

Evolutionary Psychology and Inequality

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Darwin foresaw that evolutionary theory would transform the science of psychology, but progress in that direction was glacial for more than a century and large parts of psychological science remain untouched by evolutionary insights. One topic requiring the attention of Darwinians is the psychology of inequality, relative standing, and relative deprivation. These positional aspects of social life clearly affect important realms of human action, including violence and reproduction, but too little is known about how they are apprehended and work their way into our phenotypes.

Public Significance Statement

Natural selection is intrinsically relative, and it has equipped the human animal with an intense interest in relative position, but despite large literatures on “social comparison processes” and “relative deprivation”, psychologists are more likely to disparage sentiments like “envy” than to study how they develop and function in our lives. An infusion of evolutionary insights would help.

Keywords: inequality, relative deprivation, violence


More than 50 years ago, the great evolutionary biologist George C. Williams posed a rhetorical, but rather wistful, question: “Is it not reasonable to anticipate that our understanding of the human mind would be aided greatly by knowing the purpose for which it was designed?” (Williams, 1966, p. 16). The proposition that evolutionary biology is a foundational science for psychology should not be controversial, but it is a truth that only a minority of psychologists have taken on board.

When the late Margo Wilson (1942–2009) and I were invited to contribute a chapter to *The Adapted Mind*, we were immersed in studies of marital conflict and violence, so that is what we wrote about. In playful homage to neurologist Oliver Sacks’s famous case study, “The man who mistook his wife for a hat” (Sacks, 1985),

we entitled our chapter “The man who mistook his wife for a chattel” (Wilson & Daly, 1992). However, our topic was anything but playful. It was men’s inclination to construe women as property, which Margo dubbed “male sexual proprietariness,” and which, we proposed, can only be understood as an adaptation in Williams’s sense of the word. That 1992 essay is still, by a wide margin, the most frequently cited of the 30 chapters that Margo and I coauthored for edited volumes over the course of almost 30 years, and its frequency of citation surely owes a great deal to the general influence of the volume in which it appeared.

The publication of *The Adapted Mind* was a milestone in the campaign to Darwinize psychology, but it was hardly the first shot across psychology’s bow. When was “evolutionary psychology” born? One defensible answer is 1872, the year in which Charles Darwin published *The Expression of the Emotions in Man and Animals*. Oddly, however, although Darwin’s treatise was both evolutionary and psychological, it was rather thin on what we would now expect of a Darwinian analysis, namely

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interpretations of the emotions and their expressions as adaptations that made specific contributions to fitness in ancestral environments, and for the next century and more, such Darwinian analyses of the emotions have been only slowly and fitfully forthcoming. Noteworthy examples are Trivers (1971) and Nesse (1990).

I was trained in animal behavior in the 1960s, and I twigged to adaptationism in graduate school (Daly, 2015). The first paper that I submitted for publication was a critique of a body of psychological research in which rats and mice were being used as “model organisms” despite the fact that their adaptations as small prey animals made them ill suited to that role (Daly, 1973). Before finding a home in the *British Journal of Psychology*, the paper was rejected at two top journals, in each case on the basis of a hostile review by a prominent researcher whose ox I had gored and who was positively self-righteous in his scorn for the claim that species are adapted to their distinct ecologies. (The two reviewers’ identities were undisclosed but easily discerned. One spent a paragraph fulminating against Konrad Lorenz, whose name I had not mentioned.) Do young evolutionary psychologists still encounter hostility from pre-Darwinian eminences in their areas? I would like to think they do not, but I am sure they often do.

The fact that leading psychology journals now include evolution-minded papers in every volume is undeniable evidence of progress, but that progress has been slow and stuttering at best. Evolutionary ideas have occasionally graced their pages for decades—See, for example, Rasmussen (1981) for a surprisingly modern adaptationist proposal in the *Psychological Review*—and yet the great majority of what the top psychological journals publish remains untouched by evolutionary insights, even when the topics under discussion cry out for them.

In short, the campaign to transform psychology into a normal branch of evolutionary biology has been underway for much longer than a human life span, and even though its scientific and epistemological supports are unassailable, victory remains elusive. I doubt that the battle will be fully won in another human lifetime, and I lay the blame on forces beyond the discipline of psychology. Prejudicial hostility to evolutionizing is premised on ignorance and will continue to plague psychology and the social

sciences until attaining a basic grasp of evolutionary biology has become an established element of primary school education. Don’t hold your breath.

The Next big Question

Contributors to this special issue were asked, “What is the next big question in evolutionary psychology?” My nomination reflects my research interests: I want evolutionary psychologists to launch a broad attack on how inequality and relative standing worm their way into our psyches.

Income inequality is a powerful predictor of the incidence and severity of a broad range of problems, including violent crime and ill health (Wilkinson & Pickett, 2009). In this highly politicized arena, the defenders of privilege have furiously attacked any suggestion that inequality is a source of society’s problems, but their counterclaims are unequivocally wrong (Daly, 2016). Propaganda to the effect that prevailing levels of inequality foster innovation and economic growth is also manifestly false (Berg, Ostry, Tsangarides, & Yakhshilikov, 2018). That much we know. However, we still know too little about the underlying psychology.

Inequality is an abstraction, not a stimulus, and its effects on human development, behavior, and health are necessarily effects of past inequality. More specifically, they must of necessity be effects of past experiences, but which ones? What does the apprehension of relative deprivation entail? Are personal acquaintances vastly more salient than figures known only through media portrayals? Is the inequality that causes stress, illness, and violence strictly local? Or might it instead be the case that simply knowing that billionaires exist exacerbates dangerous competition? (“Someone’s making out like a bandit and it ain’t me!”) Are the impacts on health and violence mediated through common mechanisms? And at what time lags does inequality act on us? Are the effects of relevant experiences generally discounted with time, or are they largely cumulative? Are there crucial periods of developmental susceptibility? Absolute deprivations experienced by our mothers before we were born are known to affect us; could there be further prenatal effects of relative deprivation? Questions such as these have

scarcely yet been posed, much less fully answered.

It's not that psychologists have been uninterested in social comparison and relative deprivation. Social psychologists have spent careers studying these things, but their efforts have largely bypassed the important questions. According to Google Scholar's algorithms, Leon Festinger's "theory of social comparison processes" (Festinger, 1954) has been cited well over 20,000 times in the 65 years since its publication. Disappointingly, however, the focus of almost all that work is the evaluation of one's opinions by comparing them with those of others. Neither Festinger's original paper nor a recent meta-analysis of its sequelae (Gerber, Wheeler, & Suls, 2018) has anything to say about social comparisons of material circumstances, life prospects, or relative standing. This is remarkable because these are central concerns of real-world social comparison, as anyone can confirm by eavesdropping on conversations in nature. Without an evolution-based understanding of the fundamental agendas of human beings, psychologists sometimes seem unable to distinguish significant realms of thought and action from relative trivia.

Like other social animals, *Homo sapiens* is intensely interested in relative standing and differential access to resources. Why? Because natural selection *is* differential reproduction and has therefore favored relentless attention to differentials in access to the necessities for reproduction. This seems so obvious to evolutionists that it can be hard to imagine the mind-set of pre-Darwinian psychologists and psychiatrists. But the gulf is profound. Envy, for example, is routinely disparaged in the psychological literature as an unfortunate weakness of character to be risen above, at best, and a pathology at worst, rather than being understood as a functional sentiment and motivator. According to one psychiatrist who accepts that a human nature exists and that envy is a component thereof but who is no Darwinian, "Properly identified and managed, a healthy maturation of envy may occur from which successful advances both personally and socially may arise" (Ninivaggi, 2010, p. 2). And what does this healthy maturation entail? The transformation of envy into admiration, emulation, gratitude, empathy, and helpfulness! This sounds disturbingly like authoritarian advice: Get over your resentments and

accept your (lowly) place in the social hierarchy. The implicit advice of social psychologists interested in relative deprivation has typically been scarcely better. Following Crosby (1976), most writers on the topic dichotomize responses to relative deprivation as either constructive and healthy or destructive and pathological. Threats and violence are then consigned to the latter category by definition.

Violence, of course, is not intrinsically pathological, and the costs that it imposes will never be countered if we fail to understand it for what it is. Violence is an evolved capability of organisms pursuing their interests in a world in which interests conflict. Every evolutionist knows this, but a surprising number of experts do not. In the same year in which *The Adapted Mind* appeared, James Gilligan, the director of the Harvard Institute of Law and Psychiatry, proposed that we need to "think of violence as a symptom of life-threatening pathology" (Gilligan, 1992, p. 92). More recently, Adrian Raine (2013), the Richard Perry University Professor of Criminology and Psychiatry at the University of Pennsylvania, has proclaimed that criminals (sic) have "broken brains" in need of repair. Ironically, Raine has long championed the view that criminology must become more biological; the requisite biology is evidently of a sort untouched by Darwinism.

Promising Starts

Some important steps toward an evolutionarily informed approach to inequality have already been taken. In economics, Robert Frank has argued that utility is crucially dependent on one's consumption and prosperity relative to what others enjoy and that the predictive weakness of major economic theories derives largely from neglect of this point, explicitly anchoring his arguments in the considerations that fitness is itself relative and that the evolution of subjective utility must track expected fitness (Frank, 1985, 1999, 2011).

Evolutionary psychologists have made some initial headway regarding the proximate causal effects of unequal rewards (e.g., Mishra, Barclay, & Lalumière, 2014; Mishra, Son Hing, & Lalumière, 2015; Krupp & Cook, 2018), but more difficult and arguably more important questions concern the developmental effects of inequality. A large literature is concerned with

the reproduction of inequality, that is, with the processes—developmental and otherwise—that disadvantage children who are born poor and thus impede their social mobility (e.g., Palloni, 2006). However, those lacking a Darwinian overview are apt to spin the developmental story purely as one of deficits (e.g., Walker et al., 2011). Evolutionists, by contrast, recognize that behaviors that others disparage as maladaptive, including some forms of criminality as well as sexual precocity and promiscuity, are often better interpreted as making the best of a bad job by adopting a fast life history and discounting a future that is likely to be bleak or unpredictable (e.g., Chisholm & Burbank, 2001; Daly & Wilson, 2005; Krupp, 2012; Nettle, 2010; Pepper & Nettle, 2017; Surbey, 1990). This is an essential insight that opens, but does not yet answer, the difficult developmental questions.

Promising efforts to specify the ontogenetic processes that culminate in alternative life histories are underway (e.g., Del Giudice, Ellis, & Shirtcliff, 2011; Ellis & Del Giudice, 2014), and there is mounting evidence that the subjective experience of relative deprivation mediates links between disadvantage and behavior (Callan, Shead, & Olson, 2011; Mishra & Novakowski, 2016). How exposure to specific measurable aspects of inequality plays into these processes—over and above the effects of exposure to absolute deprivation—remains to be elucidated.

The insight that violence, teenage pregnancy, and short time horizons can represent adaptive rather than pathological responses to disadvantage must not be misunderstood as indicating that relative and absolute deprivation do not, after all, damage people. The rising tide of extreme inequality of wealth and opportunity is an unjust source of misery, shortening lives and leaving broken minds and bodies in its wake. It warrants urgent attention from all the social sciences.

References

- Berg, A., Ostry, J. D., Tsangarides, C. G., & Yakhshilikov, Y. (2018). Redistribution, inequality, and growth: New evidence. *Journal of Economic Growth*, 23, 259–305. <http://dx.doi.org/10.1007/s10887-017-9150-2>
- Callan, M. J., Shead, N. W., & Olson, J. M. (2011). Personal relative deprivation, delay discounting, and gambling. *Journal of Personality and Social Psychology*, 101, 955–973. <http://dx.doi.org/10.1037/a0024778>
- Chisholm, J. S., & Burbank, V. K. (2001). Evolution and inequality. *International Journal of Epidemiology*, 30, 206–211. <http://dx.doi.org/10.1093/ije/30.2.206>
- Crosby, F. J. (1976). A model of egoistic relative deprivation. *Psychological Review*, 83, 85–113. <http://dx.doi.org/10.1037/0033-295X.83.2.85>
- Daly, M. (1973). Early stimulation of rodents: A critical review of present interpretations. *British Journal of Psychology*, 64, 435–460. <http://dx.doi.org/10.1111/j.2044-8295.1973.tb01370.x>
- Daly, M. (2015). On function, cause, and being Jerry Hogan's student. *Behavioural Processes*, 117, 70–73. <http://dx.doi.org/10.1016/j.beproc.2014.07.002>
- Daly, M. (2016). *Killing the competition. Economic inequality and homicide*. New Brunswick, NJ: Transaction Press.
- Daly, M., & Wilson, M. (2005). Carpe diem: Adaptation and devaluing the future. *Quarterly Review of Biology*, 80, 55–60. <http://dx.doi.org/10.1086/431025>
- Darwin, C. R. (1872). *The expression of the emotions in man and animals*. London, UK: John Murray. <http://dx.doi.org/10.1037/10001-000>
- Del Giudice, M., Ellis, B. J., & Shirtcliff, E. A. (2011). The Adaptive Calibration Model of stress responsivity. *Neuroscience and Biobehavioral Reviews*, 35, 1562–1592. <http://dx.doi.org/10.1016/j.neubiorev.2010.11.007>
- Ellis, B. J., & Del Giudice, M. (2014). Beyond allostatic load: Rethinking the role of stress in regulating human development. *Development and Psychopathology*, 26, 1–20. <http://dx.doi.org/10.1017/S0954579413000849>
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140. <http://dx.doi.org/10.1177/001872675400700202>
- Frank, R. H. (1985). *Choosing the right pond. Human behavior and the quest for status*. New York, NY: Oxford University Press.
- Frank, R. H. (1999). *Luxury fever. Money and happiness in an era of excess*. New York, NY: Free Press.
- Frank, R. H. (2011). *The Darwin economy. Liberty, competition, and the common good*. Princeton, NJ: Princeton University Press.
- Gerber, J. P., Wheeler, L., & Suls, J. (2018). A social comparison theory meta-analysis 60+ years on. *Psychological Bulletin*, 144, 177–197. <http://dx.doi.org/10.1037/bul0000127>
- Gilligan, J. (1992). *Violence. Our deadly epidemic and its causes*. New York, NY: Grosset/Putnam.

- Krupp, D. B. (2012). Marital, reproductive, and educational behaviors covary with life expectancy. *Archives of Sexual Behavior, 41*, 1409–1414. <http://dx.doi.org/10.1007/s10508-012-9949-z>
- Krupp, D. B., & Cook, T. R. (2018). Local competition amplifies the corrosive effects of inequality. *Psychological Science, 29*, 824–833. <http://dx.doi.org/10.1177/0956797617748419>
- Mishra, S., Barclay, P., & Lalumière, M. L. (2014). Competitive disadvantage facilitates risk-taking. *Evolution and Human Behavior, 35*, 126–132. <http://dx.doi.org/10.1016/j.evolhumbehav.2013.11.006>
- Mishra, S., & Novakowski, D. (2016). Personal relative deprivation and risk: An examination of individual differences in personality, attitudes, and behavioral outcomes. *Personality and Individual Differences, 90*, 22–26. <http://dx.doi.org/10.1016/j.paid.2015.10.031>
- Mishra, S., Son Hing, L. S., & Lalumière, M. L. (2015). Inequality and risk-taking. *Evolutionary Psychology, 13*. Advance online publication. <http://dx.doi.org/10.1177/1474704915596295>
- Nesse, R. M. (1990). Evolutionary explanations of emotions. *Human Nature, 1*, 261–289. <http://dx.doi.org/10.1007/BF02733986>
- Nettle, D. (2010). Dying young and living fast: Variation in life history across English neighborhoods. *Behavioral Ecology, 21*, 387–395. <http://dx.doi.org/10.1093/beheco/arp202>
- Ninivaggi, F. J. (2010). *Envy theory. Perspectives on the psychology of envy*. Lanham, MD: Rowman & Littlefield.
- Palloni, A. (2006). Reproducing inequalities: Luck, wallets, and the enduring effects of childhood health. *Demography, 43*, 587–615. <http://dx.doi.org/10.1353/dem.2006.0036>
- Pepper, G. V., & Nettle, D. (2017). The behavioural constellation of deprivation: Causes and consequences. *Behavioral and Brain Sciences, 40*, e314. <http://dx.doi.org/10.1017/S0140525X1600234X>
- Raine, A. (2013). *The anatomy of violence*. New York, NY: Pantheon.
- Rasmussen, D. R. (1981). Pair-bond strength and stability and reproductive success. *Psychological Review, 88*, 274–290. <http://dx.doi.org/10.1037/0033-295X.88.3.274>
- Sacks, O. (1985). *The man who mistook his wife for a hat and other clinical tales*. London, UK: Gerald Duckworth.
- Surbey, M. K. (1990). Family composition, stress, and the timing of human menarche. In T. E. Ziegler & F. B. Bercovitch (Eds.), *Socioendocrinology of primate reproduction* (pp. 11–32). New York, NY: Wiley-Liss.
- Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology, 46*, 35–57. <http://dx.doi.org/10.1086/406755>
- Walker, S. P., Wachs, T. D., Grantham-McGregor, S., Black, M. M., Nelson, C. A., Huffman, S. L., . . . Richter, L. (2011). Inequality in early childhood: Risk and protective factors for early child development. *The Lancet, 378*, 1325–1338. [http://dx.doi.org/10.1016/S0140-6736\(11\)60555-2](http://dx.doi.org/10.1016/S0140-6736(11)60555-2)
- Wilkinson, R., & Pickett, K. (2009). *The spirit level. Why more equal societies almost always do better*. London, UK: Penguin.
- Williams, G. C. (1966). *Adaptation and natural selection*. Princeton, NJ: Princeton University Press.
- Wilson, M. I., & Daly, M. (1992). The man who mistook his wife for a chattel. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind. Evolutionary psychology and the generation of culture* (pp. 289–321). New York, NY: Oxford University Press.

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