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David J. Buller  
*Northern Illinois University*

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DeFreuding Evolutionary Psychology:

Adaptation and Human Motivation

DAVID J. BULLER

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## **DeFreuding Evolutionary Psychology: Adaptation and Human Motivation**

DAVID J. BULLER

Symons claims that the “potential contribution of Darwinism to psychology does not lie merely in assigning ultimate causes to psychological mechanisms” (1987b, p. 143); rather, by understanding the evolution of the human mind, we will “be aided in understanding its nature” (p. 121). Elsewhere he writes that “an evolutionary view of life can shed light on psyche, which *eludes us because it is us*” (1979, p. vii; emphasis added). This goes well beyond the idea that understanding the evolution of the mind will enable us to infer its internal dynamics. It also conveys the Freudian legacy that our “manifest” image of human motivation is largely a veneer of illusion concealing the truth about the “latent” motives that actually cause us to behave as we do. Indeed, Symons claims, “Darwinism’s most significant contribution to psychology may lie in its potential to shed light on these goals, wishes, purposes and desires — these mechanisms of feeling that motivate human action” (1987b, p. 131). For, although commonsense “has proved to be a reliable guide to reasoning about the design of perceptual mechanisms,” when it comes to the nature of human motivation “the most fertile hypotheses are likely to come from imaginations informed by Darwinism” (p. 131). Informed by these Darwinian imaginations, evolutionary psychology will penetrate the veneer of our manifest image of human motivation and reveal a latent image of a psyche consisting of “emotional/motivational mechanisms, to recognize and look after ... reproductive ‘interests’” (1979, p. 308).

This picture of evolutionary psychology coexists uneasily in the literature with occasional explicit denials that evolutionary psychology reveals the nature of human motivation. As Daly and Wilson put it (1988, p. 7):

Evolutionary psychology is not a theory of motivation. No one imagines that genetic posterity (fitness) is a superordinate ‘goal’ in any direct sense.... The concept of natural selection explains behavior at a distinct level complementary to the explanations afforded by motivational theories.

Such denials are peculiar; for, like this passage from Daly and Wilson, they all deny that evolutionary psychology trades in motivational theories by denying that it supposes humans to have a *single* unconscious motive with *inclusive fitness* as its *direct* goal (see also Barkow, 1989, p. 112 n. 4; Ellis, 1992, p. 284; Buss, 1995, p. 10).<sup>1</sup> But it is not at all uncommon to find evolutionary psychologists postulating unconscious motives whose goals pertain to specific aspects of social competition and reproductive success — that is, a *group* of unconscious motives with inclusive fitness as their *indirect* goal. Indeed, in this respect explanatory practice in evolutionary psychology frequently violates the explicit denials that evolutionary psychology is a source of motivational theories. And, when it does violate the denials, evolutionary psychology presents itself as offering a picture of human motivation that will replace our commonsense manifest image and provide us with deeper understanding of ourselves.

I will argue that evolutionary psychology is not, and should not be seen as, a source of insight into the latent motives that drive human behavior — that its explanatory function is not, and should not be seen as, that of replacing our manifest image of human motivation with a latent image. To use evolutionary considerations to infer the hidden dynamics of the mind in this way is, to turn a phrase of Symons’ (1992) against him, a “misuse of Darwinism in the study of human behavior.” But I will *not* be claiming that there are *no* hidden dynamics in the mind, that our commonsense manifest image is a complete account of the mind. Rather, I will only be arguing against a particular way of portraying the mind’s hidden dynamics. So let me clarify this issue before moving on.

Consider first what I will call *personal psychology*, which explains behavior by appeal to the full range of thoughts, motives, knowledge, and emotions that we attribute to *persons* in our

daily lives.<sup>2</sup> The paradigm use of personal psychology is to explain behavior in terms of conscious states; but when we insist on a personal psychological explanation of someone's behavior even though they sincerely disavow possessing the motives and beliefs that feature in the explanation, what I will call the *personal unconscious* gets postulated. For example, we may insist that Pat is jealous of Kim's flirtation with Leslie although Pat is not aware of it, the jealousy getting postulated as an unconscious state that is causally efficacious in controlling Pat's behavior. Explanations in terms of the personal unconscious trade in precisely the same types of state, with precisely the same types of content, as explanations in terms of conscious personal psychology; both trade in state attributions such as "Sue is afraid of the dark" and "Sam wants more attention from his father." Because of this, explanations appealing to the personal unconscious make it appear that there is another *person* "in there," with their own motives and beliefs, for whom "I" am merely a front. And when someone comes to accept an explanation of their behavior in terms of personal unconscious motives, they come to see themselves as having been mistaken about their *true* motives — to see that other person "in there" as who they *really* are. Acceptance of attributions of personal unconscious motives thus leads to a new sense of self, a closer identification with that "other person" than with the previously avowed motives.

Contrasted with personal psychology is *subpersonal psychology*, which is concerned not with explaining a person's behavior, but with explaining the functioning of the individual psychological mechanisms that compose the human mind, such as those involved in parsing sentences of our native language (see Dennett, 1987). Of course, none of us are consciously aware of the subpersonal cognitive processes involved in, for example, estimating depth from binocular two-dimensional retinal displays or parsing a sentence of our native language. So these processes are in a straightforward sense unconscious, constituting what I will call the *subpersonal unconscious*. The information deployed in subpersonal unconscious processes, however, is not the sort of information that figures in the contents of personal psychological states (e.g. *that* the orange juice is in the refrigerator); rather, it is information about texture gradients, the angles subtended by the retinas, and so forth. Such information is *subdoxastic*,

“inferentially isolated” from the sorts of information that figures in the contents of the conscious motives and beliefs of personal psychology (Stich, 1978). Thus, although explanations in terms of the subpersonal unconscious do provide us with new insight into the hidden workings of the mind, they never rival or lead to a revision of the attributions of conscious motives that figure in the explanations of personal psychology. Rather, subpersonal psychology complements personal psychological explanations by revealing the substructural functioning of a mind of which personal psychology is true (Dennett, 1987).

There are two ways, then, in which psychological theories can claim to offer us insight into the hidden dynamics of human motivation. On the one hand, a psychological theory can provide us with insight into the subpersonal processes underlying human motivation. In this way, for example, we can learn that increases in female sexual desire around ovulation are a function of peaking levels of estrogens (Adams, et al., 1978). Such subpersonal explanations, however, do not involve postulations of *additional* motives; they merely illuminate the mechanisms underlying the motives of which we are antecedently and independently aware. On the other hand, a psychological theory can construct an image of *personal* unconscious motives that allegedly drive our behavior, which is then offered as an alternative account of human motivation intended to *replace* our commonsense manifest image. This type of explanatory project is designed to show that human motivation is not what it appears, that our manifest image is mistaken and that we are actually driven by motives that are not apparent to us. A classic example of this is psychological egoism, according to which all manifestly altruistic motives are just a disguise for the latent selfish motives that are the true causes of behavior. Now, when evolutionary psychologists employ “Darwinian imaginations” to “shed light on” human motivation they are engaged in this latter type of explanatory project, and it is this to which I will object in what follows. Thus, my arguments will not be directed against any explanatory appeals to subpersonal processes underlying human motivation; for the subpersonal unconscious is a respectable staple of the cognitive and brain sciences, and there is every reason to expect that these sciences will teach us a great deal about the subpersonal unconscious processes underlying

human motivation. But this is radically different from teaching us that our manifest image of human motivation is mistaken. In what follows, then, I will argue that evolutionary psychology is not, and should not be seen as, a source of theories about *personal* unconscious motives. With this in mind, I will now proceed to use the expression “unconscious motives” as an abbreviated reference only to *personal* unconscious states.

To see how some evolutionary psychological theorizing has constructed a latent image of human motivation by postulating unconscious motives, it is important first to distinguish different levels of description in evolutionary psychology (see Buss, 1995, pp. 2-5). At the most general level, psychological mechanisms are described as adaptations that enhanced fitness in the *environment of evolutionary adaptedness*. At a slightly less general level, the ecology of the environment of evolutionary adaptedness is taken into consideration in order to identify specific adaptive problems that psychological mechanisms are described as having evolved to solve. These adaptive problems are, to put it roughly, the *components of fitness* for the human species. For example, one component of fitness in the environment of evolutionary adaptedness was that of successful intrasexual competition, “besting members of one’s own sex to gain access to desirable members of the opposite sex” (Buss, 1991, p. 465). At an even more specific level, adaptive problems are analyzed into subtasks, the solutions to which constitute solving the adaptive problems identified at the level above. Solving the problem of intrasexual competition, for example, required “acquisition of resources required by a potential mate” and “successful courtship of the potential mate” (Buss, 1991, p. 465). Finally, specific descriptions can be derived from the task analysis about how evolved psychological mechanisms function under specified input conditions, where the input conditions characteristic of contemporary environments are of particular interest.

Now, while it is true that no evolutionary psychologist postulates that humans have a desire for inclusive fitness *per se* (the most general level of description above), some frequently employ evolutionary considerations to postulate unconscious motives with *components of fitness*

as their goals. For example, Nesse and Lloyd write: “Psychodynamic psychologists and psychiatrists may find in evolutionary psychology new possibilities for a theoretical foundation in biology” (1992, p. 601). “For instance,” they continue, “Freud’s emphasis on the sexual origins of human motivation as reflected in the concept of ‘libido’ is remarkably congruent with the evolutionary psychobiologist’s recognition of the crucial importance of reproductive success to human motivation” (p. 619). Barkow concurs that “your conscious *and unconscious* goals presumably are linked to the kinds of activities that would have tended to enhance the fitness of your ancestors” (1989, p. 112; emphasis added). Such goals are to be defined as “evolutionary functions” (p. 113) that “are rather clearly linked to inclusive fitness” (p. 110), and they would include “not merely having sex, but attracting mates who, in terms of the differing fitness interests of the sexes . . . , are likely in effect to enhance one’s genetic fitness” (p. 110). And, in their luridly fascinating work on human sperm competition, Baker and Bellis write, “unconscious programming is actually likely to be a more accurate indicator of adaptive function than is conscious rationalization” (1995, p. 185). Thus, when they discovered that women are more likely to engage in extra-pair copulations during ovulation than at any other time in their menstrual cycle (pp. 160-166), they were led to interpret the desire for sex with the extra-pair partner as merely the conscious manifestation of the unconscious motive to harvest an ejaculate with better genes than those contained in the primary partner’s ejaculates (pp. 184-185; see also Baker’s (1996) popularization of their work, which is rife with such attributions of unconscious motives).

Even Daly and Wilson, in violation of their own claim, appeal to unconscious motives. In a critical discussion of Freud, they fault Freud not for his theory of the dynamic unconscious, but for having gotten its dynamics wrong. A young boy’s conflicts with his father are due not to unconscious sexual jealousy over his parents’ sexual relationship as per Freud’s theory of the Oedipus complex, they argue, but to a desire to postpone as long as possible the addition to the family of a sibling competing for parental resources (1988, p. 115). They derive this conclusion



from Trivers' (1974) theory of parent-offspring conflict — a clear case of using evolutionary theory to formulate motivational hypotheses.

Another telling instance in Daly and Wilson occurs in their discussion of infanticide (1988, chap. 3). On the basis of a cross-cultural analysis, they argue that infanticide is virtually always committed under circumstances that enhance parental fitness — for example, the murdered infant is not viable (so it would be an undue drain on parental resources that would more efficiently be invested in, or saved for, other offspring), the parent lacks the resources to rear the child (so attempting to rear it might jeopardize future reproductive potential), or a husband kills a child his wife bore from an extra-pair copulation. Daly and Wilson claim to find just one clear violation of the rule that infanticide enhances parental fitness. In Yanomamö culture, it is taboo for a woman to have sex from the time of discovered pregnancy until the completion of weaning; so, in order to sooner resume a regular sex life, some young Yanomamö couples committed infanticide. Finding it so paradoxical that the desire for sex itself could counter reproductive interests in this way, Daly and Wilson claim that this motive is actually inconsistent with predictions of evolutionary theory (p. 58). But this can only appear paradoxical if it is assumed that the desire for sex is a subordinate motivational goal to the superordinate motivational goal of reproduction. If, instead, sex is seen as a *motivational end* in itself, which merely *functions on average* to promote reproductive success without (always) being motivationally subordinate to it, it is not surprising that people will pursue the motivational end wholly detached from its evolutionary function. Indeed, once the motivational genie is let out of the bottle, it has the power to call the shots for itself.

Unconscious motives work their way into evolutionary psychological theorizing in other subtle ways. The concept of a *Darwinian algorithm*, as typically articulated, requires the tacit postulation of unconscious motives whose goals are components of fitness. According to the standard articulation, the theory of evolution by natural selection “defines adaptive information processing problems that the organism must have some means of solving,” and psychological

mechanisms evolved to deal with these problems (Cosmides & Tooby, 1987, pp. 284-285; cf. Tooby & Cosmides, 1989, pp. 40-41). The input to an evolved psychological mechanism “specifies to the organism the particular adaptational problem it is facing,” and a Darwinian algorithm is a decision procedure that transforms this input into a behavioral output that “solves a particular adaptational problem” (Buss, 1991, p. 464 n. 2; cf. Cosmides & Tooby, 1987, p. 286).

Discussions of Darwinian algorithms tend to ignore motivational goals and to focus exclusively on the *cognitive* processes involved in solving adaptive problems (the extraction and processing of information from the environment). But the mental causation of behavior requires not only cognition, but also motivation. Neither information-bearing states nor motivational states cause behavior in the absence of the other; for, to put it crudely, an organism with information but no motivation has nowhere to go, and one with motivation but no information has no clue how to begin getting there. In addition, the mental causation of behavior requires that information-bearing states be *about motivational goals*, that the contents of information-bearing states match up appropriately with the goals of motivational states. If one has reliable information about how to obtain X, but lacks motivation to obtain X, having instead only motivation to obtain Y, the information about how to obtain X will fail to cause X-directed behavior (unless one also believes that obtaining X will result in obtaining Y). So, in order for a Darwinian algorithm to actually produce a behavioral solution to an adaptive problem, an individual must possess some motivational state whose goal is (roughly) the solution of that adaptive problem.

To illustrate, research has shown that on average across cultures heterosexual women prefer as long-term mates men that are loyal and have access to resources essential to child rearing (Buss, 1994, chap. 2). But, once in a stable relationship with such a man, women appear to employ a single, different criterion in choosing an extra-pair sex partner: a low degree of bodily asymmetry, which is a sign of heritable developmental stability (Gangestad & Thornhill,

1997). And, it is typically assumed, women have extra-pair copulations with men with low asymmetry during fertile periods of their cycles in order to obtain superior genes for a child that can then be reared on the secured resources provided by the cuckolded long-term mate with inferior genes (Buss, 1994, p. 90). So suppose that, in choosing partners with low asymmetry, women employ a Darwinian algorithm for extracting information about male bodily asymmetry, performing cross-male comparisons of asymmetry, and arriving at a decision about which potential partner has “good genes.” In order for this information to result in actual behavior, it must be accompanied by a motivational state directed toward achieving *the very thing* that the information is about — in other words, by a motive to have a sex partner with “good genes.” If a woman has no motivation to have sex with a man with “good genes,” no amount of information about the genetic quality of potential partners will result in sexual behavior directed toward them; for, in the absence of an appropriately contentful motivational state, the information-bearing states will not interact with motivational states in such a way as to cause behavior.

A few passing comments can be found that seem to acknowledge the postulation of such unconscious motives driving Darwinian algorithms. For example, Buss writes that “the major goals toward which humans direct action” are “problems that historically had to be solved to enable reproductive success” (1991, p. 484). He continues: “Although there exists substantial variability in how individuals *frame* their goals,” evolutionary theory can illuminate “the underlying species-typical goal structure” within the human mind (p. 485; emphasis added). In a Freudian vein he adds, “nothing in an evolutionary perspective requires that humans be aware of” this underlying goal structure (p. 470). But, if the evolutionary perspective leads to postulating motives to secure a mate with “good genes,” for example, it is trading almost exclusively in goals of which humans are *not* aware. Symons provides an example of this when he describes “one mental mechanism for assessing sexual attractiveness as a rule that specifies, ‘detect *and prefer* the population composite’” (1987a, p. 118; emphasis added).

Postulations of unconscious motives such as these paint a picture of humans as motivated to achieve maximal reproductive success and as continually calculating the best means of achieving it. But such explanatory appeals to unconscious motives directed at reproductive success (or other components of fitness) are problematic, and for the very reasons that evolutionary psychologists have criticized sociobiology. Sociobiology tended to view humans as “inclusive fitness maximizers.” There are two problems with this view. First, it is empirically inadequate; for human behavior too often fails to promote inclusive fitness. As Buss says: “If men had as a goal the maximization of fitness, then why aren’t they all lined up to give donations to sperm banks, and why do some individuals decide to forgo reproduction entirely?” (1995, p. 10). Such examples, of course, can easily be multiplied. But this gross empirical inadequacy is merely a symptom of a second problem, which Buss calls the *sociobiological fallacy*; for viewing humans as fitness maximizers “conflates a theory of the origins of mechanisms (inclusive-fitness theory) with a theory of the nature of those mechanisms” (p. 10). Evolutionary psychology has presented itself as free of these difficulties in virtue of seeing humans as *adaptation executors*, rather than fitness maximizers, and seeing psychological mechanisms as adaptations to specific problems in ancestral environments. Behavior that fails to maximize fitness is thus explained as produced in response to contemporary environments by psychological mechanisms that are adapted to ancestral environments. So, the story goes, human sexuality was formed by natural selection well before the appearance of sperm banks and the wealth of contraceptives available at the local pharmacy; and that is why human sexuality doesn’t necessarily lead directly to reproductive success within contemporary cultural environments.

But, when evolutionary psychology appeals to unconscious motives whose goals are components of fitness, it succumbs to the same objections that Buss levels against sociobiology. Simply replacing the single goal of fitness maximization with a group of goals related to components of fitness does not make the problems disappear. For, if we have unconscious motives for reproductive success (for lots of children by mates with “good genes,” for example ),

then *given our unsurpassed intelligence* we should be more effective in achieving our unconscious goals than we are. At the very least, we should be *unconsciously* achieving our unconscious goals — as per the suggestion by Baker and Bellis that a “man who ‘accidentally’ slips out of a condom, leaving it in the vagina full of sperm” is following unconscious programming in pursuit of the unconscious goal of reproduction (1995, p. 185). If there are such unconscious programs for pursuing unconscious motives, however, it is a mystery why they do not lead to more consistent achievement of our unconscious goals of reproductive success. Why don’t men “accidentally” slip out of condoms more often than they do? Why don’t women forget to take their pills, or improperly place their diaphragms, more often than they do?

Since the standard view is that evolved psychological mechanisms are *domain-specific modules*, responsive only to highly specific forms of environmental information (see Cosmides & Tooby, 1987), it could be argued that, when the environment does not provide sufficient unambiguous cues of the sort to which psychological mechanisms are responsive, they will not function effectively in achieving our unconscious goals. But there are well known reasons why the mind cannot consist solely of domain-specific mechanisms; there must be some domain-general “central systems” that interface with the modules (see Fodor, 1983, pp. 101-103). Thus, the failure of a module to achieve the goal it evolved to achieve wouldn’t exclude the possibility of domain-general processing taking over to achieve that goal.

Consistent failure to achieve our unconscious goals, then, requires that the mind be constructed in such a way that unconscious goals are concealed from domain-general processing. But then it’s a mystery why such a mental architecture would have been favored by natural selection over an architecture in which domain-general processing had greater access to information about the success rate of the functioning of the modules and that passed control to domain-general processing when modules failed to achieve their goals. Evolutionary psychologists have argued persuasively that there are definite adaptive advantages to having domain-specific modules dedicated to stable and recurrent problems (Cosmides & Tooby, 1987;

Tooby & Cosmides, 1989). But the most those arguments show is that an advantage would accrue to an architecture in which the *default assignment* of solving adaptive problems fell to dedicated domain-specific mechanisms. If those mechanisms ever persistently failed to achieve the goals for which they were designed, an architecture that passed control to domain-general processing to figure out how to achieve those goals would surely have been favored by natural selection. Of course, one could argue that the necessary mutations never arose to build such an effective mental architecture. But this response would be grossly *ad hoc* given the strong adaptationism that informs *all* theorizing in evolutionary psychology; so this response is not available to your average evolutionary psychologist.

Besides, we needn't be driven to such speculative lengths by the failure of our behavior to more successfully satisfy our putative unconscious motives for reproductive success. For there is a far simpler explanation of this failure: we possess *no such unconscious motives*. The far simpler explanation is that human motivation is what our commonsense manifest image takes it to be. That is, we are motivated by desires for sex and love, by loyalty to loved ones, and a powerful concern for the welfare of our children — not by desires for reproductive success. A woman engaging in extra-pair copulation during ovulation is motivated by desire for her lover, period — not *at any level* by a desire to harvest “good genes.” Not only is this explanation simpler, but it avoids the fallacy involved in postulating motives directed at reproductive success. For to attempt to infer the latent nature of human motivation on the basis of evolutionary considerations is to recommit the sociobiological fallacy of misconstruing a theory of the *origins* of the human mind as a theory of its *nature*. Simply replacing sociobiology's single motivational goal of fitness maximization with a group of goals related to reproductive success does not immunize evolutionary psychology against this fallacy; it merely relocates the source of infection. So, in order to avoid this fallacy, I suggest that we take literally Daly and Wilson's (explicit) claim that evolutionary psychology is not a theory of motivation, which in turn involves rejecting the idea that evolutionary psychology will inform us of the latent psychology beneath our manifest psychological image.

Now, I have on offer both a diagnosis of and a cure for the temptation to view evolutionary psychology as a source of insight into latent motives directed at reproductive success. I will begin with the diagnosis, of which there are two aspects. First, the evolutionary half of evolutionary psychology views us through the lens of evolutionary theory, which conceives of organisms as “striving” to achieve the adaptive goals of successful survival and reproduction. Nothing in evolutionary theory, however, takes these adaptive goals to be “internal” motivational goals of organisms that cause the “striving.” Rather, adaptive goals are “external,” imposed on organisms by the standards of success in the competition for survival and reproduction without their needing to be aware that they are engaged in that competition. It just so happens that some of them do things that make them more likely than others to be crowned winners of the competition by the process of natural selection. The psychology half of evolutionary psychology views us, independently of evolutionary considerations, as having a mind comprised of “goal-directed mechanisms” (Symons, 1987b, p. 121). When these two halves are joined, and our goal-directed psychological mechanisms are seen as having been “necessarily designed by natural selection” (p. 121), it becomes easy to think that the goals that direct psychological mechanisms from the inside (motivational goals) are the goals of success in reproductive competition (adaptive goals), since natural selection both sets the adaptive goals and designs the psychological mechanisms that achieve them. But it doesn’t follow that psychological mechanisms contribute to reproductive success in virtue of having internalized adaptive goals. We would never be tempted to think that livers contribute to success in the game of reproductive competition in virtue of having internalized adaptive goals; and the fact that psychological mechanisms themselves contain goals should make us no more tempted to suppose that the reason they contribute to reproductive success is that their internal goals are adaptive goals.

Second, all talk of goals involves the teleological expression “in order to” or its equivalents, both in psychological contexts (I went to the freezer in order to get the ice cream) and adaptive contexts (the male lion killed the cubs in order to bring their mother into estrus).

One of the functions of the expression “in order to” is to link goals in a hierarchy — as in “I went to the freezer in order to get the ice cream in order to satisfy my desire for something sweet” or “the male lion killed the cubs in order to bring their mother into estrus in order to mate with her.” Since the expression “in order to” cuts across both motivational and adaptive contexts *and* serves to link goals in a hierarchy, it is easy to link motivational with adaptive goals in a common hierarchy, so that motivational goals appear to be subordinate to, or the *intentional means* to achieving, the superordinate adaptive goals. This kind of mixed hierarchy is explicit, for example, in Barkow (1989, pp. 106-116). Once this point is reached, the Freudian legacy easily comes into play: if an individual is consciously aware only of their subordinate (motivational) goals, their superordinate (adaptive) goals must be unconscious; so their conscious goals are pursued only *in order to* achieve their unconscious goals. In this way, adaptive goals get construed as having *psychological* reality.

But at this point the sociobiological fallacy has been committed: an (adaptive) account of the origins of the mind has been confused with an account of the (motivational) nature of the mind. Or, as Ghiselin once said more simply, “motives have been confused with functions” (1973, p. 965). This confusion stems from a failure to recognize that “in order to” has a different meaning in motivational contexts than in adaptive contexts. Very roughly, saying that I went to the freezer in order to get the ice cream means that a representation of the goal state of getting the ice cream was among the *causes* of my going to the freezer. In motivational contexts, then, “X in order to Y” means that a representation of Y was a causal antecedent of X. But, saying that the male lion killed the cubs in order to bring their mother into estrus means that killing the cubs has the *function* of bringing their mother into estrus, and this in turn means something roughly like the following: killing cubs contributed to the reproductive success of ancestral male lions because it had the effect of bringing the mother into estrus so that the killer male could mate with her. So, in adaptive contexts, “X in order to Y” is functional, meaning that Y is an *effect* of X because of which X contributed to ancestral reproductive success. The idea that evolutionary psychology will inform us of the latent psychology beneath our manifest



psychological image is thus a product of the fallacy of conflating the adaptive function (or effects) of a particular behavior with the motives that cause it.

With the fallacy now diagnosed, I turn to its cure. At a general level, the cure is simple: keep motivational goals and adaptive goals distinct. But this requires revising the evolutionary psychological conception of psychological *strategies*. Currently, the model of theory construction in evolutionary psychology is as follows: identify an adaptive problem, assume the solution of that problem to be the goal of an evolved psychological mechanism, and then work up a Darwinian algorithm for solving the problem (which it is then hypothesized the psychological mechanism executes). Goals, in this picture, are adaptive goals and strategies are procedures for achieving them. But, since Darwinian algorithms can only be in the service of *motivational goals*, and do not operate to directly achieve adaptive goals, they can contribute to achieving adaptive goals only insofar as motivational goals themselves *function* to achieve adaptive goals. Thus, we should see our *motivational goals* as our evolved psychological strategies and Darwinian algorithms as the procedures for pursuing them. In relation to achieving adaptive goals, then, so-called Darwinian algorithms are at best loose *heuristics*.

In this revised picture, humans possess all the familiar motivational goals, which are not merely means to the achievement of other goals, but are the *ends* that we pursue in our actions. Having one of these motivational goals is itself a strategy — a *motivational strategy* — in the competition to achieve adaptive goals (which are not among the goals that *motivate* us). Some motivational strategies, however, no doubt led to greater success than others in achieving adaptive goals in our ancestral population. In such cases of differential success among competing motivational strategies, there will be an adaptationist explanation of why one of the strategies was more successful than its rivals in achieving some evolutionary goal. And, once in possession of that explanation, we can say that people now pursue that motivational strategy *in order to* promote their reproductive interests. But this is not a motivational “in order to.” It is a purely *functional* “in order to” indicating *only* that, among individuals in the ancestral population

pursuing that motivational strategy, the *average ratio* of beneficial *effects* to costs of playing that strategy was greater than the same average ratios among the groups of individuals playing alternative strategies. Thus, evolutionary explanations of our motivational strategies do not complement our ordinary motivational explanations of someone's behavior by postulating additional motives with adaptive goals. Rather, they simply explain why the motives that we manifestly possess constituted more adaptive motivational strategies than any alternative motivational strategies in our ancestral population. Thus, the evolutionary part of evolutionary psychology does not lead us to replace our conception of human motivation with an alternative picture of what "truly" motivates us to behave as we do, it simply informs us of how our manifest motives contributed to the fitness of our ancestors. So, contra Symons, an evolutionary view of life only sheds light on the *ecological area around* psyche; it does not illuminate the previously dark area *within* psyche. This is all evolutionary psychology *can* do if we take literally Daly and Wilson's other explicit claim that evolutionary explanations explain "behavior at a distinct level complementary to the explanations afforded by motivational theories" (1988, p. 7).

To illustrate this alternative picture of evolutionary psychology, consider two contrasting motivational strategies, *jealousy* and *insouciance*. Those playing jealousy suffer extreme emotional duress whenever they detect signs they perceive as indicating that their mate is engaging in or contemplating extra-pair copulations, and this duress motivates "mate retention tactics," actions "typically intended either to cut off a rival or to prevent the mate's defection" (Buss, 1994, p. 126). Such tactics may include "dissuading potential competitors, luring one's mate with positive inducements, or even rendering one's mate less attractive or evocative to competitors" (Buss, 1988, p. 292). Those playing insouciance, in contrast, show total indifference to signs that their mates might be engaged in extra-pair involvements. Other things being equal, the jealousy strategy will result *on average* in more mate retentions than the insouciance strategy, and this in turn will result in the continued investment by the retained mate in current offspring or future reproductive endeavors. So jealousy should lead to greater

reproductive success than its rival motivational strategy insouciance. When this is the case, we can say that people are motivated by jealousy *in order to* protect their reproductive interests. But it is important that we not construe this “in order to” motivationally; that is, it does not function to link jealousy to the superordinate motivational goal of protecting reproductive interests. Rather, it is a purely functional “in order to,” indicating only that the reason jealousy is a successful motivational strategy is that *on average* it has the *effect* of retaining one’s mate and, consequently, promoting one’s reproductive interests. Thus, the evolutionary account of jealousy merely demonstrates why jealousy was favored by selection over its rival motivational strategies among our ancestors.

This picture of the role of adaptationist explanations should be boringly familiar from all of the non-psychological domains of evolutionary theory. From the standpoint of psychologists that have been looking to evolutionary theory for new insights about the nature of the human mind, however, it will appear disappointingly deflationary. But there are three benefits of this deflationary picture of evolutionary psychological explanation, which I would like to sketch in concluding.

First, it brings evolutionary explanations of psychological traits into line with evolutionary explanations of non-psychological traits. In the non-psychological case, we would never explain how some observable trait contributes to fitness by postulating that it has internalized, and now pursues, goals related to reproductive success. For example, when we discover that the kidneys filter metabolic wastes from the blood, we do not explain how this contributes to fitness by attempting to link it with some additional, underlying operation of the kidneys; rather, we simply show the fitness benefits that accrue due to *that very process* of filtering metabolic wastes. It is the Freudian legacy of the dynamic unconscious that tempts us in the psychological case to internalize adaptive goals into the unconscious and then view them as the hidden driving force behind our behavior and reproductive success. But the Freudian legacy should be resisted in favor of a non-psychologically-mediated explanation of how

observable psychological traits succeeded in contributing to fitness in ancestral populations. That is, we should not attempt to explain how some manifest psychological trait contributed to fitness by postulating additional, “hidden” psychological traits or processes; rather, we should explain it in terms of the operation of extra-psychological, ecological factors alone, just as we do in non-psychological cases. The picture of explanation in evolutionary psychology that I have presented here precisely fits this bill.

Second, this deflationary picture of explanation in evolutionary psychology succeeds in avoiding the sociobiological fallacy, since it sharply distinguishes adaptive goals (which figure in an account of the *origins* of the human psyche) from motivational goals (which figure in an account of the *nature* of the human psyche). So there is no special problem posed by the persistent failure of our behavior to satisfy our unconscious motives to achieve adaptive goals, for we simply have no such motives. And the motivational strategies that we do possess need not be perfect or even highly reliable in achieving reproductive success; they needed only to have a higher ratio of beneficial effects to costs than any competing motivational strategies in our ancestral population. This allows a motivational strategy a great deal of room for failure to achieve reproductive success in specific instances.

Third, in spite of these facts, the deflationary picture offered here is nonetheless fully compatible with all existing evolutionary psychological explanations. For, whenever such an explanation postulates an unconscious motive, it will be linked to a manifest motive by the expression “in order to” (or some equivalent), as in “Jane desired an extra-pair copulation during ovulation *in order to* satisfy her desire for an ejaculate rich in ‘good genes.’” Such explanations can be systematically transformed into explanations of the type I have urged simply by reinterpreting this motivational “in order to” functionally. Thus, rather than taking such explanations as linking a manifest motive with a superordinate motive in a common motivational hierarchy, they should be taken as providing a (partial) explanation of the *effects* because of which the manifest motive was favored by selection over alternative motivational strategies in

ancestral environments. So, the above example should be interpreted as an explanation sketch of the following sort: the desire for extra-pair sex during ovulation *on average* had the *effect* of promoting sperm competitions in which the sperm with “good genes” won; so, among women in our ancestral population, the motivational strategy of desiring extra-pair sex during ovulation had a higher average ratio of beneficial effects to costs than any alternative motivational strategies, and thus led to the greatest reproductive success. In this way, all references to unconscious motives can be purged from evolutionary psychological explanations, while still leaving them fully evolutionary explanations of psychological traits. Then it’s only a matter of determining whether such adaptationist evolutionary psychological explanations are *true*.<sup>3</sup>

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## Notes

1. Oddly, Symons himself offers such a denial, but related to a specific explanatory case: “it would be inaccurate to infer that a furious, cuckolded husband only imagines himself to be angry at his wife’s sexual peccadilloes when, in some more profound sense, what he is ‘really’ doing is promoting the survival of his genes” (1979, pp. 306-307).
2. One might be tempted to think of personal psychology as what is commonly called “folk psychology.” But I want to resist this identification. For folk psychology is typically taken to consist of a set of lawlike generalizations formulated over the intentional states of *belief* and *desire*. But our everyday explanations of behavior are very seldom formulated in terms of beliefs and desires. Indeed, we generally explain behavior in terms of motives, emotions, character traits, and moods. I want to include all these in personal psychology — to include the full range of explanations in terms of love, lust, envy, jealousy, irascibility, and so forth — regardless of whether such states are fully analyzable in terms of the intentional states of belief and desire. If they are, then personal psychology is just folk psychology; if they are not, and I think they are not, then folk psychology, if there is such a thing, forms only a proper part of what I am calling personal psychology.
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