Recycling, evolution and the structure of human personality

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Abstract

Concomitant with the recent surge in environmental awareness of the industrialized world, social scientists have begun searching for the determinants of recycling behavior. Although the efforts of these scientists – most notably, environmental psychologists – are commendable, they have as yet not isolated the strategies by which long-term recycling can be effectively encouraged. In this article, I comment that by giving proper attention to the evolved structure of human personality, the emerging paradigm of evolutionary psychology may have something to offer those wishing to encourage durable and generalizable recycling behavior.
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0. Introduction

Behavioral scientists recently have started researching the determinants of recycling behavior, following growing environmental awareness and concern of sectors of the industrialized world (e.g., De Young, 1993, 2000). The efforts of these scientists – especially environmental psychologists – are laudable, but these efforts have not yet identified specific strategies for producing consistent and long-term recycling behavior. I argue in this article that by attending properly to the

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evolved structure of human personality, the emerging paradigm of evolutionary psychology may have something to offer those wishing to encourage durable and generalizable recycling behavior.

1. How do we produce long-term, generalizable recycling behaviors?

De Young (1993), an environmental psychologist, reviews in detail what are or would be the most effective means of encouraging humans to recycle. These include, for example, 'information' techniques, 'positive motivational' techniques, and 'coercive motivational' techniques for encouraging recycling behavior. Some of these attempts at behavior modification work better than others (e.g., Yung-Jaan & De Young, 1994; Yung-Jaan, De Young, & Marans, 1995). All these techniques, however, have as a profound deficit the fact that they do not instantiate *durable* and *generalizable* recycling behavior (De Young, 1993). That is, these techniques fail to encourage long-term recycling behavior that is generalized beyond the target recyclable to other, non-targeted recyclables.

Although many useful questions have been raised in an effort to identify the most effective techniques for encouraging durable and generalizable recycling behavior, a key question has yet to be asked: what is the nature of human nature such that it is so difficult to instantiate long-term, generalizable recycling behavior? That is, what is it about the structure of human personality that renders long-term, generalizable recycling behavior so vulnerable to extinction? Following I address briefly the question of the structure of personality.

2. The structure of personality

An important debate within personality psychology has centered on whether personality is more accurately described as relatively more stable or variable over time. Is it the case, as Allport (1931) suggested over seven decades ago, that personality can best be described in terms of the relatively invariant *trait* – "a generalized response-unit in which resides the distinctive quality of behavior that reflects personality" across disparate contexts (p. 368)? Or perhaps personality is best described, as Murray (1938) suggested, at the level of the *need*: "an organic potentiality or readiness to respond in a certain way when certain conditions occur" (p. 23)? Here again we are led to believe that at some level personality is stable, as needs are generally stable (although variably 'latent' or 'activated') over time. Yet Murray, more than Allport, suggests that a fixed personality unit cannot fully characterize the structure of personality; there is also the matter of need activation and relative satiation.

On the other side of the spectrum, various theorists – most notably, Mischel (1968) – have argued that personality is nothing more than a conceptual reification. That is, a given person's behavior is dependent on the context of the moment and, therefore, it makes no sense to speak of 'personality,' *per se*. One's personality is whatever responses are emitted in the particular environmental context. Straddling the fence between these two camps are personality psychologists who argue an interactionist perspective – that personality is both stable and variable over time (e.g., Buss, 1984, 1987, 1992; Kammrath, Mendoza-Denton, & Mischel, 2005; Magnusson & Endler, 1977). That is, that there exist stable architectural units that define a person's personality, but that these units are dependant for their activation on relevant contextual input. Thus, the inter-

actionist perspective argues that there is a basic level at which personality is best described as consistent or stable, but that at a more 'surface' level what we call personality is as variable as the current context. I next extend the range of responses to this debate, and argue that all three positions on the structure of personality have merit.

3. Personality from an evolutionary psychological perspective

Evolutionary psychological meta-theory suggests that the way we think, feel, and behave today can be understood by considering which thoughts, feelings, and behaviors increased the relative survival and reproduction of our ancestors (e.g., Buss, 1995, 2004; Buss, Haselton, Shackelford, Bleske, & Wakefield, 1998; Tooby & Cosmides, 1992). Having certain thoughts, feelings, and behaviors in certain contexts increased an ancestral human's ability to survive and have more offspring than their less successful conspecifics. These offspring had some positive probability of inheriting the genes coding (in concert with relevant environmental input) for the development of the psychological mechanisms that (in response to certain cues) produce that same pattern of thoughts, feelings, and behaviors. These offspring, too, would be expected to be relatively more reproductively successful. And this would be true for their offspring. This process – evolution by natural selection – continues for hundreds of thousands of generations, such that today that pattern of thoughts, feelings, and behaviors guided by the particular psychological mechanisms is species-typical.

Natural selection is thus recognized as the origin of the many special-purpose and domain-specific cognitive decision-rules (psychological mechanisms) that define human psychology and behavior. However, and crucial to this perspective, evolutionary psychology has as a central goal to determine the historical, developmental, and situational forms of contextual input processed by the psychological mechanisms that guide human behavior. Evolutionary psychologists are not 'genetic determinists.' Rather, a key message of evolutionary psychology is that the complex architecture of species-typical, domain-specific psychological mechanisms allows for the tremendous context-dependant flexibility of human behavior. Modern evolutionary approaches aspire to understand – in addition to our species-typical, culturally differentiated, and sex-specific human nature – the ways that individuals differ within species, within cultures, and within sex (e.g., Buss, 1999, 2004; Buss & Greiling, 1999; DeKay & Buss, 1992).

Thus, the architectural unit of personality is the evolved psychological mechanism. But these mechanisms cannot and do not operate in a vacuum. The mechanisms are dependant for their activation on the contextual input to which they have evolved a sensitivity. Thus, personality is relatively stable in the sense of being comprised of a finite set of species-typical psychological mechanisms. At the level of the cognitive, affective, and behavioral output of these mechanisms, however, personality is better described as variable. The most accurate depiction of personality is that it is both consistent and variable – that it is comprised of a finite set of species-typical and domain-specific psychological mechanisms that are activated by relevant contextual input. And because no two individual psychologies will receive and process identical input in an identical manner, individual differences are an important domain of inquiry for evolutionary psychologists. At the same time, we can expect similarities across a group of individuals, to the extent that the ancestors of those individuals historically faced similar classes of adaptive problems over

evolutionary history. On these grounds, we expect sex-differentiated and age-differentiated personality structures, instantiated as the evolved psychological architecture characteristic of men versus women and of differently aged persons (e.g., Buss, 1999, 2004; Buss & Greiling, 1999; DeKay & Buss, 1992).

To sum up, personality is stable over time when considered at the level of evolved psychological mechanisms. Personality is variable over time when considered at the level of manifest output of those evolved psychological mechanisms. What, then, is the relevance of acknowledging the evolved structure of the human personality to effectively encouraging recycling behavior in modern humans? I address these issues next.

4. Recycling and the promise of an evolutionary environmental psychology

For hundreds of thousands of generations, ancestral humans lived life largely in the present. The important everyday concerns of our ancestors included obtaining adequate nutrition, shelter from the elements, and safety from predators and hostile conspecifics. The relatively more long-term adaptive problems of ancestral humans included acquiring and maintaining a reproductively valuable mate, initiating and maintaining mutually beneficial friendships, and gaining entry into influential coalitions (Buss, 2004; Shackelford & Buss, 1996). These 'long-term' problems probably served as such for not more than a few or several years. Conspecific competition, scarce resources, and the ever-present threat of predation weeded out of the human population those individuals that did not successfully solve these adaptive stumbling blocks. Those who failed to solve these problems are not our evolutionary ancestors. Rather, current human psychology is now comprised of the numerous, evolved, species-specific and universal psychological mechanisms that guided our ancestors to successful survival and reproduction (e.g., Buss, 1995, 2004; Buss et al., 1998; Tooby & Cosmides, 1992).

It has only been in the last few thousand years – a split-second in evolutionary time – that the human population has exploded from several thousand to several billion. Similarly recent is the exponential sophistication of human technology: a few thousand years separates the wheel and the super-conducting super-collider. The exceptionally recent explosion in human population and in technological advances has proven to be ecologically devastating to our planet: Our country-sides are mangled with dumps and landfills; our oceans are littered with the industrial run-off of innumerable toxins, in addition to tons upon tons of human-generated garbage. Our planet is sick ecologically, and surely will only grow sicker, should we fail to alter our wasteful and toxic ways. Among several alternatives, recycling offers a partial solution to a sub-set of our planet's health problems. If we know that our planet is slowly being destroyed by our excessive and wasteful practices, and if we know that recycling of recyclable materials can significantly curb this degenerative process, why do not we recycle? Why cannot we recognize and appreciate the impact that our recycling could have in ensuring that our children and our children's children inherit from us an inhabitable biosphere?

The current structure of human personality – having evolved as it did over thousands of generations characterized by problem-solving focused largely in the present – is inherently unprepared to consider effective solutions to a problem that, by definition, extends thousands of generations into the future. That human nature has evolved a present-centered conceptualization

of problem-solving, however, does not mean that we cannot act to ensure that our descendants have a place to call home. What it does mean is that environmental psychologists – and any of us who wish to curb our rapid destruction of our planet – must be conspicuously aware of this structural feature of evolved human personality in attempting to instantiate, for example, durable and generalizable recycling behavior.

There are, of course, an exceptional few who have developed at least a partial appreciation of the dire consequences of our wastefulness and pollution for the generations to follow. However, if humans cannot be counted on to adopt a futuristic problem-solving focus, we must seek alternative means to encourage long-term and generalizable recycling behavior. Following I offer just one potential alternative, generated from an evolutionary psychological perspective.

5. Social pressure as a means of encouraging long-term, generalizable recycling behaviors

One of the most pressing adaptive problems for our ancestors was that of successful social integration into the local population (Buss, 2004; Buss & Kenrick, 1998; Shackelford & Buss, 1996). So, too (by evolutionary descent), does the desire to integrate into and remain successfully participative in the local population represent one of the most important concerns for modern humans. Social pressure by valued others in the local population to adopt long-term recycling behaviors may prove to be a useful means of encouraging mass durable and generalizable recycling behavior. If a few especially valued or powerful individuals engaged in consistent recycling, and pressured their fellow community members to do likewise, this community could then encourage, through social pressure, the adjacent community to adopt consistent recycling behaviors, and so on. The key would be to start small and aim big.

There are numerous questions that must be addressed and answered if social pressure could ever serve to promote durable and generalizable recycling behavior. For example, how is social pressure to function in the typically neo-local organization of the urbanized, industrial world? What should the consequences be for those who shirk social pressure and opt out of recycling? How would we regulate who will benefit in the short-run from the resources saved via mass recycling efforts? Are these saved resources to be distributed evenly back to the community members? Is even redistribution possible in a society operating on capitalism? Is it possible in any human society? What is 'social pressure,' anyway? Does it include legal pressure? Religious pressure? Educational pressure? All of these, plus additional sources of mass pressure?

These are all legitimate questions for future research. My key comment here is that these and other research programs be conducted with appropriate attention to the evolved nature of human nature – that is, with an understanding that encouraging durable and generalizable recycling behavior will never cease to be an uphill battle with an evolved human psychology and personality built for assessing and solving problems relevant to the present and only the immediate future.

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