century, began (almost by accident, in the case of Herrnstein's matching law at least) building descriptive temporal models of utility discounting through empirical experiments, first on pigeons and other nonhuman animals, and then humans. These behavioral experiments revealed the average discount rate of the research subjects, which happened to be hyperbolic rather than the normative exponential function. According to these findings, that is, all humans have a preference for immediate rewards, much like the animal subjects. Upon initial examination, these findings seem to counter the racist 'unequal competence' models of colonial economic theorists; however, individual and situational differences of these rates were also frequently reported from these experiments. That is, differences in IQ, RT, cognitive reflection, and emotional regulation could be used to determine just how present-biased certain people are. These measures were also used to compare individuals depending on educational levels (as in Mischel's research for one) and socioeconomic status (as Herrnstein had done). Moreover, these scores indicated issues of emotional disturbance, impulsivity, procrastination, self-control failures, and perhaps even the proclivity for substance use and criminal activity. Since educational levels and socioeconomic status, as well as criminal records, are largely racialized categories, especially in the US, we see the return of 'unequal competence' when it comes to intertemporal choice. The same behavioral concepts and techniques developed in these time-discounting experiments present the means to influence people outside the laboratory (particularly if they are framed as self-

sabotaging). The following three sections explore this development, as well as the many ethical and epistemological issues I have identified with psy expertise and nudge.

## SELLING PSY EXPERTISE

Influenced by evolutionary theories of “primitive” impulses, or drives, psychologists in the early twentieth century marketed their expertise with analytic and behavioral tools to control self-sabotaging behavior to individuals and institutions (Pettit 2013). That is, in the twentieth century, we see the proliferation of private therapy, self-help books and discourses, as well as psychologically-based forms of management and marketing (Pettit 2013; Rabinbach 1992). Psychology, as a professionalized network of experts, was also integrated into educational practices and military training (see Herman 1995 for instance). After receiving institutional support from foundations and universities, professional psychologists began to envision a wider application of their theories and interventions, which have been applied to behavioral policy (as in nudges) and user-interface designs on digital platforms. In these cases, psy expertise is the use of standardized behavioral discourses that are tied to experimental practices and theories.

As discussed in chapter 4, Alfred P. Sloan Foundation and the Russell Sage Foundation were key actors in the development of nudge. Through Wanner’s early recruitment of Kahneman, and the role of Herrnstein in developing the matching law and first working group, we see the first intentional collective exchange from researchers interested in issues around intertemporal choice and cognitive errors in the context of economic discourse. Their combined interest in engaging, and often challenging, standard economic accounts of economic behavior led to the first behavioral economics edited volume (Loewenstein & Elster 1992). From Herrnstein’s matching law and challenge to Becker’s rational addict model, we see the development of hyperbolic discount rates

from experimental findings. The unequal behavioral results between subjects emphasize the various choice reaction times when it comes to visceral stimuli, and thus relates to the delay of gratification and self-control literature. The hyperbolic discount model, for Thaler and others, therefore represented the paradox of self-control. This is seen in Thaler's "doer" vs "planner" model of dual-self agents (though published initially with Shefrin in 1981). The 'doer' part of our mind is much more impulsive, resulting in hyperbolic discounting and the risk of acquiring addictive behaviors. The doer is contrasted with the planner who acts like the standard economic account. Like in Kahneman's dual-process model, the planner (like System 2 of DPT) attempts to guide or suppress the doer (which is akin to System 1).

As shown in chapters 5 and 6, the boundary-work of younger behavioral economists expresses the determination of these researchers to remain flexible to changing data and policy and ethical norms, while differentiating from any one behavioral or social scientific field. However, these behavioral economists were principally concerned with producing methodologically-sound (according to their field's norms) studies and keeping up publication expectations. These publications are meant to add value to the behavioral expertise of these researchers. Behavioral economists thus use rhetorical strategies to conduct boundary-work that maintains only a loose relationship between psychology and economics. Whereas intertemporal choice has been a boundary object for psychologists and economics working in BE, dual-process theory (DPT) and quasi-hyperbolic discounting (QHD) tend to be treated as anti-boundary objects: the former being primarily an object of study for psychologists, and the latter primarily an object of study for economists. Behavioral economists also use rhetorical strategies to maintain the veneer of scientific objectivity and validity while conducting scientific research for the purpose of shifting public policy (as in nudge theory).

We see this extension of behavioral methods (choice reaction time measures), concepts (present-bias), theories (DPT), and metaphors (nudge) into the policy arena in a variety of ways across local, corporate, national, and international governing institutions (Whitehead et al. 2017). In many of these cases, nudges (or behaviorally-informed policy) are enacted for the purpose of reducing economic and social problems; for example, in the US nudge policies have been implemented to influence (governmental) employees to save money for retirement by making the default policy for a 401k savings plan an opt-out, rather than opt-in. Since, according to behavioral economic researchers, people tend to follow whatever the default option is, such that if the default policy for retirement saving plans is opt-in, most people (or at least the one with a “default bias,” which is also a kind of present-bias) will not enroll. For many US citizens, retirement savings are lower than what they will likely need in the future (again, because of hyperbolic discounting), and most people do not act like the rational economic model. In this way, nudge can be positioned as a collective (or at least, governmental) desire for a more efficient economy.

Other nudges, particularly ones that attempt to entice people to contribute to charities, likely reveal a similar desire for a more equitable economy. However, these, and other nudge policies and studies, that deal with poverty and economic inequality in the US rarely ever mention racial categories and never (to my knowledge) discuss institutional forms of racism. Despite nudge theory proponents arguing that the nudge policies can shift the status quo by changing choice environments, it actually appears to be a method of adapting to a pre-existing economy and environment. I therefore argue that we should see nudge theory as a continuation of structural inequality and ecological destruction, even as it attempts to manipulate individuals in their immediate environments “for good.”

These attempts at manipulation can be found not only in the concrete material environment, but they also exist in digital contexts. Zuboff (2018) makes this point by analyzing choice architecture alongside other forms of “tuning,” or subliminal cues that influence the digital device user. While I do not believe that nudges are capable of substantial subliminal manipulation in the way that Zuboff describes, Beattie (2021) does describe (through qualitative interview) the discourse of nudging, including references B.F. Skinner and other psychologists, that digital wellness app developers use, often to counteract the behavioral ‘traps’ (Seaver 2018) that other interface developers set up to entice people into continual interaction with their platform. The example of digital wellness app designers reveals a similar “therapeutic” discourse as nudge theory. In both cases, the number of choices (of products/platforms) available to the user (or citizen-consumer) are often overwhelming (leading to cognitive overload for the user) or manipulative (the use of behavioral conditioning techniques), exploiting the (economically) “irrational” consumer. It is up to the designers and policy-makers to incorporate psy expertise to protect this consumer from the exploitative practices of marketing experts<sup>101</sup> and use other behavioral conditioning techniques to lead the consumer to more economically rational and healthy choices since nudge experts are well versed in economic rationality, behavioral techniques, and have (at times at least) institutional and governmental resources to implement changes to the choice environment.

### *Nudge as Therapeutic Governance*

One way to understand the role of nudge is an extension of medicalized categories, but not diagnoses, to treat every day “idiots,” a term with a history linked to eugenics and ableism (see

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<sup>101</sup> Seaver (2019) points out the irony of Nir Eyal writing a book about how to use behavioral methods to “hook” consumers to their products (Eyal 2014), only to then later write a book (Eyal 2019) that explains to consumers how to use behavioral methods to make themselves “indefatigable” and resist the behavioral techniques used in marketing and digital design.

Jarrett 2020 and McDonagh 2008), though also used in a 2003 article on the use of behavioral economics to policy. “In a sense, behavioral economics extends the paternalistically protected category of ‘idiots’ to include most people, at predictable times. The challenge is figuring out what sorts of ‘idiotic’ behaviors are likely to arise routinely and how to prevent them, while imposing minimal restrictions on those who behave rationally.” Camerer, et al. (2003: 1218). From this quotation, we better understand the link between nudge theory (or asymmetric paternalism, in this case) and ideas of deficiency and possibly degeneracy since previous generations presumably did not require behavioral interventions.

In many ways, this long history of BE reveals its origins as a *degeneracy research program* (Hacking 2001), wherein people with self-control problems are innately deficient, passed on from previous generations. Following this framework, the underlying rationale for nudge is that (abled) people today are more prone to cognitive overload and hyperbolic discounting than in the past. Behavioral economists often emphasize environmental factors, since otherwise, changes to the environment (or choice architecture) would not have much impact on changing behaviors; however, as we saw in chapter 4, there is an underlying biological determinism as well. In any case, the focus on the built environment and comparisons between “normal” adults and the disabled (which goes back to early psychology; see chapter 2) are central in nudge theory discourses.

In order for nudges to treat the “everyday irrationality,” nudge theory creates a normative template<sup>102</sup> of choice architecture by importing behavioral economics findings and methods to the field (or built environment). That is, behavioral economics and nudge policy-makers take the

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<sup>102</sup> Normative template here is a model of design and could be further defined as the basis for a world (or built environment) created “without considering all ranges of ability.” (Hamraie 2012).

statistical averages of their studies to see if their interventions might work, sometimes by completing field experiments. Even though choice architecture may expand the design of the built environment to better accommodate a variety of cognitive styles, I have not found nudge theory to pay particular close attention to the social and environmental obstacles and discrimination that disabled people so frequently endure.<sup>103</sup>

Much like how disabled people are frequently subjected to a medical model of disability, which is also a deficit model that locates the problems of disability within the disabled person (e.g., Marks 2009), we have seen with Camerer et al.'s (2003) asymmetric paternalism, how behavioral policy acts as an extension of the medical model to people who are typically not labeled as such. I argue that this extension of the medical model to public and private spaces could be considered a kind of therapeutic governance that promotes a form of behavioral consumer-citizenship, wherein citizens should expect nudge-informed policy as a “safety-net” in the case of cognitive error, or self-control failure in the case of state-sanctioned market transactions.<sup>104</sup>

Therapeutic governance is a term coined by Vanessa Pupavac (2001) to describe the management of a populations' psychology, and its significance for security. While the form of psychology could be described as a standardized package (fit with models, concepts, measures, and methods) of knowledge production (Fujimura 2010), these packages can be repurposed as products by behavioral economics, sold to management and policy-makers (e.g., Whitehead et al. 2017). These behavioral packages, and resulting governance, could be considered a ‘therapeutic

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<sup>103</sup> We may counter the nudge framing of disability by bringing in the idea of the “misfit.” The misfit, in this case, is a positionality (or situation of misfitting) that considers how the particularities of “...embodiment interact with their environment in its broadest sense, to include both its spatial and temporal aspects.” (Garland-Thomson 2011: 592). In focusing on embodiment, and not just language, Garland-Thomson shows how we can go beyond the reductionist accounts of other models of disability, as well as primarily cognitive models like BE.

<sup>104</sup> See also Whitehead et al.'s (2017) conception of “neuroliberalism,” which can be defined as the use of psychological techniques to shape the behavior of citizens in “free” societies.

promise' (e.g., Rollins 2021). That is, instead of an immediate cure to the social ills of economic inequality for instance, we receive a therapeutic promise from behavioral economics; one that will solve our collective economic and environmental problems, for instance. Behavioral science hopes to nudge us into a post-internal conflict world. Through nudges, people are expected to delay the gratification that would come with existing without the constraints of modern commerce and governance.

### NUDGING INEQUALITY?

One of the issues with nudge theory that I have explored in this dissertation is the effects of nudges on social inequalities. The idea that nudges could perpetuate pre-existing social inequalities has not been thoroughly studied in the mainstream BE or nudge literature (though see Ridder, Kroese & Gestel 2021; Ghesla et al. 2020), nor has it been a principal concern for critics of nudge. The critics of nudge theory tend to see nudges as a dangerous controlling force that manipulates us through subliminal, undetectable conditioning; their criticisms appear to be a call for more libertarian policy rather than the libertarian paternalist role of nudge theory. However, for Thaler and Sunstein, the power of choice architecture in the marketplace and in policy is a call for more paternalism against nudges (or what they call sludge) that may exploit people (or certain groups), which Sunstein has addressed while citing the Ridder, Kroese & Gestel (2021) article. But in responding to this possible issue, Sunstein (2021) dryly remarks that it is only with more “personalized nudges” that can offset these distributive justice issues: “Some nudges will not help, and might hurt, identifiable groups. More targeted, personalized nudging may be needed to maximize social welfare and promote distributive justice.”



In contrast to this methodological individualism, I argue that a critical-sociological examination of nudge can lead us to consider the choice sets (or architecture) that certain groups tend to have compared to others. What does “choice architecture” look like for the incarcerated? Incarcerated people do not have the choice to be the kind of ‘impulsive consumers’ that BE models, but many people on the outside do. People who are not bound by the limits of carceral “choice” architecture are still expected to regulate their behavior, lest they also become incarcerated. Nudges certainly complicate the relationship between self and governance inside of a carceral society, particularly as nudge experts rely, and sometimes implement, various forms of surveillance. The use of behavioral experiments on digital platforms, for instance, has created a real-time laboratory in certain cases—to nudge some people, who may have high time preference for instance, but not others.

#### THE NUDGED ‘CONSUMER-ADDICT’

In much of the BE literature that I have read, ‘impulsive’ consumer behavior and substance use disorders are discussed in nearly identical terms. In either case, the person is seen as prone to impulsive behavior provided that the environment has an immediate choice option, whether the choice is to inject heroin in the case of the ‘drug addict,’ or to consume fast food items in the case of the ‘obese,’ (as BE and nudge theory tend to label people who use drugs and fat people, respectively). In either case of “impulsive” behavior, the ‘consumer-addict’ is predisposed to a high time preference, or a hyperbolic discount rate.

This deficit model of the consumer-addict is primarily seen in the BE and nudge literature as the result of mixing a predisposed deficiency and an overstimulating and abundant consumer economy. Biological predisposition and individual differences are further explored in studies

related to risk assessment and intelligence. For instance, in a review of studies on individual differences on time preference, risk-taking and intelligence, behavioral economist Shane Frederick stated that these studies “...support the view that cognitive ability and time preference are somehow connected...” (2005: 30). Frederick and other published studies (see Stanovich and West 2000 for one) have stated that IQ, RT, and hyperbolic discounting are all factors in determining the individual differences between System 1 and System 2 cognition. It is not a far leap to connect these individual differences to certain social problems, such as criminal behavior, substance use, and body size, as Herrnstein previously stated.

Substance use has been seen as a policy problem for behavioral economics since the first BE working group (seen in chapter 4). As I have argued, the matching law and hyperbolic discount model were largely based on models of addiction. The “doer” in Thaler’s model, is not only an employee, but is also an addict. In a more contemporary piece of review literature, behavioral economists, Roberto and Kawachi (2016: 84) wrote about the problem of temptation for people who use substances,

“...Lowered self-control can increase the performance of unhealthy habits. For example, a study of social drinkers found that on days with more self-control demands, participants drank more, were more intoxicated, and were more likely to violate a self-imposed limit on alcohol consumption (Muraven, Collins, Shiffman, & Patty 2005). Also, smokers who were asked to resist eating tempting sweets were more likely to smoke during a subsequent 10-minute break than smokers who were trying to refrain from eating a plate of vegetables (Shmueli & Prochaska, 2009).”

The connection between self-control and obesity policy were also made explicit in the early days of behavioral economics. Much like the “crack addict” depicted in Herrnstein’s work, fat people were assumed to have an internal hyperbolic discount rate, which meant a steep preference for immediate consumption (hyperbolic discount rates and ‘obesity’ are also correlated in more recent studies; see for instance, Peterson et al. 2015). When it came to nudge theory, Thaler and

Sunstein wrote, “When self-control problems and mindless choosing are combined, the result is a series of bad outcomes for real people.... Nearly two-thirds of Americans are overweight or obese.... Together, these facts suggest that significant numbers of people could benefit from a nudge.” (2008: 44). This statement is not only incorrect, but also further perpetuates weight stigma by framing fat people as food ‘addicts’ or as unable to control themselves in ‘obesogenic environments.’ The therapeutic promise from nudge theory to fat people is one of a ‘thin future’ (Fox 2018).

To be clear, nudges are not meant to be the equivalent of weight-loss programs, nor do these nudges only target people who have been medicalized as ‘obese’; in fact, nudge engineers are more interested in targeting people who are “at risk of obesity.” Such as the individual who may be at the cusp of an ‘obese’ BMI score, and seemingly needs more incentives (usually for increased exercise or diet change) to lose weight. In this way, nudge theory presents the ‘obese’ as antithetical to economic rationality, and following healthist tropes, that such people are “unhealthy.”

Nudges then serve as disciplinary devices to replace supposedly ‘unhealthy’ habits with ‘healthy’ ones. Seen in this light, nudges participate in the construction of ‘health’ into a form of punishment. In other words, defining health in behavioral terms further supports Da’Shaun L. Harrison’s (2021) notion that the social function of health is to punish those deemed unhealthy, who as Harrison asserts, is more often than not fat Black people (see also Strings [2019] on the long history of race, fatness, and models of self-control). For instance, even though about 95-97% of diets fail, fat people in our society are often expected to continue dieting no matter what, even if it means to the point of experiencing pain. Fat people are also expected to exercise even if it

hurts. These examples, and many others, are the reasons why “weight-loss nudges” should be challenged and removed.

Importantly, Harrison (2021) also reminds us that there exists a further link between behavioral models of ‘obesity’ and ‘addiction’ by citing the collusion of the “war on obesity” and the “war on drugs” in primarily targeting Black people (even though this was of course not the explicit purpose of these policies). Harrison cites evidence of the effect of these policies, such as the doubling of drug-related arrests of Black men between 1979-1989, and the NIH definition of ‘obesity’ that is tied to individual patient BMI in 1985, which had the effect of constructing the African American population as overrepresented (compared to other racial groups) in the ‘obese’ category. As I previously stated, the war on drugs was one of the reasons why early behavioral economists sought to connect their behavioral models to policy and why hyperbolic discounting was seen as the basis for understanding both ‘impulsive’ consumers and people who use drugs. Furthermore, many of the early examples of nudges were intended as a means to influence people to lose weight. These examples further highlight the importance of the political and racial context in the development of BE and nudge theory. In the following section, I explore the reasons why some of this history has been repressed and how we might reconfigure “the behavioral,” in its scientific and governmental forms, as a deeply racialized concept.

#### THE ‘COLLECTIVE AMNESIA’ OF BEHAVIORAL SCIENCE

The “collective amnesia” of BE, positions the field as originating in a post-race era.<sup>105</sup> Concepts of self-control, impulsivity, addiction, etc. are removed from their racial and colonial context. The further mathematization of psychology and the interdisciplinary exchange between

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<sup>105</sup> “Collective amnesia” comes from Charles Mills (2007).

psychology and economics in the 1970s and 1980s helped to give it an aura of scientific credibility. Seemingly divorced from earlier race science, the field could propose “race-neutral” policy solutions. Nonetheless, by revealing the history of the tools, theories, concepts, and methodologies used by mainstream behavioral economists, I have shown that it constructs a deficit model of the human subject. Of course, by relying on reaction time and intelligence (or cognitive reflection) measures, the field claims that while we all have limited mental energy and time, some people have more capacity than others, and implicitly, this “cognitive elite” requires less governance.

The Tversky (1967)<sup>106</sup> and Kagel and Wrinkler (1972) prison experiments reveal an alternative origin story to contemporary BE. These early BE experiments implied that people (though primarily Black men given the prison statistics in the US) in prison are better models of economic rationality, when their economic choices are restricted, than the economically irrational person outside the prison whose choices are abundant. Yet, it is principally the person outside the prison who typically is the target of nudge policy. The argument therefore has a kind of Malthusian resonance, wherein what is considered economically rational is a situation when an actor is either internally (as the self-controlled, ‘civilized’ individual) or externally restricted (as in the “criminal” or “deviant”) by the number of choices available.<sup>107</sup> These differences in frameworks of economic actors, therefore reifies bifurcated, yet dynamic, forms of governance, whether through policy in segregated areas, sentencing disparities, or drug recovery treatment programs (Kerrison 2017), or other forms of therapeutic governance.

Native Studies scholar Glen Sean Coulthard (2014) provides such an example when it comes to how forms of therapeutic governance are implicated in state policy attempts to repair the

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<sup>106</sup> Recall in chapter 4 that Tversky conducted an experiment to test how close men in prison behaved to the rational economic axioms (as developed by Savage).

<sup>107</sup> See also chapter 4’s discussion of Ainslie’s (1992) conception of the behavioral problem of too many consumer choices that breaks down our internal motivation (or rational consciousness), leading to impulsive behaviors.

psychologically injured or damaged status of Indigenous people themselves, rather than addressing structural issues, such as discrimination, exploitation, extraction, and social murder. Additionally, Anthropologist Henry G. Burger (1972: 345) wrote, while observing behaviorists “treat” the racialized poor, “Just as the physician is called for the sick rather than the well patient, Skinnerism is educationally invoked for the ethnic minority, not for the white bourgeois.” Around this time as well, Cobb (1974) argued that abusive behavioral experiments at the Vacaville prison facility in California and the Patuxent prison provided strong enough reasons for why Black people should not trust behavioral interventions. These abusive techniques, presumably meant to ‘therapeutically treat’ and rehabilitate the ‘criminal,’ reportedly included electroshock, psychosurgery, massive drugging, hypnosis, aversive conditioning and sensory deprivation. In each of these cases described above, the racialized populations are treated with individualized interventions when the issues are actually structural (as in the history of Indigenous genocide and removal, and racialized slavery and segregation, in the context of the US).

As Simmons (2020: 286) reminds us,

Historians tend to tell the story of social engineering in this way: early twentieth century laboratory scientists developed techniques to record, quantify, and manipulate their subjects’ behavior. Their midcentury successors took these tools out into the field and invaded our social environment. I would like to reframe that story, drawing inspiration from recent work on medical and social engineering of enslaved and colonial peoples. Laboratory techniques for psychological manipulation were intimately linked to projects of human engineering already underway in the colonial world of the nineteenth century. This included the settler-colonial environment of the American West. They were all part of this global-historical situation.

I only add that this history of colonial domination is found in the origin of dual-mind models as well. I currently have an article in-progress that explores these themes in more detail. For now, let us turn to the limitations of this dissertation.

## LIMITATIONS

As with all (scholarly) endeavors, failure is the rule rather than the exception. In the theoretical sense, I have been working on these problems for well over a decade; however, in terms of the empirical work, it has only been a few years. My findings reflect my methodology, which itself is institutionally-situated, not just by my training (or lack of training in certain areas), but also issues of funding, access, and time. My chronic illness played a role in my ability to travel to conduct interviews or visit archives in-person.

I have left out many technical details of the experiments I have mentioned since much of it requires more background and context of the experimental paradigms to elaborate on than I had time or space for. In some cases, this may have weakened my argument. There are many differences in approaches to DPT, RT, and discount rates, for instance. Even many of the individual figures in this account have held contradictory viewpoints or changed their opinion over time, which I did not have space to elaborate on. The technical details, while important, nonetheless serve its purpose in the overall arguments presented by these figures.

As I used a snowball method for recruiting my interview participants, and I only interviewed a limited number of behavioral economists, my findings in chapter 5 have a limited amount of generality to the field. Since I did not interview policy-makers, I also could not describe the importation of behavioral economics and nudge in that arena. Similarly, since I did not conduct an ethnography of lab practices, my analysis of such practices was limited, though perhaps not as much as other “outsiders” since I used to work as a behavioral researcher in several lab settings.

Although I primarily focused on individual theorists, the point was in their relationship to each other, to other fields, institutions, cultural representations, etc. What gets left out in historical narratives is indeed part of the point of this chapter. If I would have expanded on medicine and

early forms of psychiatry before experimental psychology, for instance, there were a number of other iterations of dual mind theories. These models were primarily developed in the context of the asylum, and usually as a way to describe the “insane.” In 1843, for example, John Barlow argued that the only distinction between the sane and the insane was self-control, which influenced Arthur Ladbroke Wigan, who in turn, spoke of ‘two distinct and separate cerebra,’ further arguing that it was up to the dominant, moral brain (with additional Christian education) to overcome and control its potentially wayward other half. Of course, many other examples of this could be investigated to explore their relevance to later dual mind models in experimental psychology.

Since I was primarily focused on the US, I left out other important cases. For instance, Lampland (2009; in Lampland & Star 2009) also discusses the use of psychology in social engineering and scientific management in mid-twentieth century Hungary. While the psychological terms used were interchangeable at this time, work scientists felt the need to try and measure instinct in workers so they could devise training and skills testing for workers to better adapt to standards that were not instinctual to the laborers. Instinct in turn largely depended on the race and ethnicity of the worker. The racial and ethnic categories at this place and time are obviously different from those discussed in this dissertation.

I also could have looked at other schools of psychology (like Gestalt psychology or cognitive-behavioral therapy), or other specific psychologists, such as Carl Jung or William McDougall, or specific behavioral economists like Paul Slovic or Gerd Gigerenzer. In fact, in his yet to be published manuscript, historian of psychology Michael Pettit writes a counter-history of BE by focusing on Paul Slovic and other “West Coast behavioral economists,” which provides a much different model of the mind than the one presented here. Similarly, I could have discussed in more depth the many alternatives to the default-interventionist model of DPT.



I have also largely decentered neuroscience, cognitive science, and positive psychology in my history of BE. In part, I felt that the histories of these fields have already been quite thoroughly researched (if you see my citations in other chapters where I previously discussed these fields), but perhaps, by neglecting their importance, I have placed too much emphasis on a particular strand of neobehaviorism in the development of BE.

While critiquing the whiteness of behavioral economics, I nonetheless centered my analysis on white researchers. The whiteness of scientific knowledge production is important; however, in going beyond the critique, we must explore alternative traditions. I have tried to go beyond this limitation in some of my current studies, as described below.

#### RELATED & FUTURE PROJECTS

Before moving on to talk about my current research that relates to this dissertation, I would like to first explore some other possible future directions in this line of research. One important research project would be an ethnography of nudges. This could perhaps be done in a multisite way, either by comparing enacted nudge policies, or by studying the process in which nudges are tested and then implemented. In addition, I think it is imperative that we understand the experience of being nudged from the ‘nudgee’ or experimental subjects’ point of view. Similarly, while Gowayed (2018) has explored the colonial context of behavioral developmental economics, there is more that should be examined, particularly given the historical development of the field that I have produced in this dissertation.

The work on this project has led me to contribute two related pieces to journals (Valasek 2021a; Valasek 2021b). The first paper, “Divided Attention, Divided Self,” provides a critical history of dual-mind theories, connecting many of the theorists explored in chapters 2 and 4 of this

dissertation; however, I focus specifically on their ideas and experiments on attention. In this article, I present evidence that dual-mind theories on attention, from the nineteenth century to DPT today, were based on comparisons of racialized traits. This history shows, I argue, that System 1 shares many features with psychological models of the “slave” or “savage” during R. Meade Bache’s time, and System 2 shares many features of the “civilized man” as described in the race science of that time. Both System 2 and this historical “civilized man” are often constructed as figures seeking self-mastery. The goal of self-mastery remains in much nudge theory and much user-interface design, which I further explore in Valasek (2021b). In “Disciplining the Akratic user,” I argue that most digital wellness studies and interventions are based on deficit models of the user/subject, much as I have argued in this dissertation. This article is more based on theoretical and textual analysis, though I do provide some historical background on the link between the design approach by Donald Norman (who previously conducted cognitive psychology experiments), and the influence of Norman’s book *The Design of Everyday Things* on Thaler and Sunstein’s approach to behavioral policy.

Since submitting those articles I have started several other works-in-progress, which, in various ways, are related to the content explored in this dissertation. The first article explores the historical relationship between BE and public policy concerns such as crime and substance use. For example, by expanding on my findings from chapter 4 of this dissertation, I show how these public policy concerns were central to the first BE working group. Not only do we see the proto-nudge recommendations from Herrnstein, (contra Becker’s rational addict model) when it comes to drug use, we also see a sustained application of behavioral economic principles to understanding addiction, and, in a way, vice versa. That is, we see how addiction was a kind of anomaly for economic theory, at least according to behavioral economists like Herrnstein, Prelec, Ainslie,

Mischel, and Thaler, who wanted to understand why some people might act in this ‘irrational’ way. Moreover, we see the same behavioral theories, such as Herrnstein’s matching law, applied in addiction science. Finally, I elaborate on behavioral studies and interventions in prisons during the 1970s that precipitated much of the behavioral economics work of the 1980s, which played a role in the construction of their concepts.

Another study (which I presented on during *4S 2021*) follows roughly the same time period during the 1970s and 1980s but focuses on Black psychologists in the US and their use of behavioral and cultural approaches to substance use. During this period, some Black psychologists looked to behaviorist models for developments of therapeutic treatments, but many of these psychologists also wanted to challenge the ways that white behaviorists included racial bias in their models. Hayes and Banks (1972; in Jones 1972) even proposed "the N\*gg\*r box" instead of the "Skinner box" in their behaviorist model. In contrast to individualized models of behaviorism, Black psychologists at this time proposed cultural and community models of behavior and treatment. While some Black psychologists advocated various behavioral treatments for "Black drug users," they were careful to point out that many of these alternative treatments to incarceration were tested on white research subjects. This piece thus examines an alternative research program that nevertheless draws upon some of the same concepts as the behavioral economists in the 1980s (such as Herrnstein and Ainslie).

The next project will feature some of the history of DPT that I have outlined in this dissertation to challenge the import of DPT into the cultural sociology literature. This can be seen primarily in the work of Stephen Vaisey and Omar Lizardo who use experimental psychology and neuroscience modeling in their papers. Certainly, the work of Vaisey (i.e., 2009; 2014) and Lizardo (Lizardo et al. 2016) is an improvement on relatively atomistic approaches in psychology and

rational choice theory, as they instead look toward cultural schemas and embodied aspects of cognition to explain behavior. While these sociologists make a strong case against simple Cartesian dualisms, they nonetheless reproduce an analytic dualism without consideration of genealogies of power. In other words, cognitive sociologists provide more context and nuance than their behavioral science counterparts, but in their haste to incorporate cutting-edge science into their own work, they have neglected to critically assess the assumptions of dual-process models. In particular, dual-process models are universalizing, yet tend to privilege deliberative cognition over automatic cognition, at least normatively speaking.

Some of the problems associated with dual-process models have been discussed elsewhere (i.e., Lamont et al. 2017; Pitts-Taylor 2014; Pugh 2013). I expand on these criticisms by connecting these models not only to problems of bioessentialism, but also cultural deficiency theories. This kind of deficit model (much like the one I described in the sections above), dual-process models in cognitive sociology (see examples in Leschziner 2019) tend to use, are comparable to the culture of poverty thesis (i.e., Scott 1997). While this is not exactly the same as the culture of poverty, it does seem to support similar notions in developmental and behavioral economics. Cognitive sociologists therefore need to ask themselves who gains from the application of dual-process models? Does it simply help as a boundary-object for interdisciplinary research? Does it provide any practical use for the subjects of said research? Does the use of dual-process models obfuscate plausible alternatives? I hope to provide some insights on these points in this paper.

An ongoing research project, titled “Mutual Connections & Disconnections: Exploring the digital wellness practices of activists,” is a collaborative one with New Zealand Media Studies scholar, Alex Beattie. Similar in some ways to my work, Dr. Beattie has written about digital wellness and the use of nudge to manipulate users on digital devices (Beattie 2021). For this

project, Dr. Beattie and I are interviewing political organizers in the US and New Zealand who use online platforms for political mobilization. In this context, these organizers have to balance their time on-and-off digital devices. We explore how these activists balance their organizing work with rest, both at the individual and at the organizational level. Since digital wellbeing studies as a field tends to draw from deficit models in the behavioral sciences and implements interventions that tend to follow behavioral nudge approaches, our project will show digital wellness at a broader, and political, level. The analysis and criticisms of these behavioral deficit models will draw upon my work completed in this dissertation.

Beyond these projects, I am currently part of a team of researchers who seek to challenge strictly behavioral approaches to public health and focus on structural barriers to health care. These projects include assessing issues of poverty, housing insecurity, and policing for people who inject drugs (PWID). In addition, I am working with Dr. Philippe Bourgois on an ethnography of a mobile public health research unit. For the remainder of this project, I will not only research the processes of knowledge production by public health researchers, but I will also be examining the interaction of institutions, such as the police, border patrol, recovery centers, social services, and medical clinics. Put differently, I will examine the geography of research within the complex of urban poverty governance (Lara 2021), as well as the selective solidarity (Raudenbush 2016) between PWID who navigate this geography of care, participation, and violence.

In sum, there are many directions for future research based on the materials shared in this dissertation. I am thankful for the opportunity to explore this area, which has the necessary background for the projects I have in-progress.

## RESISTING BEHAVIORAL ADJUSTMENTS TO A MALADJUSTED SOCIETY

In coming to the conclusion of the dissertation, I would like to state that I do not believe that every aspect of nudge theory or behavioral economics need be jettisoned. My analysis or critique was never meant to be totalizing, of course. However, at the very least, my research provides reasons to challenge the hegemonic interpretations and applications of these ideas. As such, it may be time to retire the term, “behavioral” altogether, particularly when it comes to knowledge production, policy, and treatment. Problems with the behavioral approach include individualism and ethnocentrism, as well as implicit politics that favors the status quo.

Herbert Marcuse stated, back in the 1950s, that psychological categories have become political categories, and while I believe psychology has always been political, the use of psychology and behavioral science today make it all the more obvious. One argument that behavioral economists, such as Thaler and Sunstein, has made is that nudges actually challenge the status quo. Thaler and Sunstein argue that by doing nothing, we are still shaped by the choice architecture around us. This may not always be the case, but it does bring up important questions like, who is outside of a choice environment? When are we not always already nudged? I doubt the behavioralists can answer that, but in any case, it makes obvious the imperative to further politicize choice and choice architecture, as well as non-choice (or force) and non-choice architecture (as in carceral “choice” architecture).

This could lead to reappropriating nudges as a form of prefigurative politics. Instead of a behavioral model of nudge, what would a meta-choice architecture approach look like? Can we imagine a new meta-choice architecture that decriminalizes all drugs, for example? Or a meta-choice architecture that provides resources to survive a pandemic? Let us move beyond the behavioral age, without delaying any further the gratification of collective resistance and care.

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