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Do We Really Need Evolution in our Psychology Classrooms? A Letter Exchange between Two Colleagues in Search of Understanding

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ABSTRACT

Within many academic communities, the large-scale emergence of the evolutionary perspective in psychology in the past few decades has been a cause of wide-scale, intensive, and often critical debate. The SUNY New Paltz Psychology Department, our home department, has been a particularly active home of such interactions. This article is an exchange of letters between two members of this department on this issue. Phyllis Freeman is a physiologically trained comparative psychologist who has been teaching psychology since the mid-1970s. Professor Freeman's focus always has been on how best to teach and achieve high-level student development. Professor Geher has been with the department since 2000, and developed the department's undergraduate course in evolutionary psychology (PSY-307) in 2003, the course that served as the catalyst for this and other discussions among the faculty over the past decade. The letter exchange presented here provides a snapshot of the kind of dialogue that has transpired in our department on this topic – with the hope of providing others a glimpse into the kinds of dynamics that surround evolutionary psychology at a local, departmental level.

KEYWORDS

Evolutionary Psychology, EvoS, Evolutionary Studies, Evolution Controversy, Teaching of Psychology

Dear Glenn,

When I teach Introductory Psychology or talk to non -psychologists about psychology, I often have to counter beliefs that our discipline is unified into a single perspective on human behavior and that every new discovery adds to our collection of "facts." Of course, no science operates like that, and most disciplines have competing perspectives among members. Some of these disagreements can be quite sharp and even vociferous.

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One early distinction in the history of psychology was between those who were interested in how human behavior "worked" and those more concerned with how it "functioned." I have imagined Titchener and Wundt (structuralism's founders) verbally dueling William James and G. Stanley Hall (functionalism's proponents), loudly affirming their views supported by their "facts." The stakes were high at the beginning of our discipline since the winning perspective likely would set the path for the new science of psychology in the 20th century.

I think modern psychology remains a deeply divided discipline. One such divide is between inheritors of the structuralists' perceptive like me, trained in neuroscience (called *physiological psychology* in the old days). Although I originally studied the brain correlates of animal learning, I now am focused on physiological correlates of mental health in those with chronic illnesses. I am one of those "old time" experimental psychologists committed to research into the structural workings of and interrelationships among the human brain, hormone, and immune systems. Other colleagues across the experimental psychology divide often are modern functionalists, those scientists perhaps less concerned with structure and focused more on articulating persuasive explanations for the biological functions of emotions like jealousy, and behaviors such as a mating preferences, human aggression, and language development. It is no surprise that evolutionary perspectives have become increasingly influential in both of these "camps." Students in the evolutionary psychology courses at SUNY New Paltz frequently report to me how engaging the ideas are and how "right" they sound. So what might this perspective add to bridge the divide in our field?

The outcome of this discussion between us perhaps could provide a roadmap for faculty not yet teaching from an evolutionary studies (EvoS) perspective who might wish to include course units and class discussions incorporating this perspective. It is unlikely that some of us more structurally oriented psychologists will fully embrace the EvoS perspective. Perhaps some of my colleagues will resist making it the guiding force of their research or intellectual perspective. But we are challenged to step into the 21st century and accept the enormous influence this perspective is having on our discipline. Can EvoS help us to "transcend disciplinary boundaries?" (Wilson, 2007, p. 9) Could any perspective? Should any perspective? What about one based on a theory that is 150 years old?!

At the onset, let me state my understanding of the underpinnings of human and animal behavior as I reflect on my own teaching and research. I begin with at least 5 "givens." How do they compare to your EvoS view?

1) Individuals differ and many/some of these differences have a genetic or biological basis – the concept of heritable variation through mutation or recombination.

2) Biological and genetic aren't necessarily the same thing. Of course, genes are regulatory elements that are inherited from parents.

3) Gene expression can be shaped by the environment. Early experience, exercise, nutrition, disease exposure, all can change the nature of which protein gets made or doesn't get made, producing persistent changes in

brain and behavior. This concept of epigenetics is well supported by numerous studies (e.g., Champagne, 2010).

4) Sometimes the differences in gene expression, of course, can have significant consequences – [the] concept of natural selection; and finally,

5) Learning and culture matter as much as/and perhaps even more than genetic potential for much of human behavior (although perhaps less so for other animals?). Examples from everyday life include maintaining our weight despite evolutionary pressures to ingest fat, sugar, and salt; risking our own lives to assist those who aren't related to us like first responders do; and not adhering to medical advice even if this risks our own lives and thus our mating potential, among numerous other examples).

I certainly accept that not all human behavior is the result of learning and culture but rather an interaction between genetic potential and experience. So does this make me an evolutionary psychologist without me even knowing it??!

In challenging you to respond to my list, I begin with consideration of David Sloan Wilson's *Evolution for Everyone* (2007) in which he makes the claim that the evolutionary perspective is a powerful way to understand the world in general and the interests and concerns of humans [in particular]; a perspective that can explain shyness and boldness in fish, egg-laying in birds and human gossip. He even presents that result of a chicken demonstration [pertaining to the ultimate liabilities to the group of having a few dispositionally nasty chickens in the mix] and relates it to workplace productivity! Selecting for/rewarding group traits leads to harmony and health as opposed to selecting for/rewarding individual traits!!! Since it works for egg production, should it work for psychology department faculty productivity? Really? Is this a stretch or do you see this as evidence of evolutionary theory solving real world human challenges?

I received my Ph.D. in experimental psychology in the same year that E.O Wilson published *Sociobiology* (1975) and I remember the enormous criticism he faced from Stephen Jay Gould, among others (Allen, 1975). Gould "did pull back his criticism" later perhaps worried that his attack could harm Darwinian Theory (Bethell, 2001). But the issues in his initial attack resonated for a long time in our field. Is evo psych just a modern version of sociobiology?

It is unlikely that any thinking academic could dispute the influence of evolution on human physical development or even on some aspects of modern human behavior. My hesitations about a full acceptance of the EvoS perspective are not political: I accept that some sex differences might have biologically evolved (although these small gender differences are likely shaped by culture and experience). I am very familiar with the groundbreaking oxytocin literature postulating the likelihood of fight and flight versus tend and befriend stress reactions in men and women (Taylor, 2000), toy preferences in even very young children (Jadva, Hines, & Golombok, 2010), and the reported differences in the behavioral manifestations of depression between genders (Bhatia & Bhatia, 1999).

I also realize that that bad science (evo or otherwise) could be used for bad (personal, political, or social) purposes.

The issue for me is: Show me where and show me how, not after the fact (*ex post facto)*, but in a predictive way, that genes are behavioral destiny for more than just a very few human behaviors. Evo psych has interesting, attractive, and sometimes bizarre explanations for a wide range of human and animal behavior. Sorry. But unless it can predict, for example, which specific situational factors might matter (beyond those that, after the fact, seem to enhance survival and reproductive success), what does it add to the understanding of any human behavior? This is a crucial test of the soundness of any theory and especially important if, as is claimed in a recent paper, (Fitzgerald & Whitaker, 2009) that EvoS should (do they mean "can") remake all of psychology and break down our disciplinary walls.

The last issue for me is, even if I don't accept the EvoS perspective in its entirety, what can I take from this perspective for my class assignments and group discussions?

I look forward to reading your reply.

Your colleague,
Phyllis

Dear Phyllis,

First, let me apologize for taking nearly 3.5 years to respond to this letter! Apparently, these issues require an enormous amount of thought! Thanks also for your approach to this dialogue, which is thoughtful, progressive, and student-oriented. These platitudes are not gratuitously placed here, in fact. They are borne of many experiences I've had with the issue of teaching evolutionary psychology in our department.

I believe your comments are *thoughtful*, because you consider many issues in your discussion, such as how the current evolutionary perspective might relate to conversations that the early structuralists and functionalists who founded our discipline had – along with issues of how the evolutionary perspective can help to bridge the many academic divides that we see in our field.

I believe your comments are *progressive* as the gist of your letter here is about facilitating a better understanding of psychology for the future. The work that's been done on developing EvoS (e.g., Chang, Geher, Wilson, & Waldo, 2011) has been framed as paving the way for a more integrative and powerful future version of academia – one that devalues disciplinary boundaries while it underscores connections among seemingly disparate phenomena that connect due to their shared evolutionary underpinnings.

Finally, I believe that your comments are *student-oriented* as your questions here clearly focus on how we can use all these ideas to help forge a better educational experience for future students – so let's put this as both *student-oriented* and *generative*.

Here are restatements of some of your main points along with specific responses, in hope of advancing dialogue on the front of evolution's place within the future of the behavioral sciences.

1. David Sloan Wilson, father of the EvoS initiative in modern academia (Wilson, 2007), talks about how aggressively prone chickens may help us understand human social behavior – and you ask if I agree that this is a reasonable application. Yes, I do! And here's why:

   Wilson's summary of research on aggressive chickens essentially shows that individual chickens that are relatively aggressive by nature (with genetic tendencies toward this way) may lay more eggs than nicer chickens. However, when a chicken farmer steps back, she will find that a group of nice chickens will yield more eggs (and create fewer problems) than a group of nasty chickens. What's best for the individual is not always what's best for the group. And sometimes variables that lead to behaviors that facilitate group success have heritable routes (as many social behaviors in humans and other species do). So yeah, I do think that the chicken metaphor works very well, actually – and as chair of the department, I like to think that we're trying to create as many academic eggs, so to speak, as we can on the whole! ;-)

2. You ask about the true ability for the evolutionary perspective to lead to novel questions, research ideas, and findings – as opposed to being a fully *ex post facto* endeavor. Fair. Some folks have accused evolutionary psychology of relying fully on "just-so stories" – sort of like "men are aggressive now because, of course, cavemen were aggressive – and that aggressiveness helped cavemen survive and get mates. It had to be like that – and modern behavior of human males now betrays this aggressive-caveman past!" Yeah, this is sort of a caricature of the "just-so story" critique – but this sort of is what it sounds like to me!

   In any case, there is a potential liability to a theory so powerful and elegant (Darwin's theory) that it can "explain everything." So I appeal to an article by Ketelaar and Ellis (2000) – that, by the way, you handed me just months after I started working here! This article argues that the evolutionary perspective has the clear capacity to open new doors to new research questions, research methodologies, and research findings. For instance, Daly and Wilson's (1990) work on homicide has clearly shed light on the importance of genetic relatedness in predicting intra-familial homicide. One famous finding on this front is that step-parents are more likely to commit filicide than are non-step-parents. The evolutionary perspective, focusing on how behavioral patterns that typify our species were selected to facilitate the reproductive success of individuals, explains this finding immediately and clearly. And once some of these basic facts were documented, this research expanded, leading to work on perceptions of paternal resemblance as predictive of paternal investment conducted in hospital maternity wards (see Platek, Burch, Panyavin, Wasserman, & Gallup, 2002), research on experimental manipulations of the "trolley car problem" to see if people

would differentially kill genetic kin compared with others by "pulling a trolley switch" (Garvey, Brosseau, & Jennings, 2012), and much more. In fact, research from various methodological angles (some experimental, some physiological, some cross-cultural, etc.) has really followed on Daly and Wilson's (1988) work – leading to, in my mind, an exemplar of theoretically grounded and methodologically valid research.

3. Finally, you ask, "The last issue for me, is even if I don't accept the EvoS perspective in its entirety, what can I take from this perspective for my class assignments and discussions?" Good question! Well, I think it's useful for students to know what the evolutionary perspective actually is, first off! Many students come to me with very misinformed takes on the evolutionary perspective, believing, for instance, that this perspective is somehow all about the human "desire" to create a super-species – or the misinformed idea that evolutionists believe that what is documented as natural represents how things "should" be in some moralistic sense (see Geher, 2006).

   So regardless of how strongly one endorses the EvoS perspective in the behavioral sciences (I don't necessarily expect everyone to drink as much of the Kool Aid as I have ;-) ….), having well-trained behavioral scientists teach the basics accurately to students will at least help students have a clear sense of what this perspective is – which will allow them to help forge their own understandings of what it means to be human.

   I also think that, as evidenced in this dialogue, this perspective naturally leads to much in the way of discussion and dialogue – and, of course, incorporating all this into one's teaching in the behavioral sciences, when done right, should lead to student growth and development – and isn't *that* why we're really in this business??? (That's a loaded question: I know each of us well enough to know that we both answer YES to this question!)

In sum, thank you for starting this dialogue – which I believe represents the kind of progressive and open conversation about the evolutionary origins of human behavior that students in the behavioral sciences can benefit from. I've appreciated the many years we've had of such conversations, and I look forward to continuing this dialogue in the future.

Genuinely, Your Colleague from Down the Hall in JFT,
Glenn

Post-script: We conceived these letters as stimuli to promote a dialogue – and we look forward to others joining our conversation.

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