

Manuscript of contribution to Commentary on **Lea & Webley**

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Money as tool, money as resource: the biology of collecting items for their own sake

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Abstract:

Money does not stimulate receptors in mimicry of natural agonists; so, by definition, money is not a drug. Attractions of money other than to purchase goods and services could arise from instincts similar to hoarding in other species. Instinctual activities without evolutionary function include earning a billion and writing for BBS.

Comment:

Stephen Lea and Paul Webley spoil a strong case for a biologically based desire for money itself, by inventing the incoherent concept of a “cognitive drug.” They fail to recognise the hoarding instinct as a likely evolutionary origin of enjoying accumulated money for its own sake. More broadly, they do not allow that an inherited capacity can provide the basis for non-functional activities. Most generally of all, they seem to presuppose that, to have a biological basis, behaviour must be reducible to operations on material entities such as nicotine, saccharin and coins; as a result, they miss the realities in social institutions and culture, and indeed of conscious and unconscious mental processes.

Many species collect items of food, in stocks far larger than needed at the moment or anticipatable from past individual experience (Morgan, Stellar & Johnson, 1943). Size of cache is not tightly regulated by selective value to ancestors, such as duration of seasonal lack of food or of torpor while hibernating (Munro *et al.*, 2005). Ageing affects hoarding in mice non-functionally (Chen *et al.*, 2005). Laboratory rats even hoard blocks of wood.

That is, adaptive behaviour is not always functional. Indeed, evolution could hardly work without useless activities becoming functional in new ecologies. A hoard of flints knapped by hominids (Wynn, 2002) need not be evidence of an instinct for armouries among survivors of battles between groups: the collecting instinct could have run free in makers of axes for butchering or hunting.

Thus adaptive capacities for hoarding could account for accumulation of coins. The gold or silver need not be felt to be beautiful to look at or delightful to touch (as reductionism disposes L&W to suggest). The miser may simply be scrabbling through his hoard. The cop-out of

invoking play is unnecessary, gambling is not analogous and it is unhelpful to relate drug addiction to obsessive-compulsive disorder (Grisham & Barlow, 2005).

Hoarding needs no coins (nor money-processing chips, as L&W revealingly invoke twice), nor marks on a screen or in a ledger: the miser can go through his fortune in his head. Some people find entertainment in mining caches of data. Selfishness or incompetence about potential for knowledge from one's own database is a serious problem in the information industry (Lai, Tari & Bertok, 2005).

Just credit information can be “a functionless motivator”, although the strength of a delight in money as such is likely to come from its use to acquire immediate or delayed access to goods and services. It adds nothing to claim that money activates the brain’s bump for collecting (or the cultural role of a collector). Like any mental processes, thoughts and feelings about money activate neural pathways and also pathways through the economy when overt in social activity. Thus locating critical brain areas for people’s normal or abnormal collecting of useless objects (Anderson, Damasio & Damasio, 2005) in no way substantiates the “metaphor” of a drug: it merely provides a starting point for characterizing the cellular expression of genes for the instinctual capacities that develop into accumulation of resources - or of junk. The irreducibly social system of an economy is also necessary for the hoarded resource to be the tool for collecting any purchasable resource.

So why do L&W start with the idea of a psychoactive drug’s mimicry of neurotransmitters at receptors in the brain and then stepwise empty it of all content, even metaphorical? The only necessity is if money’s power has to be physical, in cause and in effect. Psychoactive drugs are substances that alter ion movements at synapses. What L&W call “sensory drugs” are material stimuli to sensory receptors of the rare sort that elicit greater and greater reactions as the stimulation becomes extremely strong. This monotonic relationship is peculiar to unlearnt reflexes however; liking for sweetness becomes contextualised socially or nutritiously to the particular level familiar in a food or drink, for rats (Booth *et al.*, 1972) as well as people (Booth *et al.*, 1983; Conner *et al.*, 1988). Furthermore this may be the only piece of appetitive behaviour that is innate in human beings. (The baby-like rounded profile does not elicit particular movements.) The game is up when the only example of a “cognitive drug” (the metaphor for money) is pornographic pictures and text. Contrary to L&W, there is little or no evidence in human beings for innate sexual arousal at sight of the real thing: the power of pictorial erotica results from acculturation, not genetically programmed wiring between inferotemporal cortex and autonomic efferents to the genitalia. The clincher is textual erotica, and indeed spoken words: linguistic capacities may be instinctive but not English or French verbiage, about sex or food.

Sexy sights or sounds are not “illusory” either. What’s missing when they are bought rather than freely offered, in the flesh or just by photo or phone, is the other person. Even intense sweeteners are not illusions: their sweetness conveys what the consumer wants them for (Freeman *et al.*, 1993). Similarly, it is not an illusory quality of money that makes monetary gifts “socially awkward” nor is it a trade instinct somehow separate from reciprocal altruism. A gift is expected to be attractive to the particular recipient: resorting to money instead of a personally appropriate object shows lack of empathy, which is poor acculturation of the biological capacity for altruism.

In summary, the capacity to develop the cooperative or individual activity of collecting items for their own sake is likely to have selective advantage in ecologies where resources are much more limited at some times than at others. In a species with much non-material culture and activity, resources hoarded to no extrinsic purpose can include artefacts of society that are also non-material, such as a balance at the bank that others only dream of. Money may derive all its attractions from services and goods it buys and then (contrary to L&W) it can fulfill the hoarding instinct in biosocial cognitive actuality - no "illusion" and not dependent on brains that use ["metaphorical"] coins as neurotransmitters.

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