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Research Dialogue

Evolutionary consumer psychology: Ask not what you can do for biology, but…

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Abstract

The commentaries raise questions about modularity, and about the evidence required to establish evolutionary influences on behavior. We briefly discuss evidence leading evolutionary psychologists to assume that human choices reflect evolutionary influences, and to assume some degree of modularity in human information processing. An evolutionary perspective is based on a multidisciplinary nomological network of evidence, and results of particular experiments are only one part of that network. The precise nature of, and number of, information processing systems, is an empirical question. Consumer psychologists need not retrain as biologists to profit from using insights and findings from evolutionary biology to generate new hypotheses, and to contribute novel insights and findings to the emerging nomological network of modern evolutionary science.

Keywords: Evolutionary psychology; Behavioral ecology; Domain specificity; Consumer psychology

Introduction

The commentators raise questions regarding: 1) the evidence required to establish that behavior is linked to evolution, 2) how modular the human mind is, and 3) the links between evolutionary psychology, behavioral ecology, epigenetics, animal sociobiology, and other biologically-based behavioral disciplines. In what follows, we briefly review the nature of the evidence that has led an increasing number of researchers to presume that human behavior and choice reflect the operation of mechanisms shaped by evolution. We then briefly review evidence suggesting some degree of modularity in the mechanisms linked to learning, cognition, and affect. The exact nature and number of evolved mechanisms involved in human choices and behaviors remain open empirical questions.

Mapping the precise ways in which evolved mechanisms are linked to genetic influences, and how they unfold in interaction with the environment are interesting multi-disciplinary questions. However, many of those questions are irrelevant to the central question of relevance for consumer psychologists: Could research on consumer choice be enriched and expanded by incorporating what is *already known* about behavioral biology, based on existing cross-species and cross-cultural comparisons, as well as the broader nomological network of evolution-inspired research? We believe that the answer is yes, and present the relevant evidence in the target articles. The key is to ask not what consumer psychologists can do to prove key tenets of evolutionary biology, but to ask instead what the known principles of evolutionary biology can do to inspire new hypotheses about consumer behavior.

We conclude with a discussion of what Pham (2013) labeled "the seven sins of consumer psychology," and briefly discuss how an evolutionary approach could help the field absolve them.

Gathering evidence relevant to evolutionary hypotheses

Cohen and Bernard devote a substantial section of their commentary to questioning whether particular empirical findings are "consistent with an evolutionary narrative rather than a more

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traditional social psychology framework." They raise such questions, for example, about findings demonstrating that mating motives inspire men, but not women, to become less loss averse, to become more creative, to become less conforming, and to become more directly aggressive.

It is, of course, hard to imagine a particular experimental finding for which a thoughtful researcher could not raise an alternative explanation. Even in the case of findings involving hormonal influences operating outside of conscious awareness (cf. Anderson et al., 2010; Saad & Stenstrom, 2012; Saad & Vongas, 2009), one could postulate that any given finding might reflect the operation of general arousal or positive mood. Given that it is easier to prove or disprove a hypothesis focusing on immediate affect or conscious cognitive reckoning, why even bother to advance evolutionary hypotheses, which by their very nature involve more layers of inference than do traditional psychological hypotheses (cf., Conway & Schaller, 2002)?

It is important to note that scientific theories are not evaluated solely by the criterion of parsimony, but also by the criterion of comprehensiveness. By a strict parsimony criterion, radical behaviorist accounts, which focused on directly observable variations in stimuli and overt responses, would win over cognitive hypotheses (which always involve additional levels of inference about unobservable internal steps inside the head). And evolutionary hypotheses (which always involve additional levels of inference about past adaptive function) would always fare relatively poorly in contrast to proximate explanations (ignoring for the moment the problem of proliferation of disparate "parsimonious" accounts for different findings).

Evolutionary hypotheses about affect, cognition, and behavior are evaluated not solely on the basis of single experimental results, but with regard to a much larger body of literature—a vast nomological network of findings arising from comparisons across species and comparisons across cultures, as well as research on behavior genetics, development, learning, and cognitive neuroscience (Schmitt & Pilcher, 2004). Experimental findings must ultimately be consistent with what is known about the broader principles that govern the behavior of living organisms, but the findings of any given series of experiments, although they may contribute to that broader nomological network, cannot prove or disprove the operation of evolution.

For example, American men seek to marry women who are, on average, younger than themselves, whereas women seek to marry older men (Kenrick & Keefe, 1992). Several researchers explained this discrepancy in terms of a seemingly obvious proximate cause—norms of American society specifying that husbands should be taller, more powerful, and older than their wives (e.g., Cameron, Oskamp, & Sparks, 1977). However, an account in terms of sex-role norms failed to explain several features of the data. Whereas men above age forty show a strong preference for younger partners, men in their twenties do not. Teenage boys, who are much more sex-typed than older men, actually express an interest in women older than themselves (despite understanding that those older women do not reciprocate their interest) (Kenrick, Gabrielidis, Keefe, & Cornelius, 1996). Kenrick and Keefe (1992) suggested that a better explanation of these findings would involve a consideration of sex differences in human life history—female fertility peaks in the twenties but then decreases during the thirties, and ends in menopause by age fifty. To pit the evolutionary life history account against the American norms account, it was necessary to establish that the same sex difference in mate preferences was found in other societies. Indeed, it was found all around the world, in South America, Africa, and on diverse islands scattered around the globe (Harpending, 1992; Kenrick & Keefe, 1992; Otta, Queiroz, Campos, daSilva, & Silveira, 1998).

The mutual attraction between relatively older men and younger women is linked to characteristics human beings do not share with most other mammals—including menopause and pair-bonding (the latter is found in only about 5% of mammalian species, Geary, 2000). Many findings described in the two target articles, however, are linked to two very broad biological principles—*sexual selection* and *differential parental investment*. These two principles have been found to be interlinked, and to apply across a wide range of species, including all other mammals. In brief, *sexual selection* refers to natural selection of characteristics that promote an animal's ability to mate, either by competing with members of its own sex (as in the case of antlers) and/or to attract members of the other sex (as in the case of a peacock's feathers). Sexually selected characteristics involve an important trade-off: they are typically costly, and can dramatically reduce an animal's chances of survival.

Darwin noted that male animals are, in general, more likely to display sexually selected characteristics. This difference has been linked to *differential parental investment*: the discrepancies between parents in the amount of resources invested in offspring. When one sex contributes more to the offspring (as in most mammalian species), that sex will be more careful in choosing mates. The members of the opposite sex will compete to be chosen, and any trait that assists in that competition will be (sexually) selected. This pattern holds across species, and helps explain occasional sex-role reversals, as in phalaropes, sandpiper-like birds in which the male cares for the eggs while the female seeks additional mates. Consistent with principles of differential parental investment, it is female phalaropes that are relatively more colorful and more competitive.

Across species, a number of traits are linked to sexual selection and differential parental investment. Although mammalian females require additional traits linked to mothering (a uterus and mammary glands, for example), males tend to reach sexual maturity later, allowing time to grow larger (larger size helps them compete with other males).

Human beings show numerous signs of sexual selection, including larger male size and later maturity for males as compared to females (Geary, 1999). Males across human societies are also more likely to engage in aggressive intrasexual competition (Daly & Wilson, 1988). Furthermore, the same hormones involved in the development of sex-typical male characteristics in other species—testosterone and estrogen—are likewise involved in the development of sex-typical characteristics in humans.

Hence, although one can easily advance alternative explanations for particular findings, a comprehensive explanation must account for the various facts—that mating motives are selectively linked to aggression, to financial risk, and to various display