

Drug Theory and cognitive development is categorized as a Tool Theory, yet it seems pretty simple to suggest a way in which it is the opposite way around. The authors seem far too eager to “scoop up” all the explanatory processes and mechanisms from all areas of behavioural science in terms of their two metaphors.

Second, there are many characteristics of a good theory apart from its heuristic appeal: parsimoniousness, consistency, validity, and so forth. A good theory both explains the current data and leads one to be able to derive clear testable hypotheses to verify the theory. It seems unclear as to how tool/drug theory does this. For instance, whence money pathology and the whole issue of individual differences? How does tool/drug theory explain pathological and irrational money hoarding or spending or gambling any better or differently than psychoanalysis? And what is the source of gender differences in money use (which should not be particularly problematic from an evolutionary perspective)? In short, what is the *incremental* validity of the theory/metaphor from what has gone before, or is it merely a classificatory device for all other theories in the area?

Third, the question must be asked: Is L&W's theory only one theory of why people seek out money as well as of how and when and why they save and spend it? Is the theory aiming to be a new, overarching, universalist theory of money usage which supplants all earlier “partial and inadequate” theories that ignore all important biological factors, or simply a corrective taxonomic challenge to those working in the area? I would suggest it succeeds as the latter but not the former.

## Metaphysics of money: A special case of emerging autonomy in evolving subsystems

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**Abstract:** There is “something more” to money, as this incisive review shows. The target article's shortcoming is its overextension of the “drug” metaphor as a blend of features that do not fit the rationalistic economics and behavioral psychologies summarized as tool theories, but this may be resolved by viewing money as a particular case of the more general evolutionary phenomenon of emergent subsystem autonomy.

Money is not alone. Examples of robust, “drug-like” phenomena other than money include humor and music. How did these things originate and become widespread and varied? To what degree can these pervasive human phenomena be explained in terms of exaptations or present adaptiveness? Another possible analogy to the emergence of money: How do humans come by the remarkable aptitude and brain circuitry for reading written words and passages, given that the history of writing seems to be only several thousand years old?

When a fleeting occurrence in living systems repeats itself, and then becomes frequent and widespread, it may achieve its own “entification” or “thinghood.” Entification entails further opportunities to accumulate additional *raison d'être*. Sufficient robustness may then be achieved to abet new evolutionary branches, and proliferation of forms. Gradually increasing autonomy in subsystems of complex systems (either living or engineered by humans) is a much more general phenomenon than is captured by Allport's personality theory principle of “functional autonomy,” which Lea & Webley (L&W) cite (target article, sect. 3.2.3; Allport 1937).<sup>1</sup> This crucial aspect of complex systems (Glassman 1973; Glassman & Wimsatt 1984; Simon 1996) underlies the fact that every evolved entity or feature of every living system originates as something else.

The biological and social living world is always in motion. Features that had served a particular function within one

species of complex system, come to serve other functions in descendants of that system, while still retaining sufficient resemblance to their precursors to be recognizable as homologs. There are innumerable examples. Engineering examples include the modification and reuse of subroutines in the development of computer programs (perhaps especially “object-oriented” programs; e.g., Kehtarnavaz & Kim 2005), and the “evolution” of large buildings and bridges (Petroski 1985). Natural examples include the evolution of the human hand and the bird's wing from the primordial vertebrate forelimb; also, the evolution of innate components of behavior, such as the patterns of rhythm-generating circuitry in the spinal cord that serve swimming in fishes and walking in terrestrial animals, and the emotions underlying greeting behavior in diverse species of social animals. Enhanced depth perception, attending overlapping binocular visual fields, is another robust phenomenon with diverse uses; it serves largely to increase the accuracy of traveling among tree limbs by monkeys and the accuracy of predatory pouncing by cats. For only the past 100 years or so, this complex neurobiological apparatus has been subject to a new form of natural selection, as humans try to accurately drive cars at highway speeds, and often live to tell the tale.

Related to emerging autonomy, the concept of “modularity” is widely used in present-day biological and social theorizing. This concept is now also deeply rooted in cognitive science theorizing, whose beginnings, circa the 1960s, happen to be coincident with those of evolutionary grand theories. However, typical uses of the concept of modularity do not sufficiently capture the degree of autonomy of evolving subsystems. Money, for example, virtually has a life of its own. L&W note that it has quickly taken root in every society that has discovered it. The ferment of multiple ongoing changes in every complex evolving system means that even when none of these dynamics is internal to a particular subsystem, the subsystem's buffeting about among other subsystems is tantamount to a process of “seeking.” This point, approximately the same insight that led Darwin to use the term “natural selection,” has been explained particularly well by Donald T. Campbell in his works on evolutionary epistemology. Campbell discusses the ubiquity of “unjustified variation and selective retention,” or “blind variation and selective retention” (Campbell 1974a; 1974b; Kim 2001). I would push L&W's history of the origins of biological “grand theories of everything” to earlier in the mid-twentieth century, certainly at least as far back as E. O. Wilson's grand tome *Sociobiology* (Wilson 1975), which, by the time of Dawkins' *The Selfish Gene* (Dawkins 1976; cf. target article, sect. 1.1), was in its fourth printing. Campbell (1976) announced it vigorously in his presidential address to the American Psychological Association.

L&W provide some important examples from ethology (sect. 2.2.2), but their use of these examples, particularly in regard to dishonest signaling, parasitism, and other “drug-like” phenomena, seems inherently conservative in its emphasis on a seamy side of evolution. L&W also cite Thorstein Veblen (1899), who offered a delightfully droll and cynical view of the seamy side of the social evolution of uses of wealth, while describing the sheer, showy nuttiness of some of those familiar uses (also see Brooks 1981). But new evolutionary branches may also be “good” ones. Yes, human archetypes are often exploited in advertising or for other selfish ends; however, they are exploited as well in great literature, which helps its human consumers to better orient themselves and to find new adaptations as they face civilization and its discontents.

Citing Campbell, Konrad Lorenz perceptively argued that a high degree of subsystem autonomy, coupled with internally generated spontaneity, is crucial in any living system, for reliability and continued survival (Lorenz 1969; Eibl-Eibesfeldt 1970). It is unfortunate that the more speculative aspects of Lorenz's work elicited polemics that have led to the neglect of many of his ideas by English-speaking behavioral scientists. For example, Lorenz compellingly explains the vital importance of

spontaneity of the heart's atrioventricular node, which ordinarily, but not always, remains subordinate to the sinus node, as a model instance of the much more general phenomenon of subsystem spontaneity and semi-autonomy (Lorenz 1966, p. 86). These ideas about subsystem spontaneity also seem related to William James's argument that "Man has more instincts than any other mammal" (James 1890, pp. iv–v, 383–441).

Whether the spontaneous "motion" of a subsystem is generated internally or by the "chaos" of its surroundings, the principle of natural selection implies that when the subsystem encounters an opportunity in its environment, it may exploit that opportunity, and will then persist in its new form or behavior, so long as any costs or risks of its new functionality provide a net increase in its "inclusive fitness," or longer-term probability of survival in itself or the copies it generates. Taking a few steps back from such individual cases to better conceptualize "the forest" over and beyond its individual swaying "trees," we can envision the larger ecology of a living environment comprising autonomously "entified" loosely coupled components and features of components. All of these are engaged in the same general game of seeking new opportunities for exploitation of each other or for mutualism. In human social systems such ferment is extremely rich because our exquisitely developed abilities to learn, remember, and imitate make it particularly easy for a feature to decouple from its host entity and jump to a new vector. In other cases, instead of such decomposition and recombination, an entity or feature of an entity simply accumulates additional functions, thereby achieving greater and greater robustness. In much of their argument for "money as a drug" I think this is what L&W are getting at.

#### NOTE

1. I thank the fourteen undergraduates in my Psychology 325 class ("Persuasion and truth in sales communications") for their enlivening discussion of the L&W target article during our September 26, 2005 evening meeting.

## Keeping up with the Joneses: The Desire of the Desire for money

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**Abstract:** The biological basis of money lies in a three-term relationship between one subject and some others, with money acting as a mediator. The drive to acquire money is a special case of a desire for recognition. What is aimed at by subjects is their desire for the desire of some others: the former derive satisfaction from representing to themselves the admiration, or envy, of these others. This raises reproductive advantage.

The object of Lea & Webley's (L&W's) inquiry is to find a "biological basis" for money, meaning a basis reducible to a Darwinian trait such as reproductive advantage. Both their "tool" and "drug" approaches refer to a two-term relationship where a subject experiences cognitive and emotional states linked to a representation centred on money. The most obvious instance of this, which the authors unfortunately fail to mention, is sustenance. For anyone below the poverty level, cash remains foremost the means to the essential end of subsistence. The "biological basis" of money needs therefore to be understood in the authors' analysis as meaning "when cash as a tool for straightforward biological survival has been discounted." Examples of such a two-term relationship would then be those of Harpagon, Molière's *Miser*, clinging to his cherished casket, or Uncle Scrooge, diving and tunnelling through gold coins and hundred-dollar bills in his pool-designed vault. In such cases, cash has been "fetishized," adulated as such, as a symbol of wealth.

One can talk of a "biological" response to gold because of its shininess and hue, and its feature of being rust-proof, leading to its universally evidenced function as a symbol for immortality. Paper banknotes and coins of vile metal are of a different nature and their link to riches is conventional; in financial parlance, their nature is "fiduciary," requiring an act of trust that a central bank will honour cash of this sort, guaranteeing it will maintain it in its role of a universal equivalent of worth. L&W mention times (such as in the aftermath of the American Civil War) when convertibility of cash into precious metal gets suspended. When this happens, precious metal is restored in its role of a depository of value, confirming that money as such might very well be – as the authors hint – an entirely cultural phenomenon, impossible to analyze profitably within any alternative framework.

Analyzing money as a cultural phenomenon, beyond immediate survival concerns, does not preclude tracing it back to its "biological basis." It requires, however, an extension from a two-term relationship between a subject and money to a three-term relationship between one subject and at least one other, with money acting as a mediator between the two. In the two-term model, a subject holds a representation of money (as with cash as a "fetish"); in the three-term model, a subject owning money holds a representation of another subject's representation of him/herself owning that cash.

The three-term nature of money is best illustrated in a "Keeping up with the Joneses" example: Let's buy a 70" flat screen TV because the Joneses own a 50"! The drive behind the purchase is not improved viewing (only a secondary benefit here) but competition: the satisfaction obtained derives from representing to oneself the Joneses' envious state of mind. By out-competing them we've made ourselves the centre of their own attention: their attention has been captured by us; they are, literally speaking, *captivated*. Money is used as a *tool* to achieve this effect and its *drug*-like quality lies in the altered state of consciousness we reach when subordinating some other subjects' attention to our persons, meaning that we've altered at the same time their own mindsets.

L&W say of their tool/drug dichotomy that "the two theories seem to exhaust the range of possibilities between them" (sect. 2.3, para. 1). This is correct but, as we've just seen, not in the simple "either/or" way they imply: the complexity of the relationship requires a more sophisticated model combining both tool and drug within a three-term model. In that perspective, the drive to acquire money amounts to a special case of a desire for recognition. A psychological theory of recognition has been proposed before; its source lies in philosophy where it was initially formulated by G. W. F. Hegel as the "desire of desire" – that is, my desire for another's desire, either of an object or, in the case of love, of my own person (Hegel 1807/1949, pp. 225–27; Roth 1988, p. 97). The theory was further developed in the twentieth century by Alexandre Kojève (Kojève 1969, pp. 6–7; Roth 1988, pp. 97–99), then given a psychiatric/psychoanalytical formulation by Jacques Lacan (Wilden 1968, pp. 83–85, 192–96). In Lacan's interpretation, the "desire of desire" becomes the linchpin of a theory of the Self where the sole foundation for my own Self – my proper identity – is the attention other subjects are paying to me, that is, it is constituted of my own capacity for captivating others. What constitutes the subjects' Self is therefore not internal to them but distributed among a network of other subjects, although centred on them.

When applied specifically to money, the "desire of desire" model means that what is aimed at by subjects through their possession of money is their desire for the desire of some others: the satisfaction they derive from representing to themselves the admiration or the envy of others. The theory is instrumental (it has a "tool" quality), in that money is in truth sought after to obtain something, but that something is not of a material nature: it is the altered state of consciousness achieved (hence the "drug" quality) through captivating the attention of a number of other subjects. One example presented by the