



# ASSOCIATION FOR CONSUMER RESEARCH

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## **Money: a Bias For the Whole**

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We document a phenomenon, a “bias for the whole”, wherein greater value is perceived for currency in whole denominations compared to equivalent amounts of money in smaller denominations. This manifests itself in a lower inclination to part with the large bill while shopping or spending. We demonstrate across four experiments that this arises from the greater processing fluency experienced in processing the whole, as opposed to the parts. This processing fluency is hedonically marked and generates positive affect that is attributed to the money, resulting in an over-valuation of money, making one reluctant to part with it in exchange for products.

### **[to cite]:**

Arul Mishra, Himanshu Mishra, and Dhananjay Nayakankuppam (2007) ,"Money: a Bias For the Whole", in NA - Advances in Consumer Research Volume 34, eds. Gavan Fitzsimons and Vicki Morwitz, Duluth, MN : Association for Consumer Research, Pages: 166.

### **[url]:**

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# Money: A Bias for the Whole

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## EXTENDED ABSTRACT

The role of money as a medium of exchange makes it an important element in consumer behavior and economic theories. However, little attention has been paid to how consumers perceive different currency denominations. We investigate if peoples' willingness to spend differs depending on whether they hold money in the form of a whole (a \$100 or \$50 bill) or in the form of parts (ten \$10 bills or ten \$5 bills). We report a consistent differential evaluation, which we call a 'bias for the whole', where people display less willingness to give up the whole (i.e., the bigger denomination) as compared to its constituent parts (i.e., monetarily equivalent smaller denominations) to acquire an object. The issue has both substantive economic importance (cash is used in \$1.3 trillion worth of retail transactions in the U.S. alone) and theoretical importance as such a bias violates the concept of descriptive invariance (Tversky, Sattath and Slovic 1988).

What is the underlying psychological process that might account for the bias for the whole? The Gestalt notion has been demonstrated in highly diverse domains ranging from summarized events (Ariely and Carmon 2000), extended experiences (Ariely and Zauberman 2003) and intertemporal choice (Loewenstein and Prelec 1993). We suggest that the bias for the whole occurs because money in the form of a whole possesses Gestalt properties of cohesion and economy and can be perceived and processed more rapidly than multiple bills. A single bill has a single interpretation of its value—e.g. a hundred dollars. On the other hand, an equivalent amount of money in parts (ten \$10 bills) does not possess these Gestalt properties as the parts retain their individual characteristics. Further, the parts can be combined together to form multiple value points—twenty, fifty or hundred dollars—hindering the processing of a unique overall meaning. Thus, money in the form of a whole is processed more fluently than the constituent parts. Past research has shown that processing fluency gives rise to positive affect (Bornstein and D'Agostino 1994). Thus, positive affect due to higher processing fluency results in a preference for money in the form of a whole.

We suggest that multiple bills combine to form multiple value points, hindering the processing of a unique overall value. Therefore, the more the value points, the larger will be the bias. Also, there is the alternate account of convenience. It could be argued that people prefer to spend with money in parts, so as to eliminate the clutter of carrying many bills of smaller denomination. Equivalent money in a larger denomination appears uncluttered and seems more convenient, reducing the willingness to part with it. To test this participants were either given a \$100 bill, five \$20 bills or a \$50, two \$20, and two \$5. The \$100 bill (the whole) formed just one value point. However for the remaining two conditions, while the amount of money and the total number of bills were the same, the five \$20 bills grouped together to form five different value points (\$20, \$40, \$60, \$80 and \$100) while the combination of \$50, two \$20 and two \$5 bills came together to form sixteen different value points (\$5, \$10, \$20, \$25, \$30, \$40, \$45, \$50, \$55, \$60, \$70, \$75, \$80, \$90, \$95, and \$100). Subsequently participants' willingness to buy three products was measured. Results were consistent with the proposed account. Participants with \$50, two \$20 and two \$5 indicated the highest willingness to buy, followed by participants with the five \$20, and participants with the \$100 bill were least

willing to buy the products. These results were inconsistent with the alternate account.

To demonstrate the role of processing fluency, in experiment 2 we primed either decreased or increased processing fluency with tasks that either had participants break whole objects into individual parts or group together parts to form whole objects. Priming grouping reduced the bias for the whole while priming breaking enhanced the bias for the whole. Affect ratings were also obtained and they showed that the influence of higher processing fluency on willingness to buy was mediated through positive affect.

Experiment 3 provided converging evidence for the role of processing fluency by moderating the bias for the whole with changes in stimulus familiarity. Past research has shown that stimulus familiarity increases its processing fluency (Whittlesea 1993). Thus, by increasing familiarity with smaller bills (which suffer from a lack of processing fluency), we were able to moderate this effect.

Experiment 4 explicated the role of affect. Using a misattribution paradigm (Reber, Schwarz and Winkielman 2004) the affective reactions arising due to processing fluency were rendered non-diagnostic, which in turn moderated the bias for the whole.

In sum, these findings suggest that money is not perceived as just a medium of exchange but as an object of evaluation in its own right, a finding of considerable interest to market-level theories as well as theories of individual consumer behavior.

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