



Synthesizing Proximate and Distal Levels of Explanation: Toward an Evolution-Informed Sociology

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In this paper, we argue that despite the growing acceptance of psychological research by mainstream sociologists, the discipline of sociology remains largely averse to biology. This is because the kind of psychological research that sociologists now utilize tends to rely on the same assumptions of thought, action, and human behavior—broadly construed—that sociologists have on the whole tacitly endorsed since Durkheim’s seminal criticism of Kantian categories in *The Elementary Forms of Religious Life*: Namely, that fundamental categories of perception, though naturally experienced, are socially constructed. This assumption is present in both psychological work on schemas and the dual-process model, which continue to be incorporated into sociological analysis at a growing pace. We further demonstrate how sociologists’ overall positive reception of this kind of psychological research was facilitated by two factors: the rejection of biological explanations of human behavior and the tacit commitment to social causes by many sociologists in the field throughout the twentieth century. We demonstrate how synthesizing biological research with sociological research can extend existing sociological work by focusing on the study of parenting and crime and deviance. In these subfields, we believe sociologists can gain better understanding of their topics by moving from relatively proximate concerns to more distal ones. We conclude by asserting that seeing individuals’ decision-making styles and capacities as a product of both evolved and social processes can lead to the development of more robust and yet parsimonious models of action in the discipline. Doing so need not make sociologists blindly endorse evolutionary approaches to human behavior, but start our theories with a view to both long and short history.

Keywords: evolutionary psychology, sociobiology, Mills, Merton, schema

INTRODUCTION

Sociologists have become increasingly aware of the discipline’s overall resistance to biological explanations of human behavior. For example, in a special issue of *Sociological Forum*, Lizardo (2014, p. 988) stated that sociologists demonstrate a level of aversion to biological factors strong enough to prevent the discipline from ever reaching a “cognitive turn.” Similarly, former President of the ASA Massey (2002, p. 1) called for a deeper examination of “the biological foundations upon which our behavior ultimately rests.” Withholding some notable

exceptions (e.g., van den Berghe, 1975, 1990; Ellis, 1977, 1995, 1996; Lopreato and Crippen, 1999; Horne, 2004; Hopcroft, 2005, 2016a,b; Huber, 2007; Turner et al., 2015; Hopcroft and Martin, 2016; Marshall, 2016; Mazur, 2016; Niedenzu et al., 2016; Walsh and Yun, 2016; Aunger, 2017; Daly and Perry, 2017; Montagu, 2017), we echo Lizardo and Massey's concern that the discipline has remained steadfast in its rejection of biological explanatory factors (see Ellis, 1995; Lizardo, 2014; Walsh and Yun, 2016).

In this paper, we argue that despite the growing acceptance of psychological research by mainstream sociologists (e.g., DiMaggio, 1997; Vaisey, 2009; Patterson, 2014), the discipline of sociology remains largely averse to biology. This is because the kind of psychological research that sociologists now utilize tends to rely on the same assumptions of thought, action, and human behavior—broadly construed—that sociologists have on the whole tacitly endorsed since Durkheim's seminal criticism of Kantian categories in *The Elementary Forms of Religious Life*: Namely, that fundamental categories of perception, though naturally experienced, are socially constructed. This assumption is present in both psychological work on schemas and the dual-process model which place primacy on the claim that social experience gains unconscious and automatic prominence in individuals' thoughts and actions through the development of mental representations which come to guide perception (see DiMaggio, 1997; Vaisey, 2009; Patterson, 2014; Lizardo et al., 2016). The growing pace at which this view of cognition and action is being utilized by sociologists signals the need for demonstrating how, despite its seeming connection to biological aspects of human behavior, it is closer in kind to a specific branch of social psychology which actively rejected biological components of human nature.

We further demonstrate how sociologists' overall positive reception of this kind of psychological research was facilitated by two factors: the rejection of biological explanations of human behavior and the tacit commitment to social causes by many sociologists in the field throughout the twentieth century. We conclude by asserting that seeing individuals' decision-making styles and capacities as a product of social and evolved processes rather than as primarily socially constructed can lead to the development of more robust and yet parsimonious models of action in the discipline. Doing so need not make sociologists blindly endorse evolutionary approaches to human behavior, but start our theories with a view to both short and long histories or proximate and distal levels of explanation¹ (see Alcock, 2001, p. 38; Wilson, 2014).

By Tracing sociology's aversion to developments in sociobiology and evolutionary psychology more broadly within the 1970s and 1980s, we demonstrate how sociologists' acceptance of psychological concepts which support social constructionist theory (see Barkow et al., 1995; Wilson, 1998;

Machalek and Martin, 2014, p. 3) over psychological concepts which support evolutionary theory led the discipline to become partial in their use of psychological research and end up, at least in the upper echelons of their publication circuits, implicitly endorsing a view of thought and action which ignores many aspects of humans' evolved nature—except for, superficially, their capacity for “sociality” (for example, see Epstein, 2007; Piironen, 2014). By framing the individual thought process as largely socialized, yet strangely *naturally* categorizable as automatic and deliberate (see Vaisey, 2009; Williams, 2017b), and *naturally* as determined by the internalization of particular cultural elements (see Bourdieu, 1984, 1990, 1996; Williams, 2017a,b), some members of the discipline have come to attribute aspects of our being to immediate cultural contingencies rather than examine the role that evolution and much longer histories of cultural experience play in shaping our inborn, yet admittedly somewhat malleable, dispositions and proclivities (see Ellis, 1996; Walsh and Yun, 2016).

To make this argument, we will begin by demonstrating how sociologists' current emphasis on social “context” (e.g., race, gender, class, SES, lived experience), while generative of research to be sure, is less productive than it could be due to its origins in a neo-Kantian philosophical tradition, where any reality beyond the categories of our perception is ultimately unknowable (i.e., the categories are the only means by which we know reality). This approach explicitly complicates perception by attributing causal weight to “the social” (see Turner, 2013; Meloni, 2016), as reflected in Durkheim's claims about sociologists' need to avoid the messier, biological aspects of individual perception in his discussions of the *homo duplex* or the person as simultaneously straddling biological and social sources of motivation². Next, we will demonstrate how this perspective prompted work by what would later be labeled “grand theorists” such as Talcott Parsons who sought after a more interdisciplinary, holistic view of human behavior. We show how the labeling of these attempts as grand theory by C. Wright Mills was bolstered by socio-political developments in the twentieth century American context which worked to make sociological research more oriented toward social policy, leading to the view that ambitious theoretical work was not what sociologists should be doing. With this emphasis on policy and do-able, “middle-range” theories firmly in place, sociologists then once again turned to the neo-Kantian problem of how individual perceptions become impacted by “the social,” now guided by the question of why inequalities abound in countries which project “liberal” images of social life and citizenship. We show how the work of Pierre Bourdieu, a French sociologist concerned largely with how French class divisions maintain themselves, provided the perfect solution: that individuals come to automatically mistake culture for nature due to early socialization experiences and how, once formed, these experiences, conceived of as *bodily hexi* or *habitus*, stunt

¹In biological circles, proximate refers to refers to how cellular, biochemical, and physiological mechanics influence animal behavior, while distal refers to adaptive reproductive behavior which underlies much behavior in a species. These definitions do not entirely translate into the sociological register, but adequately explain how sociological analysis can be seen as existing at either the more proximate or immediate level or the more distal or antecedent level (see Wheaton, 2001).

²While the primary neo-Kantian in the history of sociological thought, Emile Durkheim, sought merely to demonstrate how categories of perception were the product not of purely innate faculties but of the residues of social experience, many sociologists following Durkheim used his ideas to begin the search for locating *all* individual perceptions within environments.

social change while promoting social stratification. We then explain how the missing link responsible for Bourdieu's rise within the discipline was a parallel development in the field of psychology: the shift from biological to social influences by many practitioners of the discipline based on both the rejection of Wilson's (1975) landmark book *Sociobiology: The New Synthesis* coupled with ideas about the nature and function of stereotypes and schemas in the 1970s and 1980s. These criticisms and ideas about schemas functioned as the death knell for interdisciplinary approaches to human behavior by providing evidence that sociologists can and more importantly *should* only study "the social," as our most intimate ways of being are derived from exposure to cultural elements in the form of media messages, books, education, and other external forces³. We then discuss how evolutionary psychologists have maintained a steady opposition to this perspective, and how sociologists could wisely turn to the research these scholars have amassed in order to better integrate the findings of sociology with those of scholars in these fields. We demonstrate what sorts of insights this could yield by examining the sociological subfields of parenting and crime, where simultaneous analysis of social and biological factors is necessary given what researchers in a wide range of disciplines have found about adolescent and criminal behavior. We then conclude by stating that extending this sort of synthetic analysis to other domains of sociological inquiry could lead to more robust theorizing of the human condition by necessitating that social scientists combine sociologists' keen attention to social context with evolutionary psychologists' attention to biological and evolutionary explanations of behavior.

SOCIOLOGY AS THE SEARCH FOR CONTEXT?

We think it is fair to say that sociologists' most common mantra is "but, what about context?" While generative insofar as it forces sociologists to always see human behavior as embedded in social contexts, the justifications for this mantra are not always as productive. This is because the heightened attention to context for which sociologists currently advocate can be traced back to an explicit position on the nature of perception advocated by the neo-Kantian philosopher-turned-pioneer-sociologist Emile Durkheim. Questioning the constitution of our most basic perceptual capacities, Durkheim took Kant's position that the objective world, or what Kant termed the *noumenal*, could never be known to state that our very mechanisms of perception could never be absolutely known. What could be known, however, was how these categories emerged out of *social* practices such as time emerging from the scheduling of daily events, and space emerging from the tent formation one inherits from elder tribesman (Durkheim, 1995). And note, he is not just saying time management and particular kinds of spatial understandings emerge from such practical activities, but *the only* kind of time and space we can know (Durkheim, 1995). As such, through

³It is important to note that while the kinds of sociological theories that share these assumptions are different from one another in many respects, we are grouping these theories together to demonstrate their shared dismissal of biological factors.

the belief that our categories of perception are contingent on historical accidents in the form of specific social practices, Durkheim serves to extend Kant's ideas about the impossibility of entirely grasping our external world by moving this skepticism to our very mental faculties.

Using the idea that the categories of perception are not innate, but instead called forth by both our environments and the material products of our own sociality, Durkheim provided the foundation for what would become the iron-clad formation of sociology as the study of "the social" rather than the personal. This emphasis on "the social" is noted in Durkheim's conception of society as a superorganism which operates according to its own explicit, objective rules such as laws and codes of conduct which can be studied relatively easily. This is most clear in Durkheim's *Rules of Sociological Method* (1982) where he advocates for the study of social facts over individuals' interpretations or understandings of these facts. Turning to law books, traditional rules, and other concrete demonstrations of aspects of our social life was to be the domain of study for sociologists as turning to individuals' own interpretations of these items made study impossible. This is because, for Durkheim, individuals refracted these items using a configuration of their biological and social selves that was impossible to disentangle. As such, rather than attempt this deconstructive work, Durkheim advocated that the social was the only domain that sociologists should study. This led ultimately to what Meloni (2016, p. 1) termed the "purification of the social," resulting in sociology's absolute separation from biological sciences.

How Theorizing Human Behavior Became Cast as "Grand Theorizing": The Search for Solutions to Social Problems

The idea that the "purified" (Meloni, 2016) social is the sole domain of study for sociologists persisted long after Durkheim's lifetime and indirectly impacted the rejection of Parsons' (1949) attempts to produce a more fundamentally *interdisciplinary* approach to social life (see Williams, 2017a). Parsons (1949) attempted to unify what he saw as separate yet fundamentally similar theories about the nature of human action. Parsons' (1949) "convergence thesis" signaled a shift away from the bounded and pure view of sociologists' domain as strictly being "the social." This thesis was based on the idea that, though distinct, Marshalls, Pareto, Durkheim, and Weber shared the view that action can best be seen as voluntaristic rather than strictly utilitarian or idealistic. This is because, despite differences in emphasis, each of these thinkers ultimately frames action as effort to achieve individually desired ends while also conforming to particular norms of action, signaling the need for sociologists to understand how norms emerge, where in any particular society they can emerge, and why they are followed.

However, Parsons' attempts toward this early form of consilience⁴ or unifying project (see Wilson, 1998) were cast as fruitless attempts at "grand theory" (Mills, 1959) by the now

⁴Parsons was only indirectly consilient in that while he acknowledged multiple layers in a way Mills, Merton, and future sociologists would not, he still only relatively superficially engaged with biology (most typically through his use of

widely regarded sociologist C. Wright Mills and used as examples of the type of work sociologists should *not* be doing. Not only did Parsons write in an obscure manner, claimed Mills (1959), but this obscurantism masked conceptually thin and politically benign statements. Echoing Merton's (1949) impassioned call for empirically testable, relatively jargon-free "middle-range" theories directed to understanding specific elements of action, rather than action in general, Mills created a rallying cry for the need to study social problems that individual men and women experience but cannot sufficiently understand:

They [individuals] do not possess the *quality of mind* essential to grasp the interplay of man and society, of biography and history, of self and world. They cannot cope with their personal troubles in such ways as to control the structural transformations that usually lie behind them (Mills, 1959, p. 4, emphasis ours).

The lack of "quality" of the layperson's mental powers thus makes clear the role of the sociologist and the need for a "sociological imagination":

The sociological imagination enables its possessor to understand the larger historical scene in terms of its meaning for the inner life and career of a variety of individuals. It enables him to take into account how individuals, in the welter of their daily experience, often *become falsely conscious* of their social positions. Within that welter, *the framework of modern society is sought*, and within that framework the psychologies of a variety of men and women are formulated. By such means the personal uneasiness of individuals is focused upon explicit troubles and the indifference of publics is transformed into involvement with public issues (Mills, 1959, p. 5).

It is the political task of the social scientist—as of any liberal educator—continually to translate personal troubles into public issues, and public issues into the terms of their human meaning for a variety of individuals. It is his task to display in his work—and, as an educator, in his life as well—this kind of sociological imagination. And it is his purpose to cultivate such habits of mind among the men and women who are publicly exposed to him. To secure these ends is to secure reason and individuality, and to make these the predominant values of a democratic society (Mills, 1959, p. 187).

Thus, the paradoxical neo-Kantian position about the impossibility of understanding perception was given a simple solution: let sociologists, masters of the social, let the public know what their *real* problems are. Doing so solidified the project of purifying "the social" (see Meloni, 2016) that Durkheim began by anchoring it to concrete social problems. It is no surprise that in the same book advocating the need for a sociological imagination Mills (1959) lambasts work which prioritizes interdisciplinary development rather than pragmatic, social assistance: "grand theory" as emblemized by Talcott Parsons' *The Social System* 1991⁵. Though peripheral within the discipline at the time,

Freud). However, Parsons' work did signal the need for a convergence of different perspectives on a unified vision of human behavior.

⁵Parsonian grand theory had an interdisciplinary openness that could have served as a model for sociologists who wanted to understand the social in the light of ideas emerging in other disciplines e.g., biology, population genetics, and later on

Mills' ideas were received well by blossoming social movement groups. Mills' influence on the *New Left* is highly noted, and interviews with student protesters at events such as the Berkeley Protests of the 1960s attest to the influence that his ideas about the "sociological imagination" and the importance of "exposing" the social nature of seemingly personal ills had on individuals in that time period. For example, a student interviewed at the 1964 Free Speech Movement (FSM) protest in the CBC documentary "The Berkeley Protest" (1965) echoed the sentiments of many other student FSM protesters by stating that "society" was responsible for ills experienced by students on campus. She furthered this idea by telling the reporter that "whatever way I turn out, I still am a product [of society]." Ultimately, she and other FSM protesters wished to take Mills' (1959) call for the academic exposure of the social nature of individually-felt problems to the streets. The "system" needed to be "shaken up," lest the socially constructed problems of today continue into tomorrow.

Others have realized that the social sciences more broadly have cut themselves off willingly from other disciplines in order to defend their activism (see Barkow et al., 1995; Lopreato and Crippen, 1999; Massey, 2002). In *Crisis in Sociology* (1999, p. xii), for example, Lopreato and Crippen argued that sociologists have become too focused on solving "social problems" defined through commitment to a series of "isms" around race, class, gender, and other factors. This thought is continued in *The Sacred Project* (2014), where Smith outlines how, through embracing a view of the individual as paradoxically full of agency and yet constantly infringed upon by social facts, sociologists have come to endorse a "sacred project" around the pillars of autonomy and morality:

American sociology as a collective enterprise is at heart committed to the visionary project of *realizing the emancipation, equality, and moral affirmation of all human beings as autonomous, self-directing, individual agents (who should be) out to live their lives as they personally desire, by constructing their own favored identities, entering and exiting relationships as they choose, and equally enjoying the gratification of experiential, material, and bodily pleasures.*

Commitment to this project leads many sociologists to reject explanations of human behavior at odds with their tacitly accepted and often publicly voiced social constructionist theoretical perspective (see Smith, 2014; e.g., Epstein, 2007, p. 16). This has isolated them from many of the advances in sciences such as psychology made over the last 40 years or so (see Lizardo, 2014).

While Smith (2014) uses these claims to advocate a critical realist position of the individual, centering on the messy nature of personhood and sociologists' all-too-easy dismissal of this complexity, we believe that returning to Meloni's (2016) claims about the early purification of the discipline and Barkow et al.'s (1995) and Lopreato and Crippen's (1999) calls for serious engagement with biological and evolutionary principles provide

sociobiology and evolutionary psychology. This was most clear in Parsons' close engagement with Freud and psychological theories of personality.

more useful tools for disciplinary recovery from sociologists' journey into a sacred cloister. This will be addressed, however, after explaining how the project spread throughout the discipline even in light of heated criticisms from sociologists from very different theoretical camps.

STRUCTURE WRIT PERSONAL: THE RELATIONSHIP BETWEEN BOURDIEU'S *HABITUS* AND DURKHEIM'S *HOMO DUPLEX*

While Durkheim may have opened the doors for sociologists' dismissal of personal aspects of perception and action, he did acknowledge that individuals are torn between pre- and post-social capacities (see Meloni, 2016). In his concept *homo duplex*, he asserted that individuals do indeed have basic biological compulsions and proclivities, though, over time, these would be subsumed by a developing social self (Durkheim, 1995). As an individual muddles her way through the world, the impulses which are evoked by her experiences will gradually cease to be relatively spontaneous, unintelligible, and visceral, and increasingly become habituated, intelligible, and socially predictable (Durkheim, 1995). Though undoubtedly *some* degree of spontaneity will always exist as individuals still remain biological beings, the primacy of "the social" will emerge through the socialization process for Durkheim.

This idea that "the social" will overtake the natural, at least in terms of primacy of evocation, was further maintained by French sociologist Pierre Bourdieu. Heeding Mills' (1959) call for a sociology committed to social problems and doing so using Merton's (1949) advice about the need for testable, middle-range theories, Bourdieu (1977, 1984, 1990, 1996) asserted that, through the process of socialization, individuals do indeed come to have their very senses of self fundamentally altered by social experience. Rather than *combat* culture *with* nature, however, as in Durkheim's image of the temporarily conflicted but fundamentally brute-becoming-civilian known as the *homo duplex*, Bourdieu (1977, 1984) asserted that individuals *mistake* culture—in the form of the kinds of social structures Durkheim advocated studying, such as laws, codes, and customs—for nature. This process is enacted by individuals perceiving the external environment as simply existing, rather than as being socially constructed through generations of lived, human, social experience (Bourdieu, 1977, 1984, 1990). This results in the formation of a *habitus* or system of transposable, metaphoric bodily structures which necessitate that the individual render similar events in similar ways, ultimately causing them to forget (or indeed, as appears to be more often the case for Bourdieu and Bourdieusians, never gain awareness of) the social aspects of their environments and, thus, to mistake culture for nature on an everyday basis (Bourdieu, 1977, p. 95).

While Bourdieu's insights about the *habitus* led a series of scholars to fruitfully study how social stratification operates through the process of socialization, and also to refine his early ideas through a synthesis of his many concepts—such as social and cultural capital, fields, and indeed the *habitus* (see

Lamont, 1992; Lareau, 2003; Leschziner and Green, 2013)—Bourdieu's work also appeared to gain popularity at the same time as social psychological research which actively sought to reduce the explanatory power of biological influences on the study of human behavior. This connection is most salient when one looks to Bourdieu's work to see where he believes any particular *habitus* is stored and/or developed within a person. While he does indeed believe that the *habitus* represents the internalization of social experience, the precise location of these internalized experiences is never explained by Bourdieu except for in vague statements about *bodily schemas*. We believe that his early use of ideas about internalized schemas has resulted in many sociologists' using the social psychological concept of "schema" to explain how, once internalized, social structures directly shape individual thought and action by providing mental representations with clear logics for action (e.g., Epstein, 2007).

By converting *homo duplex* into what could be interpreted as *homo habitus*, or a being guided by internalized experience so devoid of personal interpretation that it can independently guide behavior (see Williams, 2017a), Bourdieu—perhaps unintentionally, but effectively—maintained both Merton's (1949) call for middle-range theorizing and Mills' (1959) call for socially meaningful research. Despite offering a relatively grand theory of how objective conditions result in subjective states of being by way of internalized bodily schema, the *habitus* became a testable theory of how culture shapes individual action due to how it could, allegedly, be traced to clear and measurable forms of social stratification. Thus, although in some respects Bourdieu resurrects the grand theorizing that went out with Parsons, creating an opportunity to engage with the developments that had taken place in biology and evolutionary theory, that opportunity was missed. Instead, Bourdieu's grand theory was put to the service of addressing social problems as set by Mills.

Once again, this is not to say that the concept has not been used productively. Sociologists such as Lareau (2003) have utilized Bourdieu's insights on the *habitus* as well as social and cultural capital to explain how children do indeed become primed for stratification due to the shaping of their expectations about education and success more broadly. There are, however, scholars such as Bourgois and Schonberg (2009) who utilize the concept of the *habitus* to demonstrate how publically shared ideas become seamlessly internalized in individuals through their daily actions and come to almost entirely dominate their behaviors.

Repertoires and Reflexivity: Reactions to Bourdieusian Sociology

While many sociologists tacitly agreed with Bourdieu's (1984) claims about the naturalization of (allegedly) ultimately arbitrary, historically contingent cultural elements, sociologists from a variety of camps within the discipline came to see both his and his followers' views of action as overly socially deterministic. Despite not turning to evolutionary theories of human behavior, they move away from strict social determinism by seeing decisions as influenced by factors exogenous to this strict social dimension

(see Weinberg, 2014). This is clear in the fact that, for instance, Bourdieu's work has been called "strong socialization" theory while reactions which center on individuals' capacity for reflexive thought have been called "weak socialization" theory (Lizardo and Strand, 2010, p. 204–209). These "weak socialization" (Lizardo and Strand, 2010, p. 204–209) theories assert that individuals possess the capacity to use and reject cultural elements in ways not explainable by the strong socialization position in Bourdieusian sociology.

Swidler's (1986) hallmark article "Culture in Action" represents arguably the first attempt to breach the Bourdieusian account of action in the sociological mainstream. In this article, Swidler (1986) took issue with interpretations of culture which saw it as having direct influence on individual behavior. Tracing this perspective back to Weber's "switchman" metaphor, where cultural ideas send individuals down clear tracks or lines of action, she claimed that culture can better be thought of as a toolkit or amalgam of potentially fragmented and even contradictory ideas that individuals can use to plan their own "strategies of action" (Swidler, 1986, p. 273). This view sparked a wave of research which continued to focus on the pragmatic and opportunity-based nature of action rather than its socialized aspects (see Williams, 2017a). While not rejecting the idea that there are indeed socialized aspects of human behavior, sociologists following Swidler's lead tended to take a more implicitly pragmatist approach to social life by focusing on its practical, routine, and situated nature. Though aligned with much of what Bourdieu wrote about social life, the primary difference between him and these scholars was the influence of internalized culture on action (see Swidler, 2008; Lizardo and Strand, 2010; Williams, 2017c).

In the same time period, scholars primarily from the critical realist philosophical perspective, led by Margaret Archer and Roy Bhaskar, argued that Bourdieusian and other strong socialization accounts of human behavior stripped individuals of their pre-socialized capacity for reflexive thought and produced ultimately inconsistent accounts of action. Key in this line of work was the claim that individuals have a capacity for reflexivity, or internal conversation and self-reflection, that cannot be reduced to language or linguistic competence (see Archer, 2007; Williams, 2017a, 2018). This maxim is central to the critical realist perspective, as it emphasizes how the process of socialization does not go "all the way down"—there is a biological substrate which can never be entirely permeated by socialization and which, as such, should be taken seriously in any analysis (Archer and Donati, 2015). This substrate, akin to the biological side of Durkheim's (1982, p. 37) *homo duplex*, serves as a constant force of resistance while also being the vehicle through which social experiences are interpreted by the individual. Without this aspect of the self, argue critical realists such as Archer and Donati (2015, p. 70), human behavior would be entirely externally determined. As such, Archer and Donati (2015, p. 70) term research which does not explicitly theorize this kind of individual capacity as "social hydraulic" due to its absolute emphasis on the social world and socialization over the individual.

CULTURE TURNED COGNITIVE, BUT NOT BIOLOGICAL: SOCIAL PSYCHOLOGISTS' REJECTION OF BIOLOGICAL EXPLANATIONS AS LEADING TO THE FLOURISHING OF "SCHEMAS"

While many sociologists indeed question Bourdieu's emphasis on the naturalization of culture by pointing out messier moments of action (see Archer, 2007), the search for simple answers to this issue never fully receded. Propelled by Mills' (1959) call for socially meaningful research, paired with institutional pressures on practitioners of the discipline to justify the relevance of their work (Smith, 2014), many sociologists continued to do work which both implicitly and explicitly positioned members of the discipline as philosopher kings capable of exposing the social nature of personally experienced problems. Key in this maintenance, as will now be demonstrated, was a similar political, social, and moral (see Smith, 2014) end by a group of unlikely bedfellows: social constructionist-leaning psychologists. Debating the role of biological factors in their own broader field of psychology, theories developed by these individuals were mobilized by sociologists to add a *cognitive* and, thereby, "biological" explanation to human behavior. The reason these theories resonated with sociologists, however, was because they endorsed the same position implicitly supported by mainstream sociologists and explicitly supported by their neo-Kantian forefathers: that the human mind is a blank slate which develops cognitive structures when assaulted by brute, personally unmediated socialization (see Campbell, 2013; Williams, 2017a).

The Discursive Meets the Biological

Mills' ideas about the need for sociologists to study social problems, as well as the sociologist's key role in imagining solutions to these problems, were echoed by the French post-modern movement in academe in the 1960s and 1970s. Led primarily by Foucault with his claims about the pervasive nature of power and domination in human relations, personal problems became framed as fundamentally social because of their *discursive*, linguistic, and institutional nature (Hall, 2001). Sociologists and other academics—particularly in the humanities—became increasingly interested in studying forms of domination, oppression, and social stratification (see Lopreato and Crippen, 1999) as these issues came to be seen as residing in unequal institutional arrangements grounded in discourses which legitimated various forms of inequality and stratification. While Foucault demonstrated pessimism about the extent to which these discourses could be changed, many sociologists took these issues on directly as the ends of their research aims. This interest was highly visible in the 1970s when, in the wake of the sexual revolution in the context of the United States of America, there was a massive growth in research done on gender inequality. Myriad studies were conducted and published exposing inequalities of outcomes between men and women, posing a variety of social explanations for these differences. From broad-bush critiques of "the patriarchy," to more fine-grained analyses of specific social processes which promoted

the stratification and unequal social sorting of men in women in various socio-historical contexts, sociologists produced an array of research demonstrating the social construction of gender inequalities. Seeing gender as a social construction enabled sociologists to imagine how gender inequality could be mitigated simply by removing arbitrarily created social barriers such as gender “super schemas” (see Epstein, 2007, p. 16).

This research was, however, implicitly challenged by work in the hard sciences which drew parallels between sex differences in non-human species with those of humans. The prime focus of Wilson’s (1975) *Sociobiology* was the social behavior of non-human animals, but the book concluded with a chapter extending his theory to show how the same evolutionary processes impacted human behavior. He argued that human behavior can fruitfully be understood as being shaped by a long evolutionary history (which is not surprising given that all known life on earth shares a universal common ancestor, and is made up of the same genetic material), and that parallels with non-human animals of other species should not be dismissed.

Wilson’s call for integrating knowledge about the evolved histories of other non-human animals with those of the human species, however, was met with great disdain by both academics and students. Subsequently, the term “sociobiology” has been used pejoratively in many Women’s Studies courses to represent work which deliberately attempts to reduce sex differences *entirely* to biological factors, a determinism which evolutionary theory—where environment is the sole locus of selection, and where the same genes in fact express themselves differently in different environments—resists by definition (see Wilson, 1998; Campbell, 2013).

The *Sociobiology* controversy had enduring effects (see Huber, 2007, p. 16) and continues to drive debates in gender studies. The following quotes from the article “It’s Sociobiology, Hon!” in the academic journal *Feminist Media Studies* serve as exemplars:

Sociobiology responds to gender inequalities by offering a seemingly rational scientific model asserting that existing gender norms and differences are natural and inevitable (Hasinoff, 2009, p. 267)

As an avid waiting-room reader of *Cosmopolitan* and a former subscriber, I became intrigued by the magazine’s many sociobiological statements that contradicted feminist theories of gender as a socially constructed performance. *How is it possible that after decades of feminist critique, sociobiology remains a thriving academic discipline and manages to drift into the common sense knowledge of a leading women’s magazine?* *Cosmopolitan’s* appeals to sociobiology illustrate the translation of modern theoretical science into practical techniques for everyday life. Tracking this process offers a rhetorical case study of the migration of scientific concepts into popular media and reveals the strategies by which a widely read women’s magazine *evades the achievements and ambitions of feminism, invoking a conservative nostalgia for a mythical era of gender role fixity.* (Hasinoff, 2009, p. 268).

Sociobiology provides a scientific rationalization for gender, race, and class stratification by constructing a fixed human nature that transcends environment and context. Sociobiology also naturalizes capitalism, positing that human nature is a direct

product of “selfish genes” striving to maximize their reproductive profit, and the most natural economic system should reflect this model. Wilson’s fears that a “planned society,” which is presumably the authoritarian socialist opposite of free market capitalism, would be so unnatural that it would “rob man of his humanity” (1975, p. 575). According to the logic of sociobiology, since competitive genes determine every behavior, we can only be naturally human in a competitive economic system. (Hasinoff, 2009, p. 271)

Here, sociobiology is falsely seen as fully endorsing genetic determinism (as mentioned above, genes are a product of, and work within, their environment) and therefore as working against the products and achievements of feminism. Troublingly, to Hasinoff (2009, p. 268), this theoretical perspective has been mobilized by popular magazines who desire to invoke and promote rigid views of “gender role fixity.”

Though often charged with being biologically deterministic, and hostile to claims about the *sui generis* nature of society and its impact on individuals’ thoughts and actions (see Barkow et al., 1995), sociobiology’s prime focus, however, is the reconciliation of natural selection with the emergence of sociality, e.g., how it is possible for individual organisms whose primary concern is individual survival/reproductive fitness to engage in social behavior (for instance, allegiance to kin, altruism to those beyond kin). In fact, E. O. Wilson controversially endorses group selection (Nowak et al., 2010). Contra standard evolutionary theory where selection takes place at the level of the gene (e.g., Dawkins, 1976) or at the individual phenotype (e.g., Mayr, 2001), Wilson believes it can take place at a group unit beyond kin. Examples include cooperative hunting and cooperative predatory warnings (such as those used by birds: a bird will make a noise that a predator is amidst and in doing so will put itself at greater risk of being identified). To some extent, sociobiology is in fact the study of how it is possible for biological organisms to escape biological determinism. This is the reason why sociologists like Lopreato and Crippen (1999) believe that sociobiology needs to function as sociology’s unifying principle. And if sociology were to take on sociobiology as its unifying principle, it would in no way diminish the importance of the social and cultural, but rather put them into the wider context from which they emerged.

At the time of *Sociobiology’s* release, many researchers in the field of psychology became vocal about their rejection of any comparisons of humans with non-humans to make claims about sex/gender differences for reasons similar to those presented in the article quoted above (see Huber, 2007). For those with more nuanced rather than zero-sum positions, however, the claim tended to be that human behavior must be seen as shaped *primarily* by social facts or social sources rather than primarily by biological sources. This is because Wilson’s (1975, p. 551) drawing of parallels between humans and non-humans came to be seen as, ironically, doing the same sort of sex essentializing work that other scientists *he* criticized had done before him (e.g., Robin Fox, Lionel Tiger, and Konrad Lorenz who each saw male dominance as inevitable; Huber, 2007). The hallmark of this shift, we argue, was a series of a developments about the nature and function of *stereotyping* in the broader discipline of psychology.

Schemas and Being as Nothingness

While Kant argued that individuals perceive the world through the filter of innate categories of understanding, Durkheim sought to prove that such categories are actually the products of social life. Through everyday experience in tribes and other social formations, claimed Durkheim, individuals implicitly learn to lump and chunk their experiences. Though never connected to Durkheimian understandings of perception, in this section we will demonstrate how contemporary research on schemas follows Durkheim's explicitly "social factist" (Ritzer, 1975 p. 158) or structural functionalist but implicitly social constructionist principles quite closely due to its rejection of biological claims about perception.

Stereotype research bloomed in the 1980s under work on gender schema theory by psychologist Bem (1981). Bem (1981) developed sophisticated techniques to study how, once internalized, widespread "gender scripts" became self-reinforcing within individuals' cognitive make-ups. Rather than start from the assumption that sex differences were at least in part due to differences in males' and females' evolutionary history and genetic differences (see Hopcroft, 2016a), she argued that males and females came to think and act differently from one another as they internalized and strengthened schematic information about what it means to be men and women in specific societies (see Bem, 1981; Campbell, 2013).

This emphasis on how socialization leads to the development of self-reinforcing mental representations has been utilized by sociologists in many domains (e.g., Epstein, 2007; Simi et al., 2017). Moreover, it has influenced a re-conceptualization of culture from merely being a repertoire or toolkit of ideas (as in Swidler, 1986, description) to actually being composed of "schemata":

Psychological research on schemata is central to the interests of sociologists both methodologically (due to advances in techniques that reveal taken-for-granted assumptions to which subjects may not have easy verbal access) and substantively, for what it tells us about how culture works. Indeed, for some purposes, it may be useful to treat schemata as a basic unit of analysis for the study of culture, and to focus on social patterns of schema acquisition, diffusion, and modification...schemata are both representations of knowledge and information-processing mechanisms...in schematic cognition we find the mechanisms by which culture shapes and biases thought" (DiMaggio, 1997, p. 269).

Here, schemata are seen as a "basic unit of analysis" due to how, once internalized, they lead individuals to see through their logics. Due to their origins in what were hitherto the standard definition of culture—ideas, media messages, norms, mores, and other dominant practices—schemata serve as the "mechanisms" by which culture shapes human behavior (DiMaggio, 1997, p. 269). Key here is that they *automatically* do this. DiMaggio (1997, p. 269) emphasizes that individuals tend to rely on an automatic, implicit form of cognition which "relies heavily and uncritically upon culturally available schemata—knowledge structures that represent objects or events and provide default assumptions about their characteristics, relationships, and

entailments under conditions of incomplete information." As such, though individuals possess the capacity to challenge the world as defined by particular schemas, they rarely do so (see Vaisey, 2009).

This is repeated in then president of the American Sociological Association Cynthia Fuchs Epstein's (2007, p. 16) statement that gender inequality can be seen as the product of "internalized cultural schemas [which] reinforce men's views that their behavior is legitimate and persuade women that their lot is just." In a call to arms about the importance of curbing global gender inequality, Epstein (2007, p. 1) emphasizes how this phenomenon persists due to "the boundary based on sex" being at the core of all forms of social stratification. She uses Eviatar Zerubavel's term "mindscapes" to demonstrate how cultural schemata about differences between men, though allegedly "pseudo-scientific," prevent individuals from engaging in meaningful social change due to how widespread and diffuse they are:

The mindscapes that legitimate women's segregation are the cognitive translations of ideologies that range the spectrum from radical fundamentalism to difference feminism; all are grounded in cultural-religious or pseudoscientific views that women have different emotions, brains, aptitudes, ways of thinking, conversing, and imagining. Such mindsets are legitimated every day in conventional understandings expressed from the media, pulpits, boardrooms, and in departments of universities. Psychologists call them schemas (Brewer and Nakamura, 1984) —culturally set definitions that people internalize. Gender operates as a cultural 'super-schema'...that shapes interaction and cues stereotypes...Schemas that define femaleness and maleness are basic to all societies. Schemas also define insiders and outsiders and provide definitions of justice and equality" (Epstein, 2007, p. 16).

Thus, gender inequality can be reduced entirely to the development and continued diffusion of schemata which define men and women differently. Sociologists' role, then, is noted by Epstein (2007, p. 17–18) herself:

Sociologists historically have been committed to social change to achieve greater equality...I challenge our profession to take this responsibility in our scholarship and our professional lives; to observe, to reveal, and to strike down the conceptual and cultural walls that justify inequality on the basis of sex in all of society's institutions—to transgress this ever-present boundary—for the sake of knowledge and justice.

Using the idea that culturally available schemas bias cognition in favor of these allegedly arbitrarily defined ways of perceiving, Bem's (1981) and other psychologists who utilized the concept of schemata in the 1980s' (e.g., Brewer and Nakamura, 1984) influence can be quite discernable. Schemas provide the mechanism (DiMaggio, 1997) by which culture is translated into the brain and, through a self-reinforcing process, shapes human behavior in myriad ways. As such, Mills' (1959) call for revealing and solving social problems can be done by turning to the socialized brain. Distal explanations of sexual differences are dismissed and labeled as "sociobiological," causing sociological

views of sex and gender to become incommensurable with those of evolutionary biologists and psychologists (see Hopcroft, 2016a).

This use of schemas and view of gender, however, ignores a longstanding theory, dating back to Darwin, of sexual selection among both human and non-human animals. The competition between members of one sex for selection by (i.e., access to) the other sex (sexual selection) explains the sexual dimorphism evident in most animals, including humans (Campbell, 2013). For example, in *A Mind of Her Own* (2013) Campbell argues that differences in behavior between men and women cannot be reduced to different socialization processes that individual males and females experience in their lives. Rather, men and women, much like males and females of other species, have developed different but not entirely distinct minds through long processes of evolution. In this sense, though rejecting the primacy of socialization in shaping individual person's cognitive capacities and personality differences, echoing others of the evolutionary psychology perspective (see Barkow et al., 1995; Pinker, 2002), she sees long evolutionary history as shaping these factors. Campbell (2013) claims that seeing sex differences as stemming from long, evolutionary history more so than strictly from differences in individual male and female's lived experiences in social milieus is important as many psychologists have come to implicitly deny the impact of evolution on sex differences.

The impact that biology has on psychology can further be seen clearly in one core difference between sexes: gamete size. The female ovum is larger and much more scarce (i.e., more valuable) than the male sperm (Trivers, 1972; Campbell, 2013). Evolutionary psychology predicts that this difference will shape male and female behavior. (Trivers, 1971; Wilson, 1975; Pinker, 2002; Campbell, 2013; Machalek and Martin, 2014). Because the ovum is more valuable, females will have a greater investment in their offspring, and will be more selective of their mates. Because sperm is less valuable, males will have less invested in their offspring, be less fussy in mate selection, and will compete for reproductive access to females. This is the biological basis of the sexual dimorphism evident across nature (from the mane of the male lion to the broad shoulders and deeper voice of the human male). This makes claims that gender has a limited biological basis difficult to endorse (see Hopcroft, 2016a, p. x).

To ensure we are not being misinterpreted, the incommensurability that we are highlighting between socially deterministic conceptualizations of gendered schemas and evolutionary biological and psychological views of sex and gender is *not* intended to signal that the sociological findings of gender inequality, sexual stratification are incommensurable with evolutionary sociological understandings of these issues. Nor are we attempting to justify biological determinism or employ the naturalistic fallacy to state that evolved differences have any inherent or desired value (Wilson et al., 2003). Rather, this paper is attempting to bring more congruence between distal and proximate explanations by taking seriously the role of various evolved capacities that serve as distal influences on proximate forms of behavior (see Hopcroft, 2016a). In other words, by demonstrating how research utilizing the concept of schema tended to minimize evolved capacities, we hope to signal

the need for integrating sociological work on gender with the work of evolutionary psychologists in ways which do not lead to fundamentally incompatible views of the topic.

THE CASE FOR EVOLUTIONARY PSYCHOLOGY: SHIFTING FROM THEORETICAL PLURALISM TO CONSILIENCE

Evolutionary psychology, unlike sociology, has a strong consensus over its theories (see Barkow et al., 1995; Buller, 2005; Bolhuis et al., 2011; Laland and Brown, 2011; Winegard et al., 2017). Such consensus enables the generation of research which addresses different empirical problems to share analytical concepts, and avoid the kind of debates highlighted throughout the paper regarding, for example, notions of *habitus* vs. ideas about reflexivity.

This is precisely what Parsons (1949) saw as the benefit of foregrounding the core similarity between seemingly different theoretical traditions—in the case of his work in *The Structure of Social Action* (1949), the core of a voluntaristic theory of action found in the work of Marshalls, Pareto, Durkheim, and Weber. Rather than attack such attempts as being “grand,” calling for endless studies to add “nuance” to developing theories (see Healy, 2017, p. 118), following the lead of evolutionary psychology would mean spending more time focusing on what sociologists' baseline assumptions about human behavior should be and less time developing alternative explanations from the ground-up (see Barkow et al., 1995). This would ultimately mean *narrowing* the repertoire of theories used in sociology rather than expanding it in the kind of “let one hundred thousand flowers bloom” (Kowalski and Lamont, 2015) perspective held by many sociologists which asserts that even theories which fundamentally disagree on basic assumptions about human behavior can be used by sociologists according to the kinds of research questions being asked. This narrowing, however, would lead to the expansion of the *scope* of sociological research as sociologists would be able to both contribute to and utilize the findings of scholars in other fields interested in studying human behavior which share the same baseline assumptions about its simultaneously biological and social nature (see Rebellon et al., 2014).

For example, one route this could take would be to examine how, rather than think of personality and behavioral developments as purely due to socialization, the human brain has evolved to become *prepared* to internalize and use specific information in particular ways (Garcia and Koelling, 1966; Seligman, 1971, 1993; Seligman and Hager, 1972). One example which makes this particularly salient is our innate aversion to snakes. The human brain has become automatically primed to associate snakes with fear, due to snakes' predation on mammals in our evolutionary history. Though, of course, specific individuals can come to overcome or not even perceive this fear, the human species as a whole has tended to evolve this mental preparation to increase our survival rate by avoiding this form of danger (see Souchet and Aubret, 2016). Starting with the idea of the prepared mind rather than the blank mind would

enable sociologists to study how and why specific behavioral patterns shift as they do across societies while still maintaining key similarities.

Gaining Insight on Contemporary Sociological Problems: Applying Evolutionary Psychology

Following the lead of Lizardo's (2017) application of what he termed *declarative* and *nondeclarative* kinds of cultural information to existing studies of social stratification to demonstrate how re-tooling sociologists' ways of seeing culture could shed new insights onto this area of research, we will now demonstrate why including cognizance of the long history of human evolution when thinking about the short history of any given social problem or context can lead to the generation of new insights on the topic in question. Due to their shared focus on childhood, adolescence, and the role of socialization in shaping behavior, we will focus on sociological studies of parenting and crime and deviance. Applying an evolutionary perspective reveals how sociologists can extend their theories on these topics by including biological aspects of human behavior more consistently in their analyses.

Parenting in Sociology

Many sociological subdisciplines frequently publish research on parenting. Sociology of the family, gender, mental health, culture, race and ethnicity, and stratification broadly defined are areas in which parenting practices are questioned, empirically investigated, and theorized.

Studies have attempted to demonstrate how mothers' and fathers' time with children impacts the latter's development on a variety of outcomes such as skill acquisition (Larson and Richards, 1994), achievement motivation (Eccles, 1992), and more general aspects of behavior (McLeod and Nonnemaker, 2000). While studies have tended to emphasize the impact that mothering has on these outcomes (Milkie et al., 2015), studies have also demonstrated that fathering also impacts these outcomes independent of mothering effects (e.g., Kandel, 1990; Barnes and Farrell, 1992).

Evolutionary psychologists, however, have directly challenged claims about the impact parenting has on children. Rather than assume that parenting squarely has independent effects of its own, scholars such as Harris (1998) have demonstrated how parenting actually has very little immediate effect on children's behavior and, perhaps more surprisingly, *no* long-term impact on children's behaviors as adults. This was found using twin studies which demonstrated that adult personalities were shaped very little by upbringing style, and, more shockingly, twins who had been separated at birth and raised in very different familial and societal contexts had more behavioral similarities than did adopted siblings raised together (Harris, 1998; Pinker, 2002).

However, having taken "the social" as their point of departure, sociologists who have studied parenting have no means of making sense of the findings of twin studies. These findings do not entirely negate those of the studies mentioned above, but they do signal that sociologists should pay more attention to how children develop outside of their parents' control. For example, Milkie et al. (2015) indeed found that mothering has no effect

on a variety of outcomes for children. They did find, however, that mothering matters for adolescents' risk-taking behaviors (Milkie et al., 2015). While they claim that this effect was due to mothering itself, the impact of mothering may have been due to the kinds of peers teenagers who spent a lot of time with their mothers were associating with. Due to spending so much time with their mothers, they may have sought out other teenagers who also had close connections with their mothers (see Harris, 1998). Thus, mothering may have had a more indirect or mediated effect on teenagers' behavior than is stated in the following:

Teens' time spent in activities with their mothers may be important to avoiding risk-taking behaviors such as delinquency in several ways: through blocking opportunities, encouraging more prosocial thinking and actions during their time together, *or as a signal to adolescents that mothers find them worthy of sustained attention.* Perhaps time with mothers increases adolescents' sense that they matter (Rosenberg and McCullough, 1981), and youth are less willing to take risks that they realize may not only hurt themselves but also fray their bond with their parents." (Milkie et al., 2015, p. 368, italics added).

Here, teenagers are framed as making friendship choices based on the valuations of their mothers. This goes directly against evidence found by Harris (1998) that teenagers and children alike value peer estimations much more greatly than they value those of their parents. Again, though there may be truth to the idea that teenagers do not want to tarnish their relationships with their mothers, without engaging with the idea that teenagers bring their own relational styles and goals to the parent-child relationship—which may be that peer relationships matter more to them based on these individuals seeing peer groups such as the workplace and other environments as where their futures will be, and not the family home—sociologists are forced to rely on a rational actor model of teenagers as simply not wanting to disappoint their parents. Offloading some of this decision-making to evolved preferences for peer-evaluations may help explain the divergence between children and teenagers while also unburdening these individuals from making such complex decisions in relative isolation.

Crime and Deviance

The emphasis on the multiplicity of sources of child and adolescent behavior, rather than the relatively mono-causal view of parent-child influence present in much sociological work on parenting, extends into recent efforts in criminology to complicate the criminal decision-making process. Key in this effort is Rebellon et al. (2014) expansion of Agnew's general theory of crime into what they call *biosocial criminology*. Incorporating biological factors into Agnew's theory enables closer understanding of the choice to engage in criminal behavior. This is important as, like sociology, criminology has many middle-range theories which are seemingly at odds with one another in explaining crime and deviance. Agnew's original general theory was an attempt to remedy this issue, and as such its extension into biosocial determinants will now be discussed to further demonstrate the utility of a biology-sociology synthesis.

As is the case for parenting, sociology and its sister discipline, criminology, have an array of theories which are utilized to explain why it is that individuals deviate from social norms and engage in criminal behavior. Ranging from Mertonian strain theories which emphasize how the inability to legitimately achieve normatively desired ends to conflict theories which frame crime and deviance as the deliberate attempt to shake up the status quo, these theories tend to converge around their shared claims about the deeply structured nature of individual decisions to engage in deviant behavior.

However, one line of thought in sociological criminology which departs from this more structural tradition is the body of theories prompted by Travis Hirschi and extended by Robert Agnew: *control theory*. Rather than begin with Parsonian assumption of normative consensus across individuals, control theory begins with the assumption that deviation from norms—or anti-normative action—should be the default. This is because, according to founder Hirschi (1969), individuals need to become socialized in order to offset their more brute urges to engage in immediately gratifying behavior.

While never done explicitly by Hirschi, these ideas about the tenuous connection between norms and individuals implied in his work were taken to a biological level by Agnew's (2005) *general theory of crime*. In this perspective, Hirschi's Freudian insight that norms may be viewed with distrust—and even disdain—gains biological footing. Specifically, it can be extended by research on individual cognitive and personality traits such as impulsivity, an aspect of behavior that was implicit in Hirschi's (1969) claims about lack of self-control leading to criminal and deviant behavior.

Agnew's (2005) general theory also extends Merton's insights about the perception of strain as influencing criminal and deviant behavior. While Merton's (1938) ideas have been critiqued for its assumptions about “consensus”—namely, that strain theory's reliance on the idea that individuals from all walks of life similarly buy into mainstream society's normative and value system blinds the theory to sub- and counter-cultural influences on crime and deviance—the *general theory* can extend the basic insight about the relationship between perceived strain and crime and deviance in ways similar to how it extends control theory: by linking these perceptions to traits and proclivities which are unequally shared by individuals throughout any given society.

The original general theory of crime holds that the choice to engage in crime and deviance is shaped by five intersecting and mutually reinforcing life-domains: the self; the family; the school; the peer network; and the work environment (Rebellon et al., 2014). In Agnew's original formulation, while some attention was given to biological factors primarily in discussion of the self and personality influences on crime, the extent to which any of the five life-domains motivate or constrain the decision to engage in crime was only scantily addressed. Rebellon et al. (2014) claim that integrating biological research on traits such as impulsivity would strengthen the general theory's insights about how the five life-domains work to compound the odds of engaging in crime. For example, while Agnew (2005, p. 125) originally claimed that life-domains have lagged effects on themselves as individuals develop habits toward crime and deviance and, in doing so, strengthen the

initial impact of any given life-domain on their own criminality, Rebellon et al. (2014) claim that biological factors can and often do underlie these observed lagged effects.

For example, a person with low self-control may come to perform activities which further reduce his or her self-control. This would mean that a person not only comes to develop a habit for engaging in activities that might lead them to associate with criminogenic peers, but that, in doing so, may develop lower self-control than they initially had and thus further increase their likelihood to engage in crime. Moreover, they may do so by engaging in risky behaviors such as playing sports—an activity linked to sensation-seeking—without wearing protective gear. In doing so, they are at greater risk of damaging their frontal lobes and, thus, of losing executive function which is necessary to control one's behavior (Raine et al., 2005; Ogilvie et al., 2011).

Rebellon et al.'s (2014) biosocial extension of Agnew's general theory of crime thus serves as an example of a synthesis between biology and sociology in the field of crime and deviance. Similarly, Daly and Wilson's (2001) work on homicide shares Rebellon et al.'s (2014) emphasis on the necessity of locating criminal and deviant behavior within the context of biological influences. For example, Daly and Wilson (2001) found that much of the difference in crime rates between men and women could be explained by selected for differences in risk-taking between sexes. Paralleling work on sex differences later conducted by Campbell (2013), these scholars found that young males are the most likely demographic to engage in risky, violent behavior such as homicide as they engage in intra-sexual competition. The reason for this is because young males can increase their status and material wealth and, in turn, become more attractive to females by taking more risks. These considerations are amplified in terms of their outcome on increasing homicide rates in times and places of high levels of social inequity, as these conditions may lead to individuals discounting the future at higher rates than in more socially equitable conditions (Daly and Wilson, 2001).

Together, Rebellon et al.'s (2014) biosocial theory of crime and deviance and Daly and Wilson's (2001) synthesis of evolutionary and criminological accounts of crime provide a strong foundation for incorporating biological insights into more mainstream sociological studies and further serve as templates for doing so. Neither scholar seeks to entirely supplant criminological or sociological analyses with biological ones. Nor do they call for any sort of determinism. Instead, they call for research which captures the multi-causal nature of crime by incorporating its causes at both the biological and social levels and proximate and distal levels. Their work extends classic theories which otherwise have appeared to be sealed off from developments in biology despite their natural affinities with this field.

DISCUSSION AND CONCLUSION

As has been demonstrated by our historical sketch and application of biological and evolutionary psychological theories to multiple fields of sociological inquiry, many sociologists

appear to have come full circle to the problems confronted by their neo-Kantian forebears. Rather than address issues of human behavior by utilizing knowledge gained by evolutionary psychologists and biologists about how *long* histories of social life have shaped our individual make-ups, sociologists have tended to focus on the relatively *short* histories of social events (see Lopreato and Crippen, 1999). While pointed out numerous times by historical sociologists (e.g., Skocpol, 1984; Hall and Bryant, 2005), in this paper we have highlighted how the long evolutionary history of the human species can inform even these kinds of analyses by forcing sociologists to engage with evolutionary reasons for how and why the mechanisms which enable our sociality emerged as they did.

The reason for this dismissal of long evolutionary history, as we have advocated throughout, is at least in part due to a series of events which occurred in twentieth century academe which led to a blank slate view of the mind (see Pinker, 2002). A combination of intra- and extra-disciplinary pressures—in the form of Mills' (1959) call for socially meaningful research in the former and funding pressures in the latter—resulted in Durkheim's call for rigid disciplinary boundaries being firmly ensconced in the discipline decades after his death. These boundaries have led to the production of theoretically inconsistent and openly anti-scientific research by many in the field (see Lizardo, 2014).

The solution to these self-made dilemmas lies in a weakening of the some of the early assumptions about the nature of what it means to think sociologically or to do sociology. Durkheim did not have the knowledge of evolutionary psychology at his disposal when forming his theories. Just as Kant was free to speculate about the nature of how the external world is perceived or even constituted by miraculously living, sentient beings, Durkheim was free—and indeed became institutionally motivated—to speculate further about how this process was impacted by environmental conditions. Sociologists' commitment to explicitly anti-mentalist (see D'Andrade, 1995; Lizardo, 2014), anti-evolutionary (e.g., Eckberg, 1977), and anti-“grand” theoretical synthetic projects (e.g., Mills, 1959) stems from a similar place. Faced with difficult questions, they turn to firmly established institutional logics about the nature of the field (see DiMaggio and Powell, 1983).

A recent piece published in the highly lauded *American Sociological Review* attests to this decision-making practice. In the article “Addicted to Hate” (Simi et al., 2017), the authors purport to examine how ex-white supremacists have difficulty “exiting” their former roles as white supremacists. To delineate the thought processes these individuals go through which continue to keep them stuck to certain aspects of this prior identification, they combine Merleau-Ponty's (1982) and Bourdieu's (1984) ideas about the development of bodily schemas with ideas inspired by proponents of the dual-process model about the “hot” and automatic nature of strong, schematically consistent and robust emotions such as hatred. In short, through this bricolage of theories they argue that their interviewees largely became “addicted to hate,” and that future research could use a variety of methods to further delineate how social experiences—in the form of identity

formation—leave residuals that are hard to shake off (Simi et al., 2017).

While the authors do a thorough job of explaining the process of identity formation and seemingly unwanted identity retention, any discussion of biological factors is relegated to being either an effect of or mediating factor for this ultimately *social* process. That is, physiological responses, though “involuntary” (Simi et al., 2017, p. 2), are seen as emerging *out of* the social process of identity formation and as such working to promote the maintenance of that identity much the way a socially formed *habitus* or *schema* might. While it may be true that physiological responses do arise from this social process, beginning the analysis with “the social” as the point of departure speaks to the issues we have been raising throughout: primacy is placed on the social rather than the biological in contemporary sociology, ultimately bounding our analyses within the realm of the social rather than expanding on how and why people may actually *desire* to construct the kinds of identities mentioned in the article (see Lopreato and Crippen, 1999).

Placing “the social” first also makes use of the dual-process model rather ironic. As noted by Campbell (2013), the idea that individuals largely operate according to unconscious drives and schematic perceptions while, indeed, possessing the costly capacity to consciously override these perceptions, is an *evolutionary* argument. Through long periods of life on planet earth, *homo sapiens* as a species developed a mind which is capable of complex, articulated deliberation, but which is primed for relatively simple, unconscious and automatic thought through the use of schematized information (Campbell, 2013). Thinking automatically or “fast” (Kahneman, 2011) became a necessity for early humans that were overwhelmed by an array of stimuli (see Wilson, 1998). The capacity to think slowly about our environments does empower us in many ways to leave nature behind, but it does not imply that we have transcended our biology. Thus, claims in the paper about how to transcend addiction-like identity formation are rather puzzling given the complete lack of attention to how and why this kind of outcome is even possible for humans to achieve.

By using the dual-process model to support claims about how the process of socialization provides individuals with sticky, “hot,” or other residuals which make particular identities hard to disassociate from Simi et al. (2017), the puzzling and selective use of psychological and biological research mentioned throughout the paper becomes clear: findings and theories from these disciplines which support the social constructionist thesis of the primacy of “the social” and socialization processes are disproportionately utilized by sociologists to further their own ends. Again, this is not to challenge the findings of particular articles, such as that of Simi et al. (2017). Instead, it is to call attention to what Lizardo (2014) similarly framed as the need to shift out of the “Comtean schema” of sociology as strictly a study of the social to a more interdisciplinary version of the discipline. Whether these ends are products of sociologists embarking on a “sacred project” (Smith, 2014), or the more benign results of operating according to institutional logics which make extra-disciplinary findings difficult to interpret using existing sociological theories (see DiMaggio and Powell, 1983;

Leschziner, 2015), the results are the same: to reify the boundaries carefully crafted by Durkheim, reinforced by Merton and Mills, and tightened by Bourdieu.

How do we proceed, given this unfortunate series of events? We do not believe that sociologists actually have a “sociology *habitus*” that they are tacitly, unconsciously, and strongly guided by. Nor do we believe that our current institutional logics are impenetrable. Simply opening up our theories to evolutionary explanations of human behavior without interpreting these explanations as encroaching on “our” turf—like Durkheim would likely do—is all we believe is needed to move sociology into interdisciplinary, critical and integrative scientific analysis. Doing so would help us expand the scope of our existing theories by more squarely acknowledging the role of biological factors

as not only proximate causes of human behavior triggered by more distal social causes (see Wheaton, 2001), but as importantly distal and capable of shaping such social causes as well when viewed from an evolutionary perspective. Acknowledging the complexity of biological factors in this regard would enable us to begin our research *either* from “the social” or from the biological depending on the question at hand and depending on what findings researchers in multiple fields have already amassed.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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