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James Duesenberry as a practitioner of behavioral economics

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Abstract
In 1949 James Duesenberry published *Income, saving and the theory of consumer behavior*. His objective was to solve a puzzle presented by the macroeconomic data on consumption. To do so, he created the Relative Income Hypothesis. Duesenberry explicitly challenged the neoclassical assumption of independent consumer preferences and made use of ideas that are now common in behavioral economics: loss aversion, status quo bias, spotlight effects, herd behavior, and interdependent preferences. He also raised policy questions about the effect of redistributive taxes on national saving. To answer the questions he raised, we need empirical research by behavioral economists. Finally, the issue arises as to why the Relative Income Hypothesis has virtually disappeared from economics even though it is superior to the Permanent Income Hypothesis that replaced it.

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Introduction

One of the artificial rules of neoclassical economics is that an individual's preferences are independent of other individuals' preferences (Chao and Shor 1998; Kockesen, Ok, and Sethi 2000; Ok and Vega-Redondo 2001). As Ok and Vega-Redondo put it, "The working assumption of a vast majority of economists on this regard is that an individual's behavior is guided by the sole motive of the maximization of one's own material payoffs" (2001, 232). In other words, people are concerned about what and how much they consume, but not about what and how much they consume relative to other people. The rule is so preposterous that only a professor could believe it.

In 1949 Harvard professor James Duesenberry took direct aim at this rule when he published *Income, saving and the theory of consumer behavior*. On the very first page he argues that two "fundamental assumptions" of demand theory are "invalid". These assumptions are "(1) that every individual's consumption behavior is independent of that of every other individual, and (2) that consumption relations are reversible in time" (Duesenberry 1949, 1). He notes that the assumption of independent preferences has "no empirical basis" and then argues that "there are strong psychological and sociological reasons for supposing that preferences are in fact interdependent" (1949, 3).

Duesenberry's appeal to psychological and sociological evidence marks him as an early practitioner of behavioral economics. In his view, *Homo Economicus* leads economists astray. Economists need to work with a more realistic vision of human behavior, one that will provide more accurate predictions.

The relative income hypothesis

Duesenberry's immediate concern was to reconcile three apparently conflicting data sets: "(1) the data on aggregate savings and income in the period 1869-1929 collected by Kuznets; (2) the budget studies of 1935-36 and 1941-42; (3) the yearly data on aggregate savings and income for the period since 1929 published by the Department of Commerce" (1949, 1). The first (long-run) data set indicates that there is no tendency for the fraction of income saved to rise with income; the second (cross-section) data set shows that the fraction of income saved rises with income; the third (short-run) data set also shows that the fraction of income saved rises with income, but at a different rate than in the cross-section data.

Duesenberry's solution is now called the Relative Income Hypothesis. Central to that hypothesis is the idea that the utility one derives from consumption depends on what and how much one consumes relative to what and how much others consume. That is because people are concerned about their status relative to others. As Duesenberry put it, "A real understanding of the problem of consumer behavior must begin with a full recognition of the social character of consumption patterns" (1949, 19). This entails two general points: (1) Our evaluations of particular goods are often culturally determined and (2) Both what and how much we consume indicates where we stand in the social hierarchy.

Duesenberry notes that many different goods can serve

the same purpose. If we need to travel we can walk, take a bus, or take a taxi. If we are hungry we can eat Ramen noodles or caviar. Yet these are not equivalent; some goods are widely regarded as "better" than others. Sometimes this is based on "technical superiority". For example, a computer with word-processing software is clearly better than a manual typewriter. But in other cases "better" is defined purely by culture. Most Americans see no problem eating beef or pork, but in other cultures such food is taboo. On the other hand, most Americans are revolted by the thought of eating dog meat, even though it is a delicacy elsewhere. As Currid-Halkett recently wrote, "Goods that minister to physical needs —food and drink— are no less carriers of meaning than ballet or poetry… We need to see our consumption of goods as an intricate part of humanity's social system" (2017, 3).

Even when there are no taboos, goods are subject to a social ranking. "Brand Name" goods are viewed as superior to generic goods. A Rolex is not more accurate than a Timex or a Casio, but everybody "knows" that a Rolex is "better" than the other two. Duesenberry does not attempt to explain such rankings (unlike, say, Veblen 1899), but simply notes that the rankings exist. The socially agreed upon rankings form the basis of Duesenberry's "demonstration effect".

Duesenberry argues that "Ours is a society in which one of the principal social goals is a higher standard of living" (1949, 28). This goal is "instilled in every individual's mind by the socialization process.… The goal becomes essential to the maintenance of self-esteem" which is "a basic drive in every individual" (1949, 28). In this fashion, "Our social goal of a high standard of living, then, converts the drive for self-esteem into a drive to get high quality goods" (Duesenberry 1949, 31). Consumption of high quality goods becomes an indicator of status. As a result, when people are frequently exposed to "better" goods than they are currently consuming, they are reminded of their low position in the social hierarchy. To preserve some degree of self-esteem, people do what they can to close the gap by consuming better-quality goods.

If we frequently observe that others are consuming better goods than we are, the demonstration effect is especially pronounced. Duesenberry notes that because the United States has no formal social classes, individuals of different social status have the opportunity to interact frequently and so are exposed to what others consume. Duesenberry could not foresee it, but today the demonstration effect is on steroids because things like television and modern social media expose us to high-status goods on an almost continual basis. We are continually reminded of our relative position in the race for a higher material standard of living.

For people at the low end of the income distribution, it seems like everyone is consuming better-quality goods. This reminder of low status causes them to raise their consumption (and so reduce their saving) as much as they can. In Duesenberry's words:

> For any particular family the frequency of contact with superior goods will increase primarily as the consumption expenditures of others increase. When that occurs, impulses to increase expenditure will increase in frequency, and strength and resistance to them will be inadequate. The result will be an increase in expenditure at the expense of saving (1949, 27).

In contrast, people at the high end of the income distribution have far fewer encounters with people consuming superior goods. They therefore feel far less pressure to spend even more than they already are.

The demonstration effect can therefore be used to explain the cross-section data that show that the share of income saved rises with income. Low-income people feel constant pressure to spend more. As one's income rises, one encounters fewer and fewer instances of people consuming better-quality goods. As a result, there is less and less pressure to consume more to maintain one's status and self-esteem. Thus richer people will save a larger fraction of their income than poorer people.

Yet this pattern does not hold in the long run. The data show that as the economy grows and most of us get richer, the share of national income saved stays more or less constant. That appears to be a paradox; if rich people save a higher fraction of income than poor people, why doesn't the saving rate rise as the economy grows?

Duesenberry reconciles the two sets of data (cross section and long run) by pointing out that general increases in income do not change the income distribution. If, for example, I am at the low end of the income distribution and my income doubles along with everyone else's, then I am still at the low end of the income distribution. Most people will still be consuming better goods than I am; the demonstration effect will be just as powerful as it was before. It is *relative* income that matters, not absolute income.

So what about the short-run data in which the saving rate rises with income, but at a different rate than in the cross-section data? Duesenberry argues that "saving depends on past as well as current income" (1949, 76). Consider a heretofore prosperous family that suffers a decline in income during a recession. The family has accustomed itself to a particular lifestyle that it regards as normal. As its income falls, it will reduce its saving rate so as to maintain that lifestyle. On the other hand, if it experiences a rise in income during a boom, it will not have to spend more to maintain its normal consumption, so its saving rate will rise. During economic downturns, many more people have less than normal income and so must save less (or dissave) to maintain their accustomed level of expenditure. During boom periods many more people have above-normal income and so normal consumption takes up a smaller portion of income. This is consistent with the data that show the saving rate falling in recessions and rising in booms.

Duesenberry and behavioral economics

By now readers may have noticed several ideas presented by Duesenberry that have become part of behavioral economics. One of the central ideas in the preceding paragraph is that people grow accustomed to a particular consumption pattern and view it as "normal". When their income falls, they are loath to cut their consumption below its "normal" level. Yet when their income rises above normal, they are not in a hurry to increase consumption. In other words, losses (of consumption) are felt more strongly than gains. This is an example of *loss aversion*, a central element of the prospect theory developed by Kahneman and Tversky (1979, 1992).

Duesenberry's discussion of the short-run behavior of saving rates also evokes an idea William Samuelson and Richard Zeckhauser (1988) called status quo bias. Status quo bias means that the current situation is used as a reference point to which people become attached; it defines "normal". Prospective deviations from the status quo are viewed with suspicion; as Kahneman and Tversky (1982) showed, people fear bad results from changing behavior more than they fear bad results from not changing behavior.

But at the very core of Duesenberry's argument is the idea that people's consumption decisions are influenced by what others consume. That this idea is at all controversial would seem astonishing to a ploughman, but it runs counter to the assumption of independent preferences at the core of neoclassical demand theory. As mentioned earlier, in 1949 Duesenberry said that there was no empirical evidence the assumption is true; in 2018 there is still no empirical evidence to support it. If economists were actually interested in doing science, the burden of proof would be on those who hold such counterintuitive views. Nevertheless, researchers from a variety of disciplines have taken it upon themselves to gather evidence that preferences are *not* independent. The literature on the interdependence of preferences is so vast that only a tiny sampling of it is presented here. But consider a few illustrations.

People are extremely concerned about what others think about them. We also assume that others pay close attention to what we wear and what we do. Yet our perceptions do not match reality. In fact, "people overestimate the extent to which their actions and appearance are noted by others" (Gilovich, Medvec, and Savitsky 2000, 211). The tendency to think that others are paying more attention to us than they really are is known as the *Spotlight Effect*. The Spotlight Effect makes us worry even more about our place in the social hierarchy. We therefore strive to give off all the right social signals. This desire for favorable notice affects behavior in a variety of ways.

A famous experiment by Asch (1955) dramatically illustrated the degree to which we are influenced by other people's view of the world. Asch gave very simple tests to individuals, and those individuals almost always answered correctly. But when the individuals were presented with unanimous but wrong answers from a group (all but the experimental subjects were "shills" planted by the experimenter), the individuals changed their answers more than one third of the time. And this was a case where the group was quite obviously wrong! The result has been replicated over 130 times all over the world (Thaler and Sunstein 2009, 56). If people are willing to conform to the group when the group is obviously wrong, what about when the group is not obviously wrong?

One possible result is *Herd Behavior*. Herd behavior is a well-known phenomenon that affects everything from speculative bubbles to consumption decisions. Consider the following anecdote reported by Bikhchandani, Hirshleifer and Welch (1998):

> In 1995, management gurus Michael Treacy and Fred Wiersema secretly purchased 50,000 copies of their business strategy book *The discipline of market leaders* from stores across the nation. The stores they purchased from just happened to be the ones whose sales are monitored to select books for the New York Times bestseller list. Despite mediocre reviews, their book made the bestseller list. Subsequently, the book sold well enough to continue as a bestseller without further demand intervention by the authors (151).

If other people think it is good, it must be good. As Duesenberry said, there is a well-understood social ranking of goods from better to worse. We take our cues from what other people consider better, and our consumption decisions reflect that ranking. We are social creatures; we cannot help it.

Other examples from consumption abound. The cyclical nature of fashions stems from the desire to gain status by consuming "better" goods than everyone else. But when the masses emulate the fashion, there is a desire for a new fashion with which to distinguish one's self from the general population (Adams and McCormick 1992). Spending on everything from women's cosmetics (Chao and Shor 1998) to dog breeds (Ghirlanda, Acerbi, Herzog, and Serpell 2013) is affected by fashion and concerns about status. The desire for counterfeit luxury goods is an especially good example. As Wilcox, Kim, and Sen (2009) argue, "consumers' desire for counterfeit luxury brands hinges on the social motivations (i.e., to express themselves and/or to fit in) underlying their luxury brand preferences" (247).

Status is a powerful motivator. Heffetz and Frank (2011) review the literature on the desire for status up to about 2008. Focke, Maug, and Niessen-Ruenzi (2017) show that "CEOs are willing to trade off status and career benefits from working for a publicly admired company against additional monetary compensation" (2017, 313). Focke et al. estimate that CEOs are willing to work for 8% less if the firm is included in *Fortune* magazine's list of most admired companies.

Falk and Ichino (2006) provide another example from the workplace. In a field experiment they show that workers are more productive working in pairs than when working alone. In other words, "the productivity of a worker is systematically

influenced by the productivity of peers in the absence of confounding factors. These results provide clean evidence for the existence of peer effects on work behavior" (2006, p. 40). We worry that our coworkers will think we are slackers.

Policy implications

Duesenberry argued that if the relative income hypothesis were true, then a redistribution of income from rich to poor might *increase* the average propensity to save. He gives a hypothetical example in which all income in excess of $5,000 per year (in 1941 prices) were taxed away and given to people with incomes less than $5,000 such that everyone would have income of $5,000 (1949, 44). The immediate result would be a *decrease* in the average propensity to save for two reasons: 1.) Those with incomes previously above $5,000 would reduce their saving in order to maintain their accustomed level of consumption spending, and 2.) Those with incomes previously below $5,000 would spend all of the additional income in order to raise their status. But "after a period sufficiently long to permit full adaptation to the new situation" (Duesenberry 1949, 44), the demonstration effect would lose force because everyone would have the same income. Because of that, there would be less pressure on everyone to consume more, and so the average propensity to save would rise.

Duesenberry is quick to point out that "the example just given is extremely unrealistic; but it at least shows that there is considerable doubt as to how saving would be affected by a redistribution" (1949, 45). His example is directed against those who argue that income redistribution must necessarily reduce saving because the poor have a lower average propensity to save than the rich. Duesenberry's point is that the average propensity to save is affected by *relative* income, not just absolute income. Hence changes in the distribution of income will affect the rate at which people save.

Boskin and Sheshinski (1978) pursue this concept and create a theoretical model to address optimal redistributive tax policy when welfare depends in part on relative income. They first consider the issue using a utilitarian social welfare function and then consider it using a Rawlsian *maximin* criterion. They conclude that "the optimal rates ... when individuals are mostly concerned with relative, as opposed to absolute, income are much higher than those derived in previous studies in the optimal income tax tradition" (Boskin and Sheshinski 1978, 591). In other words, the relative income hypothesis strengthens the theoretical case for income redistribution.

There are, of course, a variety of objections that can be raised. One is the disincentive effect of redistributive taxes and subsidies. Resolving the heated debate about how the size of the pie is affected by redistribution is far beyond the objectives of this paper and the abilities of its author. But it is an issue that must be addressed head on in any discussion of income redistribution.

Another significant issue stems from Duesenberry's implicit assumption that people will be content with their relative position once the income distribution is equalized. Thorstein Veblen, for example, certainly did not see things that way. As is well known, Veblen, like Duesenberry, believed consumption decisions were heavily influenced by concerns about status (Veblen 1899; McCormick 1983, 2006). He went so far as to argue that even in 1915, half of consumption expenditures were for things that were only "conventionally necessary" (Veblen 1915, 272). Yet Veblen thought that the drive for status was so strong that no amount of income redistribution would ever slow down the desire to consume. In his words:

> In the nature of the case, the desire for wealth can scarcely be satiated in any individual instance, and evidently satiation of the average or general desire for wealth is out of the question. *However widely, or equally, or "fairly" it may be distributed, no general increase of the community's wealth can make any approach to satiating this need, the ground of which is the desire of every one to excel every one else in the accumulation of goods* (Veblen 1899, p.32, emphasis added).

Veblen's point is that people will not be content just being equal to everybody else because they want to outdo everyone else. If he is correct, then an egalitarian income distribution will not cause the average propensity to save to increase; it might in fact decrease.

This dispute between Duesenberry and Veblen boils down to whether people will be content consuming at the same level as everyone else or if they will continually strive to exceed the norm. This is an empirical question, and depends on how real people actually behave. It seems like an important research question for behavioral economists.

So why is Duesenberry ignored today?

The relative income hypothesis used to be included in most macroeconomics textbooks (e.g. Branson 1979). It successfully reconciles the apparent contradictions in the long-run, cross-section, and short-run data. It is intuitively appealing and is consistent with everyday experiences. It also benefits from over 60 years of research on human motivation and behavior. Yet Duesenberry and the relative income hypothesis have virtually disappeared from economics. As Robert Frank put it, Duesenberry's disappearance

> is puzzling because his theory of consumer behavior clearly outperforms the alternative theories that displaced it in the 1950's – a striking reversal of the usual pattern in which theories are displaced by alternatives that better explain the evidence. His disappearance from modern economics textbooks is an intriguing cautionary tale in the sociology of knowledge (2005).

The main alternative theory that displaced the relative income hypothesis is Milton Friedman's (1957) permanent income hypothesis. If people experience diminishing marginal

utility of consumption, then they will want to "smooth" their consumption over time. The marginal utility of consumption will be higher when income is low than when income is high, so people will want to save when income is high so as to be able to consume when income is low. As a result, consumption is determined not by current income, but by the present discounted value of average annual lifetime income (called permanent income).

In any particular year actual income may be unusually high (perhaps because one unexpectedly works many hours of overtime) or unusually low (perhaps because one has an unexpected bout of unemployment). Annual income thus has two components: a permanent component determined by expected lifetime income and a transitory component determined by "windfall" gains and losses. If consumption is determined by permanent income, then windfall gains will always be saved so as to smooth consumption when windfall losses occur.

Friedman uses this theory to reconcile the data. In the short run, transitory income will be positive during booms and negative during recessions. If consumption depends on permanent income, then consumption will fall relative to current income in a boom and it will rise relative to current income in a recession, just as the data indicate. The cross-section data are explained by saying that at any point in time, many of the "rich" are simply experiencing positive transitory income and hence are saving more, while many of the "poor" are experiencing negative transitory income and are thus saving less. In the long run, consumption is a constant fraction of income because transitory income is zero.

This not the place for a detailed analysis of the permanent income hypothesis, but note that it only makes sense for *Homo Economicus*. Among other things, people cannot succumb to any self-control issues. The reflective "planner" inside of us must be able to control the impulsive "doer" in us. (The terms come from Thaler and Sunstein 2009, p. 42.) Behavioral economists have shown repeatedly that this simply is not how humans behave. Daniel Kahneman, reflecting a vast amount of research by psychologists, contends that humans have two mental systems:

> System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control. System 2 allocates attention to the effortful mental activities that demand it, including complex computations. The operations of System 2 are often associated with the subjective experience of agency, choice, and concentration (2011, pp. 20-21).

The planner in us is System 2; the Doer is System 1. Unfortunately, humans live most of their lives in the grip of System 1. It requires effort for us to "pay attention" and actually think. The planner in us has us getting to bed early and getting up early, exercising regularly, eating sensibly, not smoking, and resisting all impulsive purchases. But the doer in us has other ideas.

So we are presented with two hypotheses that are consistent with the data. The relative income hypothesis is consistent with the findings of behavioral economics and common sense. The permanent income hypothesis depends on *Homo Economicus* to maximize the utility of consumption over a lifetime. Which one do you find more reasonable?

One might speculate that the attraction of the permanent income hypothesis to neoclassical economists is precisely because it relies on *Homo Economicus*. To accept the relative income hypothesis, one must reject the assumption of independent preferences. If one does that, one must jettison the core of neoclassical demand theory. That is a big step. Much of the profession appears to be in the grip of status quo bias. Perhaps the most we can hope for is that Max Planck was right: "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it" (quoted in Kuhn 1970, 124).

References

Adams, Roy D. and Ken McCormick (1992). "Fashion dynamics and the economic theory of clubs". *Review of Social Economy* 50(1), pp. 24-39.

Asch, Solomon (1955). "Opinions and social pressure". *Scientific American* 193(5), pp. 31-35.

Bikhchandani, Sushil, David Hirshleifer and Ivo Welch (1998). "Learning from the behavior of others: Conformity, fads, and informational cascades". *Journal of Economic Perspectives* 12(3), pp. 151-170.

Boskin, Michael J. and Eytan Sheshinski (1978). "Optimal redistributive taxation when individual welfare depends upon relative income". *The Quarterly Journal of Economics* 92(4), pp. 589-601.

Branson, William H. (1979). *Macroeconomic theory and policy*, 2nd edition. New York: Harper Row.

Chao, Angela and Juliet B. Schor (1998). "Empirical tests of status consumption: Evidence from women's cosmetics". *Journal of Economic Psychology* 19(1), pp. 107-131.

Currid-Halkett, Elizabeth (2017). *The sum of small things*. Princeton: Princeton University Press.

Duesenberry, James S. (1949). *Income, saving and the theory of consumer behavior*. Cambridge: Harvard University Press.

Falk, Armin and Andrea Ichino (2006). "Clean evidence on peer effects". *Journal of Labor Economics* 24(1), pp. 39-57.

Focke, Florens, Ernst Maug, and Alexandra Niessen-Ruenzi (2017). "The impact of firm prestige on executive compensation". *Journal of Financial Economics* 123(2), pp. 313–336.

Frank, Robert H. (2005). "The mysterious disappearance of James Duesenberry". New York Times, June 9. Available at: http://www.robert-h-frank.com/PDFs/ES.6.9.05.pdf.

Friedman, Milton (1957). *A theory of the consumption function*. Princeton: Princeton University Press. Available at: http://www.nber.org/chapters/c4405.pdf.

Ghirlanda S, Acerbi A, Herzog H, Serpell JA. (2013). "Fashion vs. function in cultural evolution: The case of dog breed popularity". *PLoS ONE* 8(9): e74770. https://doi.org/10.1371/journal.pone.0074770.

Gilovich, T., Medvec, V. H., & Savitsky, K. (2000). "The spotlight effect in social judgment: An egocentric bias in estimates of the salience of one's own actions and appearance". *Journal of Personality and Social Psychology* 78(2), 211-222.

Heffetz, Ori and Robert H. Frank (2011). "Preferences for status: Evidence and economic implications". In *Handbook of Social Economics*, Volume 1A, edited by Jess Benhabib, Alberto Bisin, and Matthew Jackson. New York: North Holland, pp. 69-90.

Jefferson, Thomas (1787/1955). "From Thomas Jefferson to Peter Carr, with enclosure, 10 August 1787". *The Papers of Thomas Jefferson* 12(7), August 1787 - 31 March 1788, edited by Julian P. Boyd. Princeton: Princeton University Press, pp. 14-19. http://founders.archives.gov/documents/Jefferson/01-12-02-0021.

Kahneman, Daniel (2011). *Thinking, fast and slow*. New York: Farrar, Straus and Giroux.

Kahneman, Daniel and Amos Tversky (1979). "Prospect theory: An analysis of decision under risk". *Econometrica* 47(2), pp. 263-291.

Kahneman, Daniel and Amos Tversky (1982). "The psychology of preference". *Scientific American* 246(1), pp. 160-173.

Kahneman, Daniel and Amos Tversky (1992). "Advances in prospect theory: Cumulative representation of uncertainty". *Journal of Risk and Uncertainty* 5(4), pp. 297-323.

Kockesen, Levant, Ok, Efe A., and Rajiv Sethi (2000). "Evolution of interdependent preferences in aggregative games". *Games and Economic Behavior* 31(2), pp. 303–310.

Kuhn, Thomas (1970). *The structure of scientific revolution*, second edition, enlarged. New York: New American Library.

McCormick, Ken (1983). "Duesenberry and veblen: The demonstration effect revisited", *Journal of Economic Issues* 17(4), pp. 1125-1129.

McCormick, Ken (2006). *Veblen in plain english*. Youngstown, New York: Cambria Press.

Ok, Efe A. and Fernando Vega-Redondo (2001). "On the evolution of individualistic preferences: An incomplete information scenario". *Journal of Economic Theory* 97(2), pp. 231-254.

Samuelson, William and Richard Zeckhauser (1988). "Status quo bias in decision making". *Journal of Risk and Uncertainty* 1(1), pp. 7-59.

Thaler, Richard H. and Cass R. Sunstein (2009). *Nudge* (revised and expanded edition). New York: Penguin Books.

Veblen, Thorstein (1899/1965). *The theory of the leisure class*. New York: Augustus M. Kelley.

Veblen, Thorstein (1915/1964). *Imperial Germany*. New York: Augustus M. Kelley.

Wilcox, Keith, Hyeong Min Kim, and Sankar Sen (2009). "Why do consumers buy counterfeit luxury brands?", *Journal of Marketing Research* 46(2), pp. 247-259.