where N_1 and N_2 are numbers of addresses to the positive and negative agencies, and n_1 and n_2 are numbers of reinforcements received from the positive and negative agencies during one session. The value of S is constant on the entire set of sessions and $S \geq 0$.

Correlation (1) indicates the existence of the analogue to sacred behavior in animals. Let us demonstrate this.

It follows from (1) that

$$n_1/N_1 \leq n_2/N_2. \tag{2}$$

Ratio n_1/N_1 can be interpreted as the mean payment for one appeal to the positive agency and n_2/N_2 as the mean payment for one appeal to the negative agency. We can see from (2) that, on average, the subject never requires more payment for one appeal to the positive agency than for one appeal to the negative one. Is it possible that in these experiments, we observe behavior evolutionarily preceding the sacral behavior of human beings? If it is so, then the sacral aspect of money has deep biological roots.

Money and motivational activation

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Abstract: Different aspects of people's interactions with money are best conceptualized using the drug and tool theories. The key question is when these models of money are most likely to guide behavior. We suggest that the Drug Theory characterizes motivationally active uses of money and that the Tool Theory characterizes behavior in motivationally cool situations.

Money acts as a drug or as a tool in different circumstances. We suggest that money acts like a drug when there is a strongly active current goal that may or may not relate to money. In contrast, money is treated as a tool in motivationally cool states, such as those for which there is significant psychological distance between the individual and the choice situation. To illustrate this point, we refer to specific data.

Research on mental accounting suggests that people set up mental accounts for different kinds of money to protect active short-term goals from desired long-term goals (Brendl et al. 1998; Shefrin & Thaler 1992). This view is consistent with the drug theory of money. When people are faced with tempting short-term alternatives, they are likely to spend money without recognizing that money spent in the present has opportunity costs in the future. Thus, people create both mental accounts and physical forms of money that are hard to spend in order to create barriers that protect long-term goals, precisely because they cannot treat money as a tool (see also Zelizer 1994b).

Consistent with this interpretation, we have data suggesting that people do not recognize the general value of money as a tool in motivationally hot states (Brendl et al. 2003). In one study, we approached German college students who were cigarette smokers after they had completed a long lecture class (in which they were not permitted to smoke). Half of the students were kept in the classroom and were given a cup of coffee (which stimulated their need to smoke). The other half were brought outside the classroom, were encouraged to smoke, and were also given a cup of coffee. Thus, the participants inside the classroom had a high need to smoke, and those outside the classroom had a low need to smoke.

Participants were offered the opportunity to purchase raffle tickets for 25 pfennigs apiece. For half of the subjects, the prize was three cartons of cigarettes. For the other half, the prize was an amount of cash about equal to the cost of three cartons of cigarettes. Participants were only aware of the raffle they were offered. The students were told that the raffle drawing would be held the following week, so any prize could not be used to satisfy their current goals.

Those offered the raffle to win cigarettes were slightly more likely to purchase tickets when they had a high need to smoke than when they had a low need to smoke. This greater preference for a goal-related item when the goal is active than when it is inactive is called *valuation*. Of importance, students who were offered the raffle to win cash purchased tickets at a reasonably high rate when they had a low need to smoke, but rarely purchased tickets when they had a high need to smoke. This lower preference for a goal-unrelated item (cash) when the goal is active than when it is inactive is called *devaluation* (for more discussion, see Brendl et al. 2003; Markman & Brendl 2005).

This finding suggests that cash is not considered relevant to the goal of smoking when people have a high need to smoke. This result is consistent with the drug theory of money, for money is being treated as a specific entity that is relevant in particular circumstances. Other needs, such as smoking, can lead to devaluation of money. Had money been conceptualized motivationally as a tool, then it should have been perceived to be relevant to any situation in which it could be used to purchase an object that would satisfy an active goal. On the basis of evidence like this, we believe that money is treated as a drug in motivationally active states.

There are also cases in which money is conceptualized as a tool. One area where this view of money is obvious is in studies of taboos and social exchanges. As an example of a taboo, Tetlock et al. (2000) showed that people find it morally repugnant for a hospital to consider denying an expensive treatment to a patient in order to save money for another hospital project. Even considering the proposal taints the decision maker.

As a second example, McGraw and Tetlock (2005) describe varieties of social exchanges. Most transactions in our culture permit money to be used freely. Indeed, currency is the basis of our day-to-day purchases. Nonetheless, we have certain special relationships for which money is inappropriate. If a neighbor helps us to fix a flat tire, we can reciprocate by helping him or her to rake leaves in the yard, but not by paying them money. An offer of money for help from a neighbor would likely be seen as an insult. As another example, parents perform duties for their children without keeping track of the effort spent and with no expectation that the effort will be returned in like kind. Again, the idea that parents would receive payment for their services is strange.

Determining that it is inappropriate to offer money directly in exchange for human lives or in certain close social relationships rests on money being recognized as a tool. A significant component of the negative reactions to these situations arises because people do not wish to place these dimensions into the market economy where they can be traded against other goods and services for which money can be used.

These moral and social exchange situations involve psychological distance between money and the situation in which money is used. Most considerations of the taboo uses of money involve situations in which one is not actively engaged in the choice process itself. Indeed, most of the evidence obtained by Tetlock and his colleagues is done using vignette studies that assess people's reactions to hypothetical situations. Likewise, our social relationships are maintained in situations that do not have strongly active goals relating to exchanges. Thus, it is easier in these contexts than in motivationally active contexts to treat money conceptually as a tool.

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