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Samuel Arthur Malkemus¹

Abstract

Is instinct a viable concept for contemporary psychology? At the turn of the 20th century the concept of human instinct was the focus of extensive discussion. Today instinct has been all but forgotten. This article explores the historical circumstances that led to the rejection of the concept of human instinct. It then turns a critical eye to a number of presuppositions that continue to equate instinct with preprogrammed genetic mechanisms. An expanded and holistic understanding of instinctual life that includes the subjective reality of the organism is then explored. It is suggested that such an expanded account may be a valuable and necessary theoretical tool for broadening our understanding of human psychology as intimately connected to its evolutionary past.

Keywords

instinct, instinctual theory, evolutionary psychology

The history of instinctual theory is a convoluted one. The concept of instinct first emerged in Aquinas' (1225-1274) theological distinction between humans and animals. Animals had instincts and humans, being rational beings with souls, did not. Yet in 1859 Darwin radically challenged this theistic notion by presenting the evolutionary origins of the human species. The

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influence of Darwin, coupled with the rise of psychoanalysis, brought the concept of instinct to the fore of the cultural zeitgeist. Yet, while instinct was widely discussed at the turn of the 20th century, the popularity of behaviorism in the 1930s quickly overshadowed interest in instinct as scholars weighed the influences of conditioning more heavily than innate factors. It was not until the popularization of ethology in the 1950s that instinct was seriously reconsidered, as Lorenz (1937/1957, 1965) and Tinbergen (1951) demonstrated the power of instinctual imprinting. The first formal presentation of the genetic code in 1953 also added to a passionate interest in innate factors that was later enhanced by Wilson's (1975) articulation of the new field of sociobiology. From ethology and evolutionary biology, both precursors to sociobiology, culture began to be examined in terms of innate biological predispositions. This step led to the emergence of evolutionary psychology as a field, which, in addition to investigating the biological underpinnings of cultural forms, began to focus on the evolutionary origins of individual psychological differences (Buss, 1995, 2004; Cosmides & Tooby, 2001; Workman & Reader, 2004).

Today, the concept of instinct continues to be heavily guided by Lorenz and Tinbergen's original ethological investigations. Through their formulation, instinct is understood as an innate, genetically predetermined, and neurologically causal pattern of behavior. It is an innate and fixed response to an environmental stimulus, formally termed a *fixed action pattern* (Alcock, 2013). Examples of this ethological account include geese's egg rolling, avian mating dances, digger wasps' inspection of their nests, newly hatched sea turtles' swim toward the sea, honeybees' communicatory waggle dance, and so forth. This understanding of instinct has provided many insights regarding innate species-specific patterns of behavior, yet it also contains a number of crucial flaws. For one, it constrains instinct to an observed feature of species-specific behavior. In this constriction, the question of the dynamics of instinct for species of greater complexity is readily overlooked. This has, for example, led La Fave (1979) to conclude that human instinct, when viewed through the narrow lens of ethology, does not exist. For another, this narrow understanding of instinct is founded on a rigid genetic and biological determinism. Instincts are "preprogrammed" responses triggered by genetically determined neurological structures. And while contemporary ethology has come a long way from this early understanding, the reduction of instinct to species-specific mechanisms continues to be commonly presented in contemporary accounts of animal behavior (Drickamer, Vessey, & Jakob, 2001).

The aim of this article is to address some of the problems inherent in this narrow definition by articulating a concept of instinct that can address the complexity of animate being. Such an expanded concept is greatly lacking in

evolutionary psychology, a branch of psychology that continues to ignore the dynamics of subjective life.

To focus the inquiry, I first turn to the early theorists of instinct and to the critique that left their theories in obscurity. This examination serves as an important historical ground for a reevaluation of the concept, and while this has been done before (Fletcher, 1957; La Fave, 1979), it has not, in my opinion, been sufficiently addressed. After summarizing the early accounts of instinct, I critique the determinism, dualism, and objectivism that pervade the critical reception of these accounts and that continue to inform much of contemporary evolutionary theory. I then conclude by presenting an expanded concept of instinct that aims to overcome the shortcomings of former accounts and situates instinctual life as an essential feature of animate being. Avenues of further research are suggested toward utilizing this novel account to explore the dynamics of a psychology of human instinct.

Instinctual Psychology

Darwin's (1859) theory of evolution changed the academic world. Evolutionary thinking affected all arenas of thought. This was especially true for the then emerging field of psychology. Human psychology could now be examined in the context of evolution. An exploration of human instinct was thus a matter of investigating those innate factors of human behavior common to the species as a whole. Instinct was, in Darwin's analysis, to be distinguished from habit. Habit was a result of developmental conditions—acquired traits. Instinct was a result of the inherited effects of natural selection—*inherited traits*. This distinction, between acquired and inherited traits, formed the basic theoretical milieu in which debates about the nature of human instinct unfolded. The remainder of this section involves an examination of those debates.

Early Instinctual Theory

Through the works of James (1890), Hobhouse (1901), Morgan (1905), McDougall (1908), Stout (1910), and Drever (1917), a complex psychological theory of instinctual life was presented.¹ While their accounts varied widely in regard to how instinct should most accurately be comprehended, their presentations exhibit at least four shared points that reveal a general commonality in their positions. Here I examine these points before turning to the critical response that their work met from the psychological community.

First, instincts were held to be expressions of *innate* species-specific behavior that reflected the evolutionary inheritance of a particular organism.

Instincts, following Darwin, were innate in that they displayed an intelligence that was considered to be independent of learning and skill acquisition. This innate intelligence was modified and adapted throughout the development of a life, so that while there was less experiential modification the closer an organism was to the moment of birth, experience necessarily modified instinctual behavior with time. This modification was more influential the more complex the organism. It is in this sense that James (1890) states that “instincts are the functional correlatives of structure” (p. 383). The functional expressions of instinctual life emerge through the bodily structure of the organism, which changes and develops over time.

Second, there was a common contention that there existed a great number of distinct instinctual manifestations. These theorists always focused on a theory of *instincts*. This emphasis on the plurality of instincts involved a careful analysis of behavior and a classification of the different instincts that emerged therein. In classifying different types of instinct they were trying to account for the vast array of human behaviors in terms of evolutionary and instinctual processes.

Third, it was held that instincts had a specific physiological basis. While different writers reflected this physiological basis through the use of different terminology—genes, reflex bundles, motor mechanisms, organization of nerve tissue, and so forth—it was commonly agreed that instinctual behavior was linked to a specific physiological preorganization.

The importance of this physiological basis led Morgan (1909) to assert that a true instinctual psychology must be able to adopt a “hybrid universe of discourse.” He contended that psychology had to investigate both what he termed the *physiological* and the *psychological* dimensions of instinct. The physiological, rather obviously, referred to the physiological processes of the organism, whereas the psychological implied the experiential or subjective perspective through which the world is engaged. As will become clear below, this division between physiological and psychological becomes a central motif in the development of instinctual theory. The question of instinct becomes a question of which of these two approaches is more adequately suited to contribute meaningfully to that theory.

The fourth and final commonality involved the conative dimension of instinctual life. The term *conative*, popularized by Spinoza, comes from the Latin, *conari*, literally, “to exert oneself.” This conative dimension emerges as an inner impulse or yearning that moves the organism toward a desired end. It emphasized the psychological quality of instinct as an inner impulse experienced by the organism. The conative dimension of instinct impels life toward a particular survival related goal. For Hobhouse (1901) and McDougall (1908), the conative dimension was the defining characteristic of instinctual

life. Their conviction is given weight by the etymology of instinct, which comes from the Latin *instinctus*, meaning “impulse,” which is derived from the Latin *instinguere*, literally “to prick from within.” This inner pricking impels life to exert itself toward a particular end.

It is important here to note that McDougall (1908) expanded this conative dimension by emphasizing the importance of affect in instinctual experience. In his words,

We should regard the central part of the instinctive disposition as both affective and conative in function, as responsible for both the emotional or feeling quality of the instinctive response and for the conative experience, with the setting of the goal, no matter what forms of bodily movement may be used in the course of such striving. (p. 502)

For reasons that will become apparent below, I follow McDougall’s addition of affect to the conative dimension. For now, these four common characteristics of early instinctual theory—innateness, plurality of type, physiological basis, and conative-affective striving—provide a general and greatly simplified overview of the shared perspective of the early theorists.

The Death of Instinct

It remains true, even so, that the concept of instinct became unfashionable. The criticisms had their effect in spite of their inadequacy. The Doctrine of Instincts was never dead—simply buried. (Ronald Fletcher, 1957, p. 107)

The flowering of instinctual theory was short lived. In his 1917 publication, *Instinct in Man*, James Drever, who would later become the president of the British Psychological Society, asserted that instincts “are the sole original driving forces in human nature” (p. 146). Yet such a conviction was only tenable for so long. In 1919, Dunlap’s article “Are There Any Instincts?” strongly critiqued the psychological notion of instinct as a conative source of purpose. Instead, he held that instincts are only properly understood in a physiological sense, and that instincts, understood as conative forces, are illegitimate.

Criticisms of this type continued to emerge into the 1920s, and the early instinct theorists found themselves besieged by severe opprobrium. The response against instinctual theory emerged from two main sources. On the one hand, there appeared the detailed criticism of the social psychologist Luther Bernard (1922, 1926). In his book of more than 500 pages, *Instinct: A Study in Social Psychology* (1926), Bernard presents an extensive survey and critique of instinctual psychology. In it he questions the relevance of the

concept of instinct by relying on a reductive understanding of neurology. On the other hand, there were the proponents of behaviorism, which most notably included Dunlap (1919, 1922), Kuo (1924, 1929, 1930), and Watson (1924), who collectively believed that psychology should be strictly relegated to the scientific study of observable behavior and distance itself from any attempt to explore the subjective dimensions of consciousness. These critiques, despite their inadequacy in many regards, sufficed to effectively eliminate instinctual theory from mainstream psychology.

As will become apparent below, the critiques as a whole centered on a dismissal of the role of subjectivity as a respectable topic of inquiry. This dismissal can be clearly seen in Watson's (1924) challenge to those "subjective psychologists" (p. 17) who deem the study of experience to be of relevance to psychology:

Show us that you have a possible method, indeed that you have even a legitimate subject matter. Prove to us that philosophy and the social sciences based on your speculations have any right to further take up the time and thought of anyone. (p. 17)

Watson, being the radical and zealous character that he was (Hothersall, 2004), advocated a psychology without subjectivity. And while he did utilize the concept of instinct in his early writings (Watson, 1914, 1919), Watson eventually abandoned it entirely (Watson, 1924, 1928) in favor of his insistence on the primacy of environmental conditions. In this way behaviorism became a psychology of observable behavior in the strictest sense, for it both denied the value of interiority and the influence of evolution. All meaningful psychological data were accessible to the direct and objective observation of behavior.

To take a closer look at this critical assessment of instinctual theory, I return to the four main characteristics that I outlined above: innateness, plurality of type, physiological basis, and conative-affective striving. In doing so, I take this opportunity to move more deeply into the subject matter of each point by both exploring the remarks of the critics and engaging a reframing of each point in light of these remarks.

Nature Versus Nurture

Beginning with the innateness of instinct, my inquiry opens toward what was a central concern of psychology for more than a century. This concern involves the debate between the level of influence attributed to innate factors (nature), on the one hand, and learned factors (nurture), on the other. Today,

it is generally recognized that no strict distinction can be made between the two, yet this was not always the case. And, while this debate is now largely relegated to the field of molecular genetics, the confusion of distinguishing between innate and acquired traits still abounds in evolutionary theory (Hampton, 2006; Keller, 2010). This confusion, and the deleterious effects of implanting a firm division between nature and nurture, lay at the heart of many problematic issues concerning the debate around the nature of instinct.

For the behaviorists, instinct was a superfluous term that had no bearing on scientific psychology. In the words of Watson (1924), “Everything we have been in the habit of calling an ‘instinct’ today is a result largely of training—belongs to man’s *learned behavior*” (p. 94). This dismissal of instinct was taken to the extreme in Kuo’s (1924) rejection of the notion of heredity. In his article, “A Psychology Without Heredity,” Kuo writes, “Heredity is not a psychological problem, since inheritance of psychological features can neither be proved nor disproved in the laboratory” (Kuo, 1924, pp. 439-440). This position was bolstered by Kuo’s (1930) experiments on the predator–prey relationship. Raising cats and mice together from birth, he discovered that all expected natural instincts of antagonism disappeared. The mice showed no fear in relation to the cats of their family unit and the cats showed no aggression toward the mice. These results confirmed for Kuo and the behaviorists the high likelihood that all behavior is learned.

Bernard (1926), on the other hand, took a slightly different angle on the notion of inheritance. In his view, it is not possible to inherit behavior. The only inheritable aspects of a species are the neuronal structures of that species. From this assertion Bernard concludes that there is no such thing as instinctual behavior. Instead, there is simply behavior, and instinct, if it exists at all, can only really exist on a physiological level. That is, that

an instinct is a biological fact and it is a unit character, or it does not exist. The actual instinct which is inherited is the unit of organization of the neurons, the physiological and neurological bases of which lie back of and give form to the activity or resulting behavior. (Bernard, 1926, p. 127)

By reducing instinct to neuronal “units” that are generated out of genetically encoded information instinct is equated with a deterministic account of genes.

These criticisms can be responded to in a number of ways. Bernard’s reductionism will be dealt with when I examine the early instinct theorists’ emphasis on the physiological basis of instinct. Here I focus on the problematic division of innate and acquired characteristic that was so central to the early debate.

From Dualism to Holism. What exactly are innate factors? And how might the indistinctness of this term contribute confusion to the matter as a whole? Classical genetics, following the works of Darwin (1868) and Galton (1874), proposed that it was in fact an invisible substance that caused innate factors, what Darwin termed *gemules* or *invisible characters*, an independent unitary particulate that was later termed a gene. The presence of a gene was never identified but was inferred through the existence of abnormal characteristics, diphtheria, for example, that seemed to be transmitted generationally in a given population.

This particulate theory of genetics was responsible for much confusion around the origins of innate factors. The philosopher of science Evelyn Fox Keller (2010) shows that the dualism of nature versus nurture emerged as genes began to be conceived as an internal substance. The traditional understanding of nature, as the capacities given at birth, and nurture, as the developmental maturation of those capacities, was replaced with an antagonism between inner (genetic) and outer (environmental) forces. Prior to this dualism, Locke (1692/1824), for example, wrote of the importance of education in nurturing children's natures. This early conception of nature and nurture reveals two mutually enhancing dimensions of living being that, through the attribution of a distinctly determinative causal force to each, were transformed into oppositional spheres.

The early instinct theorists, who focused on unlearned and inherited behavioral traits, the behaviorists, who focused on learned and conditioned behavior, and Bernard, who reduced innate factors to neurological organization, all upheld a strong division between nature and nurture. Yet as Fox Keller (2010) demonstrates, a strict division between the two is both baseless and unnecessary:

The casting of the debate as an effort to determine "how much of our behavior is driven by our genes versus the environments in which we grow up and live" poses a question that is not only unanswerable but . . . is actually meaningless. (p. 5)

Why is such a question unanswerable? Because "genetics and environment—are so deeply intertwined, so profoundly interdependent, as to make any attempt to partition their causal influence simply meaningless" (Keller, 2010, p. 4). Nature and nurture are inseparable.

The causal determinism that was carried forward by the particulate theory of genetics, wherein the inner (genes) determines the outer (environment), has been reconceived by dynamic systems theory (Oyama, 1992, 1993, 2000; Oyama, Griffiths, & Gray, 2001). This new understanding focuses on the

nonlinear recursive relationships that exist within and among temporally situated systems of organization. It reconceives evolution as a holistic and dynamic unfolding of recursive relationships, and not as a linear process of causal determination. In doing so, the distinction between nature and nurture takes on a new meaning. In Oyama's (1992) words:

Natures are simply developing phenotypes, whether common or rare, and they emerge and change by the constant 'nurture' of developmental interactions. This makes nature and nurture not internal and external causes or alternative sources of organic form, but rather developmental *products* (natures) and the developmental *processes* (nurtures) by which they come into being. (p. 224)

Instinct is, in this sense, more than innate or acquired. It is a dynamic fusion of an evolutionary past unfolded ontogenetically within the relational matrix of its environment. This holistic conception of evolution paves the way for a novel understanding of instinct. It is not simply a matter of focusing on the degree to which a behavior is innate versus acquired, as was the central concern of the debate between the early instinct theorists and their critics, but on the dynamic interplay between the organism and its environment. This dynamic interplay reveals an organism that is in continuous interchange with its surroundings such that the matrix of interpenetrating relationships in which it is embedded constitutes its very identity. Yet because its identity emerges from a particular heritage of self-producing cellular intelligences, it may still be functionally meaningful to articulate the extent to which certain behaviors are more clearly affected by that heritage than others. In this way, it may be meaningful to maintain a distinction between innate and acquired behaviors without holding a strict division that ignores the continuous interweaving of such behaviors at a fundamental level.

Classifying Instincts

Second, the attempts of the early instinct theorists to classify the diversity of instinctual behaviors resulted in the publications of numerous conflicting accounts of instinctual life. Founded on different understandings of the nature–nurture dualism and thus different presentations of what constituted instinctual behavior a plurality of different systems of classification emerged. Critical of the great disparity between these accounts Bernard (1926) cites some of the attempts:

Colvin and Bagley list 25 instincts under the following general headlines: Adaptive, individualistic, sex and parental, social, and religious and esthetic. E.

A. Kirkpatrick accepts 30 instincts which he arranges under the following headings: Individualistic or self-preservative, parental, group or social, adaptive, regulative, and resultant or miscellaneous. H. W. Warren has only 26 instincts, which he classifies generally as nutritive, reproductive, defensive, aggressive, and social. Woodworth's 110 instincts are arranged under the three general headings of responses to organic needs, responses to other persons, and play instincts. (p. 125)

The list of divergent accounts continues. The absence of a coherent and unified understanding of instinctual life added fodder to the canon of the critics. Yet that does not imply that such an understanding cannot be achieved. A meaningful and conceptually rigorous classification of instinctual behavior must be able to clearly distinguish what constitutes that behavior. Without a coherent method grounded in the empirical data of instinctual life all attempts to distinguish instinctual from noninstinctual behavior are doomed to failure. Thus, the crucial question is: On what grounds can behavior be said to be instinctual? While this question will be closely examined later in this article, Breger's (1974) psychological model of instinct serves as an example of a system of instinctual classification that is rooted in empirical studies of primate behavior.

Breger's model postulates "a group of primary instinctual areas" (Breger, 1974, p. 27) based on studies in primatology. Through his analysis of primatological studies he characterizes six main social-instinctual areas of affectively rich instinctual behavior: attachment-love, fear, separation anxiety, aggression and its control, sexuality, play-curiosity-and-exploration. While he acknowledges that there are other instinctual manifestations, such as hunger or pain avoidance, Breger chooses to focus on those social aspects of primate society that phylogenetically inform essential dimensions of human psychology. As he puts it, "Primate social life is dependent upon emotional reactions and communication systems that are unique; they are the precursors to man's social life" (Breger, 1974, p. 29).

Breger's account suggests the possibility of an instinctual classification that is grounded in the evolutionary dynamics of an interspecies social psychology. While it is far beyond the scope of this article to systematically classify the instinctual dynamics of human behavior, Breger's work highlights the possibility of reconceiving the project. The publication of many divergent lists of instincts reflected a general ambiguity and confusion among early instinctual theorists. This ambiguity provided ammunition to the critics and was a significant factor in the demise of instinctual theory. Yet this need not negate the fact there may exist the possibility of articulating a nuanced and sophisticated approach to demarcating the different behavioral aspects of human instinctual life.

Physiologically Determined

The third critical point involves the early instinct theorists' emphasis on the physiological basis of instinct. This emphasis led to confusion around the relationship between causal physiological processes and psychological experience. As we have already seen, Bernard (1926) critiques instinctual theory for not being reductive enough. He insists that the true source of innate behavior lies in "neuronal units" and that it is an analysis of these units that is of real value (Birney & Teevan, 1961, p. 17). Exactly what these units are, and how they might be analyzed, he does not explain. He is, I would suggest, simply carrying forward Galton's particulate theory of genetics, which, when taken to its extreme, assumes these inner units are the only relevant causal factor for understanding the behavioral features of animate life.

This extreme position is the ground from which Bernard (1926) launches his attack. Recall his assertion that "an instinct is a biological fact and it is a unit character, or it does not exist" (p. 27). Bernard completely dismisses the subjective dimension of instinctual life.

The early instinct theorist Drever, on the other hand, takes a more balanced position. Following Morgan's (1909) "hybrid universes of discourse," Drever (1917) insists that both what he terms the *biological* and the *psychological* domains need to be included in our understanding of instinct. He calls for an understanding of instinct that recognizes the importance of both the complexity of our physiological inheritance and the subjective reality of lived experience. Drever, however, focuses his inquiry on the latter. This decision comes from a recognition that "the prevailing view of instinct, during the last generation or so, has been the biological" (Drever, 1917, p. 20). His focus on the subjective dimension of instinctual life was to be one of the few attempts to understand instinct from the perspective of the organism. Little did he know that the rise of behaviorism was, ironically, to stamp out the psychological dimension of psychology for decades to come.

Thirty years after Drever's (1917) *Instinct in Man*, Tinbergen's (1951) ethological investigations of instinct, for which he later won the Nobel Prize, focus solely on its biological dimensions. In his view, because instinct is the product of "neurophysiological motor mechanisms," the subjective dimension is of little relevance. This is "because subjective phenomena cannot be observed objectively in animals," and hence, "it is idle to claim or deny their existence" (p. 4). This psychological agnosticism strips instinct of its lived dimension and thereby relegates it to the realm of hidden mechanisms and invisible units of substance.² And because this rejection of subjectivity was in accord with much of the early critique of instinctual theory, the fact that it was to popularize the concept of instinct once again is not entirely surprising.

Yet a purely physiological account of instinct fails to acknowledge the lived existence of the organism. Following Husserl (1954/1970) and Merleau-Ponty (1946/1962), Sheets-Johnstone (2009) notes that the division between biological and psychological domains involves a problematic division between the *physical* and *lived* bodies, that is, the body as measured and defined in scientific observation and the body as lived through the experience of a particular perspective. After critiquing the unnecessary dualistic assumption that such division promotes, she writes, “What is to be understood then is not a physico-chemical or physiological body in relation to a lived body, but life itself—animate being—as an existential-evolutionary phenomenon” (p. 77). Tinbergen’s presentation of instinct strips existence of its living by reducing animation to the mechanical processes of bodily physiology. Sheets-Johnstone (2009) continues:

The physical and the lived are not two distinct evolutionary sequences meeting and happening in the same creature, analogous in a sense to the laboratory conjunction of two strands of DNA, one recombinant and one natural. What exists and evolves are not parts but wholes, not fragments of life, but life itself. What is lived then in an existential-evolutionary sense are different sensory-kinetic worlds: these fins, these eyes, this fur, these wings, these ears, these arms, these legs, and so on, are a certain opening onto the world, they bespeak certain sensory-kinetic powers and sensitivities. (p. 79)

Physiological determinism denies the lived dimension of life by reducing all experience to the physiological and imposing a strict and untenable division between the physical and lived bodies.

Conative-Affective Motivations

This denial of subjectivity relates directly to the fourth and final dimension of the critique of human instinct, its conative-affective quality. By now it should be clear that perhaps the most forceful point of the critics involved denying the relevance of subjectivity. Thus, their rejection of the importance of purposeful affect-laden behavior should come as no surprise. According to Bernard (1926), depicting the qualitative dimensions of instinctual behavior was uninformative as a causal explanation of that behavior. As we have seen, Bernard’s focus on causal explanation stems from his biological reductionism. This reductionism dismisses the qualitative dimension of instinctual behavior. The fact that instinctual behavior is characterized by goal directed and emotionally toned actions is, in Bernard’s view, irrelevant to the causal mechanisms that underlie that behavior. Recall that for Bernard it was these

causal mechanisms that reveal the true instincts. The descriptive and experiential features of instinctual behavior are merely secondary qualia.

Like Bernard, the early behaviorists saw little value in describing subjective experience. All supposed purposiveness was merely a specific response to a specific stimulus. So predetermined were these responses that Kuo (1930) proposed the possibility that one day “we should be able to predict in mathematical terms how a given cat will react to a given rat at a given moment” (p. 35). This mathematical determinism denies the qualitative realities of purpose and subjectivity by imposing simple causal distinctions on the complexity of animate life. Behind a desire for clarity and control, the early behaviorists proposed a misguided and morally bankrupt enterprise that reduced the complexities of articulating the multidimensional reality of behavior to a simple causal formula.³

It was very likely the simplicity of the behaviorist approach that led to its success. The early instinct theorists, on the other hand, faced with the intricacies of integrating many levels and dimensions of instinctual life, were forced to end their days in obscurity, beaten by a psychology that grew out of superficial assumptions regarding the complexity of human life.

In contrast to these critical responses to the conative-affective feature of instinctual life, and the dreary outcome for the instinctual theorists, I would like to reframe this critique by acknowledging two points. The first is that this feature is not merely descriptive, as Bernard claims, but richly explanatory. That is, it explains the motivation of behavior in important ways. The philosopher of biology Hans Jonas (1966) characterizes world-directed conative action as a fundamental dimension of living being. The inherent capacity of an organism for *self-transcendence*—its metabolically emergent movement toward the world—allows it to meet the world in significant ways that are essential to its continued survival. Thompson (2007) paraphrases Jonas’ thought as such:

Metabolism propels life outward and forward, beyond its present condition in space and time. Life must be oriented in this way because its primary condition is one of concern and want, a condition that in animal life manifests itself as appetite or desire. Concern, want, need, appetite, desire, . . . these are essentially affective and protentional or forward looking. (p. 156)

Jonas’ presentation of the conative striving of the organism centrally locates purposive behavior as an essential feature of living being. This highlights the second point, which is the central role that many authors attribute to what I am calling, following McDougall (1908), the conative-affective dimension of instinctual life. This role is often depicted as so essential that

the classification of different instincts can be characterized as different manifestations of this common source.

The neurologist Kurt Goldstein (1934/1995), after critiquing different attempts to classify the instincts, writes that all instinctual manifestations emerge from “the drive to self-actualization” (p. 163). This primary impulse impels human beings to actualize the possibilities that they encounter, and because these possibilities are encountered in different contexts, one is led to assume that there are different instinctual drives. Yet Goldstein contends that these apparent differences emerge from a common source: “The organism has definite potentialities, and because it has them it has a need to actualize or realize them. The fulfillment of these needs represent the self-actualization of the organism” (Goldstein, 1934/1995, p. 168). Regardless of the specific form that an action might take, it springs from an impulsion to meet and actualize life potential.⁴

Freud also presented the demand for worldly action that instinct exerts on the organism as the chief and essential feature of instinctual life. In this context, Yankelovich and Barrett (1970) have noted that, despite Freud’s questionable attempts to classify instincts in different ways throughout his life, instinct retained this fundamental character throughout his writings. Drawing on a psychoanalytic account of instinct by Bibring (1936/1941), Yankelovich and Barrett (1970) suggest that,

if we think of instinct as a kind of reservoir or pool of homogenous energy, then the specific ways in which this energy is siphoned off is relatively secondary. What fundamentally differentiates one instinctual impulse from another is its relative amount of force. (p. 38)

Without ignoring the problems inherent in Freud’s use of Newtonian metaphors—metaphors that tend to reduce subjective experience into a quantitative box of mechanical interactions—instinct is, in this sense, depicted as a basic striving to engage the world that can take on a multitude of different potential manifestations.

While the conative-affective dimension of living being has been depicted in different ways by different authors—sense-making (Varela, 1991, 1997), teleonomy (Monod, 1970/1971), self-transcending freedom (Jonas, 1966), self-actualizing (Goldstein, 1934/1995), immanent purposiveness (Thompson, 2007), and so forth—the commonality remains that in each perspective purposeful world-directed behavior is foundational to the dynamics of life itself.

Though early instinctual theory fell prey to reductive and objectivist critiques, the preceding account should suffice to suggest that not all of these criticisms were justified. I have highlighted the problematic nature of the

nature–nurture dualism, the classification of the instincts, and biological reductionism. I have also examined the potential fruits that might be harvested from an account of instinct that reconceives nature and nurture, welcomes the subjective dimension, and supports the possibility of an instinctual classification that is based on sound evolutionary evidence. To many, the concept of instinct, with its convoluted history, may seem beyond salvage. I suggest that this need not be the case. In the following section, I attempt to root my previous analysis in the living field of subjective life, and thereby ground the many dimensions of instinctual theory in the question of what it means to live as an instinctual being.

Rethinking Instinct

In both the fields of ethology and evolutionary psychology, instinct continues to be conceived in light of Lorenz and Tinbergen's original formulations, as a preprogrammed pattern of fixed behavior.⁵ Yet despite their early criticisms of subjective life, animal subjectivity, while conceptually isolated from instinct, was eventually introduced into ethological studies (Vonk & Shackelford, 2012). Meanwhile evolutionary psychology, while in dialogue with ethological and primatological research, continues to rely primarily on statistical analyses of population genetics and brain-centered accounts of neurodynamics. It has yet to include subjectivity into its predominant discourse. Thus, the inclusion of subjectivity can not only offer a novel account of instinctual life by expanding Tinbergen's (1951) presentation of instinct but also a dimension of instinctual life that is largely absent in most presentations of evolutionary psychology.

In this way, rethinking instinct involves moving beyond dualistic, reductionistic, and deterministic accounts of biotic existence to provide a novel account of instinctual life. It involves conceiving the organism as a complex and dynamic system that has temporally evolved within an interpenetrating matrix of chemical, social, and environmental relationships. Once the gene is seen as a dynamic feature of the self-producing processes of cellular life, and not as a static unit of information, the possibility emerges of reconceiving the way in which instinctual life is said to be predetermined. The aim of this section is to explore a novel understanding of instinctual life by (a) presenting a dynamic account of instinctual determination and (b) using that account to explore a novel understanding of instinctual behavior. These aims are clarified through the examination of a standard example of instinctual behavior: the newly hatched sea turtle's journey to sea.

Phylogenetic Unfolding

At high tide during the warmest months of the year the mother sea turtle climbs a sandy shore and spends a few hours digging a hole with her fins. In the hole she deposits 50 to 200 eggs. She then covers the hole and returns to sea. Insulated from changing temperatures and protected from predators, the eggs continue to develop over the next 8 weeks. Once matured, the newborn sea turtles emerge from their shells and together spend the next 3 to 7 days burrowing their way out of the sand. Due to threats from predators and the risk of dehydration, the turtles generally wait until nightfall to make their scrambling journey down to the ocean.

The newborn sea turtles' movement to sea reflects a paradigmatic example of instinctual life. It reflects the mystery of how evolutionary wisdom emerges in animal behavior. And from this mystery the question emerges: How does the sea turtle know which direction it must go? It is the task of the instinctual theorist to explain how this behavior is determined.

In the traditional ethological view of instinct the sea turtle's movement toward the ocean reflects a fixed pattern of behavior wherein a definite stimulus (ocean) invokes a defined response (ambulation toward it). In this view the behavior emerges from fixed genetic sequences that inform specific physiological mechanisms to respond in specific ways. Yet while this mechanistic description may serve to metaphorically highlight the observed behavioral dynamics, it does not accurately reflect the processes of instinctual life, or do justice to its complexity. This input-output model of stimulus-response, and the simplistic causal dualism that it presents, ignores the self-governing dynamics of animate life by conflating its autonomy with the heteronomy of human dependent machines. The idea that fixed units of genes determine the fixed mechanics of behavior, like the mechanical parts of a motor determining its function, fails to capture the complex dynamics and subjective reality of animate being.

If the behavior of the baby sea turtle is conceived in light of the view of instinct that I have been developing in this article, then an altogether different picture emerges. In this new picture, the sea turtle is not blindly driven to sea by the fixed constraints of hidden mechanisms. Instead, the sea turtle makes its way to the water by means of actualizing the sensorial possibilities that are at its disposal. That is, it breathes, moves, and relates to its environment as only a sea turtle does. The baby turtle exists as an evolutionarily emergent collection of millions of genetically informed cellular systems that together comprise the organic unity of its identity and constitute the unique perspective of its awareness.

In this expanded understanding, it is the organismic unity of cellular intelligences that inform awareness and thereby constitute a world of possibility unique to the phylogenetic history of those intelligences.⁶ Only in this holistic and dynamic sense of complex and genetically informed cellular systems constituting awareness can instinctual life be said to be predetermined. In this sense instinct is not predetermined statically but *dynamically*. The dynamic and continuous interactions between genes and environment create the constraints through which the possibilities of a given organism are actualized. The evolution of cellular systems allows for the actualization of possibilities specific to those systems. These possibilities are not fixed in any rigid or static way but dynamically predetermined by the flexible and ever-shifting constraints of genes and environment.

The genetic patterning of the sea turtle's heritage provides it with a domain of possibilities specific to it. After emerging from the nest it must contend with the continuously modulating environment in which it is embedded. The dynamic patterns of surf, alterations in slope and texture of the beach, changing weather patterns, varying presence of predators, fluctuating availability of nutrients, and so forth, together comprise a diverse domain of environmental relationships with which the sea turtle must contend. The sea turtle is thus an autonomous system capable of making sense of its environment in important ways. It is not blindly driven by internal mechanisms.

Yet while this exposition on the dynamic determination of instinctual life may suggest the ways in which genes and environment complexly interrelate to create a domain of possibilities specific to the awareness of a given organism, further clarification is needed to explain instinctual behavior. Why does an organism act the way it does?

One key reason that explains how newborn sea turtles make their way to sea is that they are phototrophic beings—they are drawn to move toward light. The oceanic horizon is brighter than that of the shore and so the turtles move toward it. The deaths of sea turtles on light polluted beaches attest to the fact that this phototactic sensitivity is a crucial factor in a successful passage to sea. And yet without denying the fundamental role of the retina's photoreceptors, it is important to note the multiplicity of cellular systems of which the sea turtle's visual system is merely a part. This greater whole combines to give rise to and inform the turtle's awareness. In this way, the holistic reality of the organism is added to the causal significance of phototactic factors. In other words, in addition to the relevance of the turtle's photosensitivity to a more strongly illuminated horizon the turtle engages purposeful and whole-bodied relationships with a world that it knows phylogenetically to be its home.

The recognition of this home-world does not merely involve a greater sensitivity to light, but a knowing deep in the sea turtles body that it belongs in the sea. Its phototactic sensitivity may be the determining factor in its capacity to find the sea, yet it is but one part of a greater instinctual unfolding of the turtle's life. Instinct need not be reduced to one causal relationship. The sea turtles front and hind flippers, its externally regulated (ectothermic) temperature and corresponding low metabolism, its digestive capacity to separate salt molecules from water molecules, its sensitivity to the Earth's magnetic field that allows it to migrate across hundreds of miles of ocean and return to the beach of its birth, each reflect the fact that the sea turtle is of the sea. The mystery of its instinctual behavior—its emergence from the nest at night, its movement toward the sea, and so forth—involves the process wherein its evolutionarily emergent physiology and the conscious state that emerges through the intertwining of the diverse dimensions of that physiology give rise to purposeful and affect laden relationships toward its continued survival.

In this sense, instinctual behavior involves a process of what I here term *phylogenetic resonance*—the process through which evolutionarily developed cellular intelligences inform the whole-bodied awareness of a given organism. The origin and history (genesis) of a species (phylum) is embedded in each cell of an organism such that a specific phylogenetic resonance with the environment calls forth a specific repertoire of instinctual behavior. In this way the etymology of instinct as an “inner pricking” is reflective of the whole-bodied urging of an ancient past impelled into novel and creative relationships.

Toward an Expanded Concept of Instinct

The above analysis suggests that instinct is more fully understood once it is approached from the lived perspective of the organism. While the ethological understanding of instinct as a fixed pattern of behavior has provided many benefits regarding our understanding of animal behavior, I contend that instinct need not be reduced to particular behavioral expressions of animate life. While such expressions do reflect the mystery of a multiplicity of distinct behavioral intelligences among species, there is no requirement that such behavior be reduced to genetic and physical mechanisms.

In ways that are not yet fully understood, genes, the chromosomal processes of DNA in the cell nucleus, influence patterns of morphological development distinct to a given species. Yet genes cannot be said to *cause* behavior anymore than the fluid that surrounds the cell nucleus can be said to cause

genetic process. Instead, genes, in complex and dynamic relationships with their environment, inform the ontogenetic unfolding of living being.⁷ They are an interdependent feature of a greater whole. A truly robust account of instinct must be able to account for the way in which physiological processes inform and give rise to subjectivity such that the two are coemergent features of an integrated whole. Just as we need not reduce the subjective to the physical, nor the physical to the subjective, our understanding of animate life need not be constrained by reductive presuppositions.

Once instinct has been liberated from the narrow confines of genetic determinism, wherein a pre-given genetic code causally affects a predetermined pattern of behavior—and objectivism—wherein the subjective features of living being are denied their epistemic value—a broader epistemological conception of instinct emerges.

In the broadest sense instinct is a feature reflective of the whole of biological evolution. Instinct emerges in the distinction between the organic and the inorganic. Where there is life there is instinct. An evolutionary heritage informs the dynamics of every living being, and thus every behavioral expression, act, or conscious state involves a certain degree of instinctual presence. No organism can be separated from the intricate matrix of cellular intelligences that inform and give rise to its awareness. Instinctual behavior, in this broad sense, is the way in which a distinctly constellated corporeal consciousness engages in meaningful relationships with the world. It is the temporal unfolding of an evolutionary past into a bodily affective present of relational possibility.

Yet this broad conception of instinct can be qualified by the degree to which a phylogenetic resonance is corporally present. Developmental conditions influence, alter, and constrain instinctual life such that instinct does not exist as a predetermined blueprint of a species nature. Instead, the nature of a given species is a potential that develops dynamically within the context of its ever-shifting environmental relations. Of course, developmental conditions will have a greater impact on instinctual expression in social species, wherein social norms modulate instinctual expressions. These expressions are usually moderated in relationship to survival, and thus to safety within the social group. In a wolf pack a male wolf may feel a sexual desire to mate with a female of the pack. Yet despite the phylogenetic resonance that impels the wolf to mate, if he is not the alpha male, then under normal circumstances his instinctual desire is subordinated to social norms. In this way social norms regulate instinctual expression.

But are not social norms instinctually emergent? Is not the wolf's deferral of his desire to the alpha male an instinctual behavior through which his

survival is supported? It is in this sense that I hold the broad claim that all behavior is to some extent instinctual while at the same time suggest that there is a core phylogenetic expression that lies at the root of instinctual life. While the wolf's deferral is instinctually driven it is the core phylogenetic resonance that will drive the wolf to seek the same mate once the dominant wolf is displaced.

Thus the core of instinctual life, which emerges from the cellular intelligences of individual organisms, is the specificity of a phylogenetic resonance that impels the organism toward a particular action. This core is then modulated through social norms and environmental demands. Instinctual behavior can then be said to be most instinctual when it emerges from this core, whereas learned behavior involves the modulation of it. In this way learned behavior is to some degree instinctual, for it is the modulation of a primary instinctual intelligence into more socially acceptable and survival-related forms. And yet this instinctual core can only be adapted so far, for its restriction involves a restriction of the life force of the organism. That is, because instinct is a quality of an organism's vital function, constraints on instinctual expression directly diminish its overall vitality. For instance, all attempts to keep the great white shark in captivity have resulted in its death. While the cause of this remains debated, it is not hard to see that if the constraints placed on an organism exceed the limits of its natural instinctual expression, its health will be compromised.

It is in this way that the inquiry opens into the most complex of social species and into the realm of human instinct. While it is beyond the scope of this article to explore the functional dynamics of a theory of instinct unique to human beings, the possibility of such a theory opens many fruitful areas of further research. It brings up the question of the relationship between culture and instinct. To what extent might cultural norms restrict or support healthy instinctual expression? How might an investigation of human instinct reveal meaningful insights concerning the nature of human nature? What is the role of culture in fostering or negating that nature? To what extent are social structures necessary to safeguard us from destructive instinctual expressions? And how do we discriminate between healthy and destructive expressions?

It also brings up the question of the relationship between human instinct and consciousness. For instance, what might be the role of self-reflective consciousness in fostering healthy instinctual expressions? Why have instinct and consciousness been traditionally portrayed as antagonistic forces? And how might we envision their mutual harmony?

These questions reveal avenues of inquiry for further research. At this point, it should be clear that humans, as living beings, are instinctual beings.

Yet human consciousness involves the dynamics of self-reflective awareness, the construction of symbolic systems of communication, and the intersubjective constitution of a complexly interrelated diversity of cultural norms. Therefore, human instinctual life necessarily reflects different dynamics than that of nonhuman species. In this article, I have focused my inquiry on the nature of instinct as it pertains to all living beings. Yet an investigation of human instinct requires an attunement to the reality of psychological life. And while there are a multitude of avenues that such an attunement might take, there are two on which I would like to focus before closing this section.

The first involves an engagement with depth psychology. In particular, the writings of Freud and Jung. Instinct stands at the heart of Freud's psychology. His understanding of the relationship of instinct, or what he terms drive (*Trieb*), to consciousness could serve as a meaningful ground for a deeper exploration of the subjective dynamics of instinctual life. Also, Jung builds on Freud's insights in important ways. By clarifying the relationship between instinct and symbol he roots the dynamics of symbolic life in the phylogenetic unfolding of our evolutionary heritage. He also examines how this relationship ethically shapes the development of culture.

One of the major shortcomings of this article is that I have not had sufficient space to address those psychological arenas that continue to hold instinct as a central concept. Instinct did die out of mainstream academic psychology yet it is important to note that many fields on the margins never extracted the concept of instinct from their psychologies. Depth psychology is one of those domains and I believe that there is potential for a rich dialogue between the expanded concept presented here and depth psychological approaches to instinct. In this regard, I am currently preparing an article that deals directly with Freud's instinctual psychology (Malkemus, 2013).

The second is that of humanistic psychology. As a holistic and nonreductive branch of psychology there is already much in common between the expanded concept of instinct presented here and the overarching humanistic vision. Many of the foundational figures of humanistic psychology—Adler, Fromm, May, Tillich, and Maslow—held an instinctual understanding of human nature. In contemporary humanistic psychology's movement toward refining and humanizing our understanding of human nature (DeRobertis, 2013), I believe that there may be much to be gained by a serious consideration of the role that a nuanced conception of instinct plays in shaping that nature. Not only might this possibility bring humanistic psychology into deeper relationship with contemporary evolutionary theory⁸ but it might also open the door toward a humanistic evolutionary psychology that more

accurately reflects the lived dynamics of psychological life than most current evolutionary psychological perspectives.

Conclusion

The primary aim of this article has been to expand the concept of instinct beyond the narrow scope of Lorenz and Tinbergen's ethological formulations. A secondary aim has been to suggest that, despite its disappearance, instinct continues to be a viable concept in psychology. I have attempted to show that, if conceived more broadly, the concept of instinct has many potential fruits to offer. This contention is grounded on the continued presence of the nature–nurture dualism and the absence of subjectivity in evolutionary psychology. The concept of instinct reminds us that we are instinctual beings with a rich evolutionary heritage. In ignoring its relevance we may run the risk of overlooking an important dimension of psychological health that connects us to our vital natures and embeds us within a greater planetary matrix of ecological relationship.

Hampton (2006) has warned evolutionary psychologists that they may face a similar fate as the early instinct theorists if they continue to ignore certain problematic presuppositions that are implicit in their accounts. While Hampton focuses almost exclusively on the problems of classifying behavior, I would add that until the lived dimension of instinctual life is included in their inquiry, the field of evolutionary psychology will remain incomplete.

This article is one small step toward the elaboration of an expanded understanding of instinctual life. It lays the groundwork for further research, specifically research into the dynamics of human instinct. I propose that such research may reveal important moral dimensions of human psychological life that might enhance our understanding of what it means to live healthy and wholesome lives—lives that are not in conflict with instinctual impulses but understand such impulses to be a natural part of their evolutionary heritage. It may be through developing a new relationship to instinct that we find ways of responding to and carrying out instinctual impulses in mutually enhancing relationship with each other, and with the world.

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Notes

1. Here I have chosen the principal psychologists who were involved in the instinct debate. Freud must necessarily be included among the early influential theorists of instinct, yet I chose to omit Freud's work here, first, due to space constraints, and second, because the critical response to the theory of instinct was not aimed at his work. For an overview of his psychology of instinct, see Fenichel (1946/1996), Fletcher (1957), Nagera (1970), and Yankelovich and Barrett (1970).
2. For the role that this mechanistic account of instinct played in bolstering Bowlby's (1969, 1973) theory of attachment, and how both theories played into the hands of the patriarchal values of cold war America; see Vicedo (2013).
3. My critique of the moral shortcomings of behaviorism is aligned with contemporary psychologists who have shown how a strict division between objectivity and subjectivity involves an equally sharp division between fact and value. A deconstruction of these simplistic divisions reveals how the moral dimensions of value and meaning are intimately intertwined with psychological research. See especially Flyvbjerg (2001); Richardson, Fowers, and Guignon (1999); and Slife and Williams (1995).
4. As is well known, Maslow (1954, 1962) continued to develop Goldstein's concept of self-actualization. In this way, humanistic psychology is in part founded on an organismic understanding of instinctual life. Maslow (1962) posits that the deprivation of basic "instinctual needs" (p. 22)—love, safety, and so on—is central to development of psychological illness.
5. It is important here to note that Tinbergen, largely in response to Lehrman's (1953) critique of ethology's account of instinctive behavior, eventually distanced his presentation of instinct from the determinism and dualism that characterized his and Lorenz's earlier accounts (Tinbergen, 1963).
6. The notion that every organism has a subjectively constituted biological world of significance was famously presented by Jacob von Uexküll (1934/1957). His work has had a great impact on my understanding of the subjective dynamics of living being. For an exploration of the relationship among von Uexküll's concept of the *Umwelt* or biological world, spiritual world(s), and the lifeworld of transcendental phenomenology, see Malkemus (2012).
7. For a contemporary account of the complex role of genes in evolution, see Jablonka and Lamb (2005). For an example of recent research that supports the dynamic and contextual nature of genetic life, see Fields (2013).
8. For a recent example of this relationship, see Raskin's (2012) comparison between evolutionary constructivism and humanistic psychology.

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