

On Assets and Debt in the Psychology of Perceived Wealth

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Abstract

We studied the perception of wealth as a function of varying levels of assets and debt. We found that with total wealth held constant, people with positive net worth feel and are seen as wealthier when they have lower debt (despite having fewer assets). In contrast, people with equal but negative net worth feel and are considered wealthier when they have greater assets (despite having larger debt). This pattern persists in the perception of both the self and others. We explore consequences for the willingness to borrow and lend and briefly discuss the policy implications of these findings.

Keywords

decision making, judgment, life satisfaction, policy making, poverty

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Wealth and the perception of wealth are at the core of economic behavior and well-being. The desire to increase wealth is a central driver of economic behavior, and financial wealth is correlated not only with better health and education, but also with greater happiness and life satisfaction (e.g., Diener, 1984; Kahneman & Deaton, 2010; Larson, 1978). Yet it has long been recognized that not every dollar contributes equally to perceived wealth (Bernoulli, 1738/1954). Studies of relative wealth have found that people's standing relative to those around them often predicts well-being better than net worth does (e.g., Easterlin, 1974; Frank, 1999, 2007), and increasing income trends are preferred over decreasing ones (Loewenstein & Sicherman, 1991). Several factors can influence the perception of wealth, and both classical and behavioral accounts recognize that perceived wealth can influence behavior (e.g., Ando & Modigliani, 1963; Frank, 1999; Thaler, 1985; Veblen, 1899/1965). Still, other influences notwithstanding, a major component of perceived wealth is actual net worth. If you are worth \$X, how wealthy you feel will in large part be determined by being worth \$X, even if that is then tainted by your history, the wealth of the people around you, and so forth. And it seems reasonable to assume that the impact of your net worth is independent of whether it is in checking or savings accounts, or whether it is composed of debt-free assets or of larger assets combined with some debt. All else being equal, \$1 million in assets (with no debt) constitutes the same wealth as \$1.2 million in assets and \$200,000 in debt.

Behavioral research, however, has found people's financial attitudes and decisions to be malleable, and often sensitive to normatively inconsequential factors. For example, in an early

study, Tversky and Kahneman (1986) asked respondents to assume themselves to be richer by \$300 and invited them to choose between a sure \$100 gain or an equal chance to win \$200 or nothing; other respondents were to assume that they were \$500 richer and were asked to choose between a sure \$100 loss and an equal chance to lose \$200 or nothing. Although the financial prospects are identical in these two cases, people typically chose opposite outcomes (i.e., the sure gain in the first scenario and the risky loss in the second), apparently being driven by differing attitudes toward risk rather than by economic calculations. In another study, people spent more when large accounts (money in savings) were made mentally accessible than when small accounts (money in wallets) were made mentally accessible, thereby exhibiting differential consumption tendencies although net worth was kept constant (Morewedge, Holtzman, & Epley, 2007). In fact, one of the main lessons from research on mental accounting is that financial behaviors often align closely with current income and with active accounts, rather than with considerations of net worth (Thaler, 1999).

In the studies we report here, we extended this research to perceptions of personal wealth. In particular, we looked at

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whether net worth obeys basic invariance assumptions—whether two equivalent net worths, composed of different levels of assets and debt, lead to the same subjective perception of economic well-being. The breakdown into assets and debt is an aspect of personal finances that has received little attention in behavioral research, despite the psychological salience of these constructs and their centrality to financial analysis and planning.

Our research suggests that asset and debt levels can affect wealth perception, and that the relative focus on assets and debt changes according to whether net worth is positive or negative, an effect consistent with research on contingent weighting (Payne, 1982; Tversky, Sattath, & Slovic, 1988). We found that with net worth held constant, people in the black (i.e., with positive net worth) feel, and are seen as, wealthier when they have lower debt (despite having lower assets). In contrast, with net worth held constant, people in the red (i.e., with negative net worth) feel, and are considered, wealthier when they have greater assets (despite having greater debt). These patterns hold for the perception of self and of others, and extend to financial transactions (borrowing and lending). We argue that against a background of positive net worth, debt gains salience relative to assets; conversely, in a context of negative net worth, assets loom larger against background debt. We conclude this article with a brief discussion of the policy implications of these findings.

General Method

Participants in all the studies reported here were recruited through Mechanical Turk, a platform hosted by Amazon.com. All were U.S. residents and received monetary compensation. Across the studies, 37% of participants were male, and 63% were female; the average age was 36.2 years (range: 18–81), and the average reported household income was in the range from \$50,000 to 75,000.

Study I: Assets and Debt

In contrast to studies focusing on evaluations based on net worth, our first study explored whether asset and debt levels differentially influence perceived wealth according to whether the target individual is in the black (positive net wealth) or in the red (negative net wealth). Because asset and debt levels can fluctuate while net worth remains constant, an influence on perceived wealth could have nontrivial implications.

Experiment la

In our first experiment, to ascertain how levels of assets and debt influence perceived wealth in the contexts of positive wealth and negative wealth, we presented participants with several hypothetical financial profiles.

Method. Participants (N = 48) were told:

In what follows, you will be presented with several people's hypothetical financial profiles, consisting of their debts and assets. "Assets" refer to the variety of sources that contribute to a person's positive wealth: savings accounts, retirement accounts, car and home ownership, etc. "Debt" includes any money the person owes, which can come in the form of student loans, mortgages, credit card debt, etc. A person's profile may also mention sources of credit, that is, money available for that individual to borrow, if s/he so wishes.

Each participant saw 8 pairs of financial profiles, 4 with positive and 4 with negative net worth, selected arbitrarily from a set of 16 (see Appendix S1 in the Supplemental Material available online for details on the materials used in this experiment). Each pair presented the financial profiles of two individuals of equal net worth: one profile, the *low profile*, had lower assets and lower debt than the other, the *high profile*. For example, one pair stated:

Mr. Green has \$200 in assets, \$44,200 in debt. Mr. Red has \$42,100 in assets, \$86,100 in debt.

For each pair, participants indicated which individual they considered better off financially. To ensure that participants did not base their decisions on presumed liquidity constraints, for most pairs, we provided additional information explaining that both individuals had "substantial access to credit," "access to an additional \$X of credit," or "total available credit of \$X." To ensure that participants' judgments were not attributable to computational difficulty, for remaining pairs, we included an explicit summary of the individuals' (equal) net worth. Participants saw one positive-wealth pair and one negative-wealth pair with each of these four statements. Presentation order of the pairs and profiles within the pairs was randomized.

Results. The relative perceived wealth of the profiled individuals depended on whether they were in the red or the black. Across all positive-net-worth pairs, a substantial majority (79%) of respondents perceived the low-profile person—with lower assets and lower debt—as wealthier than the high-profile counterpart. Conversely, across all negative-net-worth pairs, a substantial majority (77%) judged the high-profile person—with greater assets despite greater debt—as wealthier than the low-profile counterpart (Wilcoxon test, Z = 5.45, p < .001; both majorities were significantly different from 50%, p < .001). This pattern held across all credit-access descriptions, and remained when total net worth was explicitly stated (see Table 1).

Experiment 1b

Wealth can be broken down into various components, such as home ownership, retirement savings, and student loans, which can generally be categorized as either assets or debt. In much Perceived Wealth 103

Table 1. Results From Experiment Ia: Profile Choices and Statistical Tests Comparing Choices in Conditions of Equal Negative Versus Equal Positive Net Worth

Choices of the profile with higher debt and higher assets as better off (%) Negative net Positive net Additional information provided Wilcoxon Z worth worth Þ Statement of "substantial" access 76 24 4.81 100. > to credit 73 100.> Additional credit amount given 22 4.35 78 22 < .001 Total credit amount given 4.85 Statement of equal net worth 80 16 5.24 100. >

of this article, we focus on assets and debts generally, to distill the perception of wealth to its fundamentals, avoiding more elaborate descriptions involving interest rates, investments, and other circumstances. In Experiment 1b, however, we broke wealth down into narrower components, which allowed us to ensure that the patterns we observed are robust and that a focus on debt and assets does not compromise our findings. Additionally, whereas Experiment 1a examined participants' perceptions of other people's wealth, Experiment 1b examined participants' perceptions of their own wealth.

Method. Participants (N = 30) read an introduction similar to that of Experiment 1a, and then viewed six profile pairs, half indicating positive and half indicating negative net worth, in random order. Each pair presented the profiles of two real individuals who had posted their financial information on NetworthIQ.com, a site where people can "Track. Share. [and] Compare" their financial status with others' (https://www.networthiq.com). The profiles presented line-item data directly from the Web site, broken down in balance-sheet form

into assets, such as cash and real estate, and debt, such as mortgages and credit-card debt (see Fig. 1). The profiles in each pair were of nearly equal net worth: one profile with high debt and high assets; the other with low debt and low assets.² After viewing each pair of profiles, participants indicated which financial situation they would rather be in.

Results. The pattern observed in Experiment 1a persisted when debt and assets were broken down into more realistic subcategories. Overall, participants favored the high profile—higher debt and assets—only 38% of the time in cases of positive net worth, but 71% of the time in cases of negative net worth (Wilcoxon test, Z = 3.39, p = .001; both responses were significantly different from 50%, p < .05).

Discussion

The first study established a simple principle of wealth perception: When net worth is positive, debt contributes negatively to the perception of wealth, more than is compensated for by

Mr. Blue	Mr. Green
Mr. Blue	Mr.

Assets			Debts		Assets			Debts		
Cash	\$	891	Home Mortgage(s)	\$ -	Cash	\$	12,486	Home Mortgage(s)	\$1	97,376
Stocks	\$	-	Other Mortgage(s)	\$ -	Stocks	\$	276	Other Mortgage(s)	\$	-
Bonds	\$	-	Student Loans	\$ 6,190	Bonds	\$	-	Student Loans	\$	44,557
Annuities	\$	-	Credit Card	\$ 5,350	Annuities	\$	-	Credit Card	\$	4,691
Retirement	\$	26	Car Loans	\$ -	Retirement	\$	18,471	Car Loans	\$	-
Home	\$	-	Other	\$ 6,935	Home	\$1	182,103	Other	\$	8,127
Other Real Estate	\$	-			Other Real Estate	\$	-			
Cars	\$	-			Cars	\$	18,595			
Personal Property	\$	500			Personal Property	\$	5,350			
Other	\$	-			Other	\$	-			
Total Assets	\$ 1	1,417	Total Debts	\$ 18,475	Total Assets	\$2	237,281	Total Debts	\$2	254,751
Total Net Worth: \$17,058 Debt				Total Net Worth: \$17,470 Debt						

Fig. 1. Sample profiles used in Experiment 1b.

corresponding assets; conversely, when net worth is negative, assets contribute positively to perceived wealth, more than is adjusted for by corresponding debt. These perceptions held for judgments about the self and others, and proved robust across different formulations of assets and debt; moreover, the pattern of findings cannot be explained by computational demands or liquidity constraints. These results suggest that people find debt particularly aversive in the context of positive net worth and assets particularly appealing in the context of negative net worth, and that these attitudes are strong enough to violate normative measures of wealth.

Study 2: Financial Decisions

Whereas Study 1 focused on perceptions of wealth, Study 2 investigated whether profiles that are financially more appealing by the criteria uncovered in Study 1 actually lead to different decisions (taking on debt, approving a loan), compared with less appealing financial profiles of equal wealth.

Experiment 2a

We first looked at people's willingness to borrow money to make a discretionary purchase. We hypothesized that all else being equal, willingness to borrow would be higher when people felt better off. Given the results of Study 1, we expected that when people were in the red, those with higher assets would be more likely to take on additional debt than would those with equal net worth but lower assets. Conversely, for people in the black, we expected borrowing to be less attractive when debt was high than when it was low.

Method. Participants (N = 62) considered hypothetical scenarios involving tempting purchases that required borrowing money. They were given the same explanation of debts and assets as in Experiment 1a and then were told that they were to imagine being in various financial situations. The instructions said:

In each case, you are considering purchasing an item that you cannot afford unless you borrow additional money. Even though your total assets may be more than the amount required, they are presumably held in ways (such as home equity) that are not easy to access for this purchase.

Each scenario was accompanied by two pairs of financial profiles, constructed as in Experiment 1a. The two profiles in each pair were of equal net worth; one pair consisted of profiles with positive net worth, and the other consisted of profiles with negative net worth. Participants were told that the two people in each pair had "the ability to borrow at the same, market interest rate," and they were asked under which profile in each pair they would be more inclined to borrow to make the purchase. In the four scenarios, participants contemplated the purchase of two luxury items (television, motorcycle) and two nonluxury items (work computer, bathroom repairs; see Appendix S2 in the Supplemental Material for details on the materials). The order of the scenarios was randomized.

Results. Responses did not differ significantly across the scenarios (see Table 2), and data were subsequently combined. Participants were more likely to be willing to borrow when they imagined they had the profile types identified in Study 1 as better off (despite equal net worth). Across the four scenarios, participants favored borrowing under the low profile (lower debt and assets) over borrowing under the high profile (greater assets and debt) when net worth was positive (82% vs. 18% of responses), but preferred borrowing under the high profile over borrowing under the low profile when net worth was negative (64% vs. 36% of responses; Wilcoxon test, Z = 5.41, p < .001; both majorities were significantly different from 50%, p < .02).

Experiment 2b

People's perceived financial health influences not only their own decisions, but also the decisions made about them by others. In this experiment, we explored whether a person's perceived wealth (with actual wealth held constant) can influence other people's willingness to give that person a loan.

Table 2. Results From Experiment 2a: Percentage of Participants More Likely to Borrow Under the Conditions of the High Profile (Higher Debt and Higher Assets) Than Under the Conditions of the Low Profile, Given Equal Net Worth

Item to be purchased using the loan	Negative-net- worth profiles	Positive-net- worth profiles	Wilcoxon Z	Þ
Nonluxury items:				
Computer	55	16	3.46	.001
Bathroom renovation	61	10	3.77	< .001
Luxury items:				
Television	68	19	3.87	< .001
Motorcycle	71	29	3.50	I 00. >

Perceived Wealth 105

Method. Fifty-four participants assumed the role of a loan officer and made a series of decisions involving which of two applicants was in a better financial position to receive a loan. In one scenario, the loan was purportedly needed to help finance a car for work; in the other, it was needed to pay for a family vacation (see Appendix S3 in the Supplemental Material for details on the materials). As in Experiment 2a, each scenario was presented twice—once with a choice between two positive-net-worth profiles (of equal worth) and once with a choice between two negative-net-worth profiles (of equal worth). Thus, participants responded to four questions in total (purpose of loan: car or vacation; profile: positive or negative).

Results. There were no detectable differences in preferences between the two scenarios, and data were subsequently combined. Participants showed a clear preference for awarding loans to individuals with profiles identified as financially superior according to the criteria determined in the previous experiments. When participants were presented with the positive-net-worth options, 75% of responses favored giving loans to the low over the high profiles; this percentage was significantly higher than the 26% of responses favoring the low profiles when participants were presented with the negative-net-wealth options (Wilcoxon test, Z = 4.82, p < .001; both percentages were significantly different from 50%, p < .001).

Discussion

We examined the influence of wealth patterns on decisions to borrow and lend. When participants envisioned having profiles of greater perceived wealth (but equal net worth), according to the criteria identified in Study 1, they showed greater willingness to borrow money; similarly, they were more willing to grant loans to individuals with greater perceived wealth. Such patterns may have important consequences. For example, they present risks for potential borrowers with negative net worth, who might value the greater assets that come with a loan more than they dread the added debt. In a potentially vicious cycle, people with negative net worth and higher levels of debt, relative to those with negative net worth and lower levels of debt, may show a greater willingness to incur greater debt and at the same time have easier access to further loans.

Study 3: An Attentional Account

Having documented systematic patterns in perceptions of wealth, we briefly explored psychological factors that might underlie these perceptions. We propose that net worth—negative or positive—serves as the background in the perception of wealth, and that discrepant features—debt when wealth is positive; assets when it is negative—appear salient against that background. Debt receives greater attention in the evaluation of otherwise positive wealth, whereas assets are weighted more heavily in the context of negative wealth.

Experiment 3a

We created a battery of financial profiles that varied in assets and debt, with net worth held constant. We hypothesized that if assets and debt drive wealth evaluations for negative and for positive net worth, respectively, then rankings of wealth profiles should correlate highly with assets when net worth is negative but with debt when net worth is positive.

Method. Participants (N=32) were presented with two sets of 10 financial profiles and were asked to rank the profiles in each set from most to least desirable. The profiles varied in amounts of assets and debt, but all profiles within a given set had the same net worth: \$36,000 in the positive-net-worth set and -\$36,000 in the negative-net-worth set (see Appendix S4 in the Supplemental Material for details on the materials). Presentation order of the sets, profiles, and assets and debt within a profile was randomized.

Results. Participants' rankings were used to compute average profile ranks. As predicted, in the realm of positive net worth, profiles were considered more desirable as debt and assets diminished (r = -.91, p < .001; see Fig. 2). (Note that because net worth was kept constant, assets and debts were perfectly correlated—as one went up, so did the other.) In contrast, in the realm of negative net worth, profiles were considered more desirable as debt and assets increased (r = .73, p = .017). Thus, as hypothesized, perceived wealth correlated highly (and negatively) with debt when net worth was positive, and it

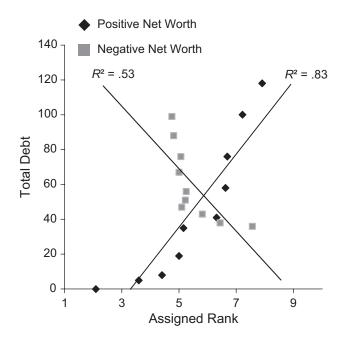


Fig. 2. Study 3a results: scatter plot (with best-fitting regression lines) showing the relationship between the average rankings of the positive- and negative-net-worth profiles and the total amount of debt indicated by the profiles. Within each set of profiles, net worth was held constant. A ranking of I is the best, and 10 is the worst.

correlated highly (and positively) with assets when net worth was negative.

Experiment 3b

To explore further the hypothesis that assets receive more attention in contexts of negative worth, and debt looms larger in contexts of positive worth, we asked participants to describe which features mattered most when they evaluated wealth profiles.

Method. Participants (N = 123) saw two pairs of paragraphlong descriptions of similar individuals, including summaries of these individuals' net worth, broken down by assets and debt (see Appendix S5 in the Supplemental Material for details on the materials). For example, one pair read:

Jeff has worked as an electrician for the past 15 years. His wife is a substitute teacher. They live in a rented apartment outside of Boston, Massachusetts, with their two children. Their household has a total of \$9,000 in assets and \$34,000 in debt.

Ben has worked as a police officer for the past 12 years. His wife works part time as a nurse. They live in a rented apartment in Buffalo, NY, with two children. Their household has a total of \$72,000 in assets and \$97,000 in debt.

After reading each pair of profiles, participants were asked to "indicate the first thoughts that come to mind when considering which household is in a better financial situation." Two thirds of the participants were then asked to indicate whether assets or debt figured more prominently in their response. Finally, all participants were asked: "Who do you think is more satisfied with his/her financial position?" Descriptions of the individuals (apart from their wealth information) were counterbalanced within pairs, as were the asset and debt levels and whether net worth was positive or negative. Two independent raters—blind to the hypothesis—coded the free responses to the first question. The raters determined whether each free response focused more on assets or on debt, or stated that they were unable to determine a focus. Raters agreed on 83% of responses (Cronbach's $\alpha = .84$) and resolved discrepancies by consensus.

Results. The observed focus was as predicted: Participants focused more on assets relative to debt when net worth was negative than when it was positive, both when focus was assessed via self-reports and when it was assessed through rater-coded free responses. Sixty-two percent of self-reports focused on assets when net worth was negative, whereas 27% focused on assets when net worth was positive (Mann-Whitney test, Z = 4.75, p < .001). Coders were unable to determine a focus in 35% of free responses, which were approximately

evenly distributed across conditions. Of the remaining free responses, 53% were judged to be focused on debt when net worth was positive, whereas 19% were judged to be focused on debt when net worth was negative (Mann-Whitney test, Z = 4.36, p < .001). Responses to the third question showed that participants perceived high-profile individuals as more likely to be satisfied with their financial situation than their low-profile counterparts in contexts of negative net worth (76%), but in contexts of positive net worth, only 27% of high-profile individuals were judged more satisfied than their low-profile counterparts (Mann-Whitney test, Z = 7.57, p < .001; both responses were significantly different from 50%, p < .001).

Concluding Discussion

We first demonstrated that people have a robust preference for higher assets in cases of negative net worth and for lower debt in cases of positive net worth. We extended this finding to a series of hypothetical financial decisions and obtained evidence of relative salience underlying these perceptions. Drawing from work on contrast and contingent weighting, we proposed that net worth—positive or negative—serves as background, with discrepant features standing out against that background. Consequently, debt appears relatively salient in contexts of positive wealth, whereas assets loom relatively large in contexts of negative wealth, and this differential salience has a corresponding impact on financial judgments and decisions.

Of course, through intricate accounting schemes, one could contrive situations in which the obtained patterns—preference for higher assets in contexts of negative net worth and for lower debt in contexts of positive net worth—are somehow economically justified. For example, a potential borrower with negative net worth may view greater debt (to afford greater assets) as worthwhile if the borrower expects to declare bankruptcy and never repay the debt. However, the prospects of bankruptcy, high transaction costs, and assorted other financial considerations were never mentioned in our studies, by the experimenters or the participants, and are unlikely to have played a significant role. In reality, people in the red would likely face higher interest-rate debt and lower-return investment opportunities, which make additional debt financially unappealing, whereas those in the black would have access to lower interest rates and better investments, which might encourage additional debt. Instead, we found the opposite pattern. Furthermore, these explanations are inconsistent with our participants' judgments of who was best equipped to receive a loan, and with preference reversals that occur when net worth shifts from slightly positive to slightly negative, situations that, financially, are quite comparable.

Differences in forms of assets and debt (mortgage, credit card, etc.), economic conditions,³ and personal characteristics, among others, can all influence the perception of wealth. Nonetheless, we controlled for many of these factors in our studies and obtained a persistent pattern that seems to capture an important aspect of the perception of wealth.

Perceived Wealth 107

Behavioral research has documented several patterns of differential accounting for negative and positive contexts reminiscent of those shown here. Prospect theory (Kahneman & Tversky, 1979), for example, famously distinguishes between gains and losses. However, prospect theory is not about wealth, but rather about departures from current reference points, and it is consequently difficult to apply this theory's insights to the current setup. Assets and debt would need to be coded as gains and losses, a problematic move in which incurring a debt would amount to choosing a loss. Furthermore, loss aversion would suggest that there should often be a preference for smaller amounts of assets and debt over larger amounts (because each unit of loss weighs more than a unit of gain), which would be consistent with half the pattern we observed, but inconsistent with the other half.

Along similar lines, Prelec and Loewenstein (1998) have provided an account of debt-averse and debt-seeking mental accounting preferences. This research also provides valuable insights, but differs in focus and applicability from the current work. Notably, Prelec and Loewenstein's theorizing and findings are at the level of specific purchases, and are motivated by the tension between the pain of payment and the pleasure of consumption.

People's net worth carries information about their economic health and capabilities. Particular asset and debt levels, however, can fluctuate liberally without changing net worth. The fact that such fluctuations can influence perceived wealth has nontrivial implications. Along with mental accounting (Thaler, 1985, 1999), the present findings show how the appeal of a loan may depend on one's perceived financial state. For a person who is in the red, a loan may provide an appealing infusion of cash, whereas for a person in the black, it might present an aversive incursion into debt. Conversely, people who are in the black may be tempted to diminish their debt, whereas it may prove unappealing for those in the red to lower their debt at the expense of their assets.

Remarkably, the same striving for financial wealth and stability can trigger opposing behaviors: preference for greater assets in some circumstances, and for lower debt in others. Such impulses may not always be aligned with what is best financially. People who are in the red and eager to borrow will sometimes have access only to high-interest loans. And people who are eager to clear their debt will sometimes do so even when their debt (e.g., tax-incentivized mortgages) is financially beneficial. Such psychology may be of great consequence. A remarkable 25% of U.S. households had zero or negative net worth in 2009 (for Black households, the figure was about 40%; Allegretto, 2011). Better insight into the determinants of perceived financial wealth and financial decision making could help shape behaviorally informed policy.

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Supplemental Material

Additional supporting information may be found at http://pss.sagepub.com/content/by/supplemental-data

Notes

- 1. In a follow-up study, preferences for avoidance of debt among individuals with positive net worth and for accumulation of assets among those with negative net worth proved strong enough to generate counternormative orderings among profiles of unequal worth. In a positive-net-worth context, for example, a zero-debt profile was judged significantly better than a profile with substantially greater debt but 27% greater net worth (p=.002), and in a negative-net-worth context, a zero-asset profile was judged worse than a profile with greater assets but 10% lower net worth (p=.001).
- 2. Because the numbers belonged to actual profiles, we were not able to match net worth exactly. Consequently, we made matches that were as close as possible, erring in the direction counter to our hypothesis.
- 3. In an unpublished study, we provided diverse economic outlooks and obtained patterns of results similar to those reported here.

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