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Research Report

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Are people's economic wants insatiable?
Examining the psychology of a basic economic belief.

[PRE-PRINT]

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Abstract

Despite widespread claims by economists that humans have unlimited economic wants, evidence for this psychological claim is sparse. Here we focus on a common interpretation of unlimited wants as insatiable – unfulfilled wants persist even at higher incomes because new wants always emerge to replace satisfied wants. We analyzed a representative 16-year multi-wave US dataset (N=11865) previously used to show that economic wants are insatiable based on highly selective subsets of these data. Using the full dataset shows that having insatiable wants is far from universal – about a third reported no unfulfilled economic wants, and on average people with higher incomes had fewer wants. Additional analyses showed that many people did not aspire to wealth in their conception of “the good life”, and the extent of unfulfilled wants varied over time. This assumption about universal human nature is not supported, calling into question the theories and policies it informs.

A claim about psychology lies at the core of economics – people have unlimited economic wants. This is commonly presented as a basic and universal fact of human nature in economics textbooks (see Table 1 for examples from market-leading textbooks, Lopus & Paringer, 2012; including a Nobel Laureate author). This underpins the concept of “scarcity” (we have unlimited wants but limited resources), described as “*the mother of economics*” (Perloff, 2023, p. 23) and the “*fundamental economic problem*” (Sloman et al., 2020, p. 7). Yet this foundational economic claim warrants psychological investigation, which can either establish whether this assumption is supported by psychological evidence, or raise important questions about the basis of economics and the policies based on them, such as pursuing perpetual economic growth to satisfy ever-increasing wants.

Table 1. Descriptions of unlimited/insatiable wants in major economics textbooks

Source	Quote
Acemoglu, Laibson, & List. <i>Economics</i> (3 rd Global Ed, Pearson Education Limited, 2022).	Scarcity exists because people have unlimited wants in a world of limited resources. (p. 38)
Sloman, Garret, & Guest. <i>Economics</i> (Updated 10th Edition). (Pearson Education Limited, 2020).	So this is the fundamental economic problem: human wants are virtually unlimited, whereas the resources available to meet those wants are limited. (p. 7)
Frank, Bernanke*, Antonovics, & Heffetz. <i>Principles of Economics</i> (8th International Edition). (McGraw Hill, 2022).	It's a simple fact of life that although our resources are finite, our appetites for good things are boundless (p. 120)
Mankiw. <i>Essentials of Economics</i> (9 th Ed) (Cengage Learning, 2021).	Just as each member of a household cannot get everything she wants, each individual in society cannot attain the highest standard of living to which she might aspire. (p. 2)
McConnell, Brue, & Flynn. <i>Microeconomics: Principles, problems, and policies</i> (21st Ed). (McGraw Hill, 2018).	Our desires for a particular good or service can be satisfied...but our broader desire for more goods and services and higher quality goods and services seems to be another story. (p. 7)
Parkin. <i>Economics</i> (13 th Global Edition). (Pearson Education Limited, 2018).	Wants are the unlimited desires or wishes that people have for goods and services.... Scarcity guarantees that many—perhaps most—of our wants will never be satisfied. (p. 97)

*Bernanke won the 2022 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel (colloquially the “Nobel Prize in Economics” and winners referred to as Nobel laureates, although technically it is not a Nobel Prize but a prize administered by the Nobel organization).

Remarkably, definitive statements describing people’s insatiable wants as human

nature such as those in Table 1 are matched by a failure to provide empirical support (Northrop, 2000). In economics, want insatiability is treated as too obvious to require evidence, and in the rare cases where justification is provided a “thought experiment” is deemed sufficient – if we imagine fulfilling our present wants, we will obviously develop more extensive wants (see Table 2 for examples). This is clearly inadequate as the empirical basis for a major claim about human psychology that serves as a foundation for a prominent social science.

Table 2. Examples “verifying” the universality of insatiable wants.

Source	Quote
Hearn (1864). <i>Plutology: Or the Theory of the Effort to Satisfy Human Wants</i> . Macmillan and Co.	These principles may be readily verified. It needs no elaborate proof to show that men constantly desire an increase of physical comforts; that when they have acquired such comforts they are pained at their loss, but that their acquisition does not prevent them from continuing to desire a further increase. The universal experience of mankind is conclusive on these points. (p. 15).
McConnell, C. R. (1987). <i>Economics</i> (International ed.). McGraw-Hill.	A simple experiment will help to verify this point: Suppose we are asked to list those goods and services we want but do not now possess. If we take time to ponder our unfilled material wants, chances are our list will be impressive. And over a period of time, wants multiply so that, as we fill some of the wants on the list, at the same time we add new ones. (p. 19)

To evaluate this psychological claim empirically it is helpful to clarify what is meant by unlimited/insatiable wants as these terms are often used interchangeably. While both terms are both ultimately about unlimited wants, they differ in their focus on wants as absolute or incremental (Bain & Bongiorno, 2022). Construed absolutely, wants are *unlimited* – people aim to satisfy as many economic wants as they can and thus want as much money as possible. Yet when people across cultures chose how much money they needed to achieve their absolutely ideal lives, only a minority chose the maximum possible (Bain & Bongiorno, 2022). Thus, unlimited wants do not seem to reflect human nature – *some* people have unlimited wants, but most people’s wants appear limited.

Construed incrementally, economic wants are *insatiable* – as existing wants are satisfied new wants emerge for additional/better things, so people are never satiated. This

would be supported if people's wants remained constant (or even increase) as incomes increase, because if wants were satiable then those with higher incomes (who are more able to satisfy their existing wants) should have fewer wants than those who are poorer. Insatiability might seem intuitive – it is probably easy to think of someone who always strives for more no matter what they have already, whether this means a better car or the latest consumer goods. Yet it is also not unusual to hear about people who “gave up the rat race” to adopt simpler lifestyles, sometimes motivated by believing more possessions or wealth does not increase their wellbeing (Chang, 2018; Etzioni, 1998; Kang et al., 2021). These people pose a challenge to the universality of insatiable wants, especially if they are more than a tiny minority.

Ideally, research on insatiable wants would be longitudinal to track people's wants across their lifespan and as their incomes change, and use large representative samples. Such resource-intensive studies do not exist, but a unique six-wave panel study has been used to conclude wants *are* insatiable (Easterlin, 2001, 2005, 2021). In the Roper Reports surveys (The Roper Organization, 1975-1991) representative US samples were asked about their wants every 3-4 years from 1975 to 1991. From a list of 24 “things”, they asked people to first select those that they saw as part of their idea of the “good life” (wants), and then those they already possessed (haves). Unfulfilled wants were those things selected as part of the good life that someone did not have.

Easterlin (2001, 2005, 2021) hypothesized that the number of unfulfilled wants people have remained constant even with rising income (insatiability). To understand their findings, though, requires details about their approach. They focused on ten “big-ticket” consumer goods such as owning a home, car, travel abroad, or nice clothes (list in Method). They then created “synthetic cohorts” as a proxy for longitudinal change by loosely matching age categories across surveys (e.g., comparing the 18-29 age category in 1975 with the 30-44 age category in 1988), interpreted as reflecting individual change over time.

Turning to evidence, they focused on two synthetic cohorts (those born 1950-64 and those born 1935-49) over a 16-year period. Using education as a proxy for income (on the basis that more education leads to higher income), on average those with 12+ years of education wanted 0.4 more “big ticket” items than those with less schooling (Easterlin, 2001). Further analyses showed non-significant correlations between income and the number of wants in the 1975 survey, but a small but significant correlation ($r=0.14$) for

those born in 1935-49 in 1994 (an “approaching significant” correlation, $r=0.08$, for those born in 1950-64 was interpreted as significant). Next, using synthetic cohorts of those in early, middle, and late lifecycles and comparing 1978 and 1994 surveys, on average wants and haves increased similarly in all cohorts (Easterlin, 2005). A further study comparing wants and haves for synthetic cohorts of women and men from 1978 to 2003 showed that, on average, both gender cohorts maintained between 1 and 3 unfulfilled wants over time (Plagnol & Easterlin, 2008).

The conclusion drawn about these findings was unequivocal: “...*incomes (what people have) and income reference levels (what people want) increase by the same amount, and the gap of unfulfilled wants remains the same*” (Easterlin, 2021; p. 29). Yet much of the evidence was much more complex and indirect than this conclusion suggests. Only one study directly examined income and wants (with low correlations), with others using proxies for income (education, gender) even though income was measured. Sampling was highly selective – different synthetic cohorts and survey waves were used across analyses when many options were available. Finally, average effects for synthetic cohorts were interpreted as reflecting consistent patterns of individual changes, even though they might arise from differences across samples and cohort-wide change over time. For a foundational economic principle, more direct and comprehensive evidence is critical.

We argue this dataset *can* be used to examine insatiable wants more directly and comprehensively, using all the data rather than highly selective subsets. First, to establish the universality of insatiable wants requires considering distributions – specifically whether some people’s wants *do not* exceed their haves (*no* unfulfilled wants). Finding a substantial number of people in this category poses a strong challenge to universal insatiability. Second, if unfulfilled wants are consistent across incomes (Easterlin, 2021), people on higher incomes in the same survey wave should have as many unfulfilled wants as people on lower incomes (eliminating possible cohort-wide change over time).

It is important to evaluate the strongest existing evidence for insatiability on its own terms by using the same “big ticket” items used to demonstrate insatiability (Easterlin, 2001, 2005, 2021), and these items do reflect common wants (Bain & Bongiorno, 2022). However, findings based on these items or any finite set of economic goods cannot be conclusive because individuals might have unfulfilled wants for something not in that set. This issue can be addressed by focusing on wants for money (wealth aspirations), as money can be used

for whatever economic goods people want. Wealth aspirations can reflect a general desire for a lot of money (Bain & Bongiorno, 2022), or having more money than others, with these *relative* wants described as insatiable (Daly, 1987; Keynes, 1963). If everyone's wants are insatiable then everyone should want a lot of money (general wealth aspiration) or much more money than average (relative wealth aspiration). However, if a substantial number of people do not see relative or absolute wealth as part of the "good life", nor is it demonstrated for the big ticket items claimed to demonstrate insatiability in previous research, this would strongly call into question whether economic want insatiability is universal human nature.

The data collection period (1975-1991) spanned an important shift in US economic conditions/policies. Surveys began during a recession with high unemployment and inflation, followed by a 1980s neoliberal policy shift ("Reaganomics"; Morgan, 2008) stripping back social welfare/taxes and promoting free markets, self-interest, and wealth. Hence, we explored whether the extent of wants changed during this period. This can establish whether the extent of people's wants represents unchanging human nature or could be influenced by social/cultural factors such as shifting economic ideologies.

Method

Participants and Procedure

Participants were surveyed in-person by the Roper Organization, with data collected from 6 samples over a 16 year period (1975, 1978, 1981, 1984, 1988, 1991; total N=11865). Each sample was intended to be representative of the US adult population (more demographic information is available in Supplementary Materials S1). Data are available through the Roper Organization (<https://ropercenter.cornell.edu/roper-organization>) through subscription/request. While the sample size was determined by the Roper Organization, we calculated the implied power for detecting a small effect ($w=.10$ for χ^2 ; $f = .10$ for ANOVA), which was at least 88% (and as high as 99.99% for comparisons across survey waves).

Materials

The same "good life" questions were asked in all surveys:

"We often hear people talk about what they want out of life. Here are a number of different things. [presented on a card handed to the participant] When you think of the good life - the life you'd like to have, which of the things on this list, if any, are part of that

good life as far as you personally are concerned?"

The full list of 24 "things" were presented on separate lines labelled with the letters "a" to "x" in the following order: a. A home you own; b. A yard and lawn; c. A car; d. A second car; e. A vacation home; f. A swimming pool; g. A happy marriage; h. No children; i. One child; j. Two children; k. Three-children; l. Four or more children; m. A job that pays much more than average; n. A job that is interesting; o. A job that contributes to the welfare of society; p. A college education for myself; q. A college education for my children; r. Travel abroad; s. A color TV set; t. A second color TV set; u. A five day work week; v. A four day work week; w. Really nice clothes; x. A lot of money.

Participants indicated their wants by verbally stating the "thing" or its corresponding letter. To assess have's, after indicating their wants participants were given the following instructions: *"Now would you go down that list and call off all the things you now have'? Just call off the letter of the items."*

"Big-ticket" items. The ten-big ticket items were a home you own, a yard and lawn, a car, a second car, a vacation home, a swimming pool, a color tv set, a second color tv set, really nice clothes, and travel abroad.

Wealth aspirations. General wealth aspiration was indicated by choosing *"A lot of money"* as part of the good life. Relative wealth aspiration was indicated by choosing *"A job that pays much more than average"* as part of the good life.

Income. Income was assessed with the question: *"Now here is a list of income categories [presented on a card]. Would you call off the letter of the category that best describes the combined annual income of all members of this household, including wages or salary, pensions, interest or dividends, and all other sources?"*. Income categories changed across surveys, with the categories in each survey shown in Fig. 1.

Transparency and Openness

The study was not pre-registered. This was our first use of an existing dataset for which no test datasets were available, and required substantial work directly with each dataset to understand the data structures, coding schemes, and how to reproduce the measures used in previous research. At the point we had done this we had performed basic analyses and pre-registration was no longer appropriate. However, in Supplementary

Materials S2 we describe the series of analyses we performed and the reasons for selecting the approach used in the main report. Data and Materials are the property of the Roper Center at Cornell University and are available by request/subscription (<https://ropercenter.cornell.edu/roper-organization>). We note that many universities have subscriptions so the data is at least semi-publicly available to academics, and they were accessed by the second author through a university subscription. Programming syntax (SPSS) for reproducing the findings are available on the Open Science Framework at (https://osf.io/9nmdv/?view_only=f5142574fb854e8b9d4bca5ea70fa65e). We note that some analyses required comparisons across survey waves that involved us combining datafiles for these analyses – this means that syntax comparing survey waves is not directly usable, although it can be used to understand our approach and inform syntax development to reproduce the findings.

Results

Analyses were not pre-registered – an explanation for this and additional analyses not reported are described in Supplementary Materials S2. SPSS syntax is available at https://osf.io/9nmdv/?view_only=f5142574fb854e8b9d4bca5ea70fa65e.

Unfulfilled wants

For equivalence with previous research, we first examined the ten “big-ticket” items by calculated unfulfilled wants as the number of items they selected as part of the good life that they did not already have. Figure 1 shows the cumulative percentage of people with a specified number of unfulfilled wants (from 0 to 4+) at every income level in each wave. Across all waves, the percentage of people reporting *no* unfulfilled wants among the big-ticket items (black shading) was 33%, varying from a high of 38% in 1976 to a low of 25% in 1989. That is, people reporting no unfulfilled wants were not a tiny minority but a substantial proportion of these representative samples.

We next examined whether the percentage of people with no unfulfilled wants varied with income, analyzed separately for each wave as they used different income categories (details in Supplementary Materials S3.1). Significant associations between wants and income were identified in all years except 1988 (1988: $\chi^2(10)=15.65$, $p=.110$, *Cohen's* $w=.10$; all other years: $\chi^2>25$, $ps<.005$, *Cohen's* $ws=.12$ to $.16$, indicating small effects). In 3 of 6 waves the lowest income category had significantly fewer people with no unfulfilled wants

than expected by chance (adjusted standardised residuals < -2), and in 4 of 6 waves the highest income category had significantly more people with no unfulfilled wants than expected by chance (adjusted standardised residuals > 2). There was variation across survey waves, but categories with significantly fewer people than chance with no unfulfilled wants were always in the lower half of the income categories, and categories with significantly more people with no unfulfilled wants were always in the upper half of the income categories. Thus, there was a general but noisy positive relationship between income and satiation – those with higher incomes were more likely to report fully satisfied wants.

While the proportion of people with no unfulfilled wants are central to our research question, we also report average levels of wants by income category for more direct comparisons with previous research (shown in Figure 1 with white lines, with dashed lines showing linear associations and the number of wants for the lowest/highest income at each end of the line). There were significant mean differences across categories in all survey waves (all F s > 2.5 , all p s $< .005$, all η^2 in the range $.015 > \eta^2 > .031$ constituting small effects; details in Supplementary Materials S3.2). Polynomial contrasts showed a systematic negative linear slope in all waves, meaning that average unfulfilled wants were lower as income increased. Comparison of individual income categories shows more variation, but in all surveys except 1991 the highest income category had significantly fewer wants than the lowest income category, with between 0.7 and 1.3 fewer wants across surveys. These analyses show that average unfulfilled wants declined with income, inconsistent with the conclusions from Easterlin (2001, 2005, 2021).

The size of the black areas (representing no unfulfilled wants) across survey waves in Fig. 1 are smaller in later years, and analyses confirmed a systematic reduction over time in the proportion of samples reporting no unfulfilled wants, $\chi^2(5) = 116.86$, $p < .001$, *Cohen's w* = .10 (small effect). Adjusted standardized residuals showed that significantly more people than expected by chance had no unfulfilled wants in 1975, 1978, and 1981, and significantly fewer people than expected by chance had no unfulfilled wants in 1988 and 1991. Further analysis (Supplementary Materials S3.3) indicated that this was likely to be related to people increasing their wants – between 1975-1984 and 1988-1991 surveys, wants increased by about 1 on average and have increased by about 0.5. The period from the early to late 1980s reflects an overall cultural shift of increasing importance of this set of consumer goods for achieving “the good life”.

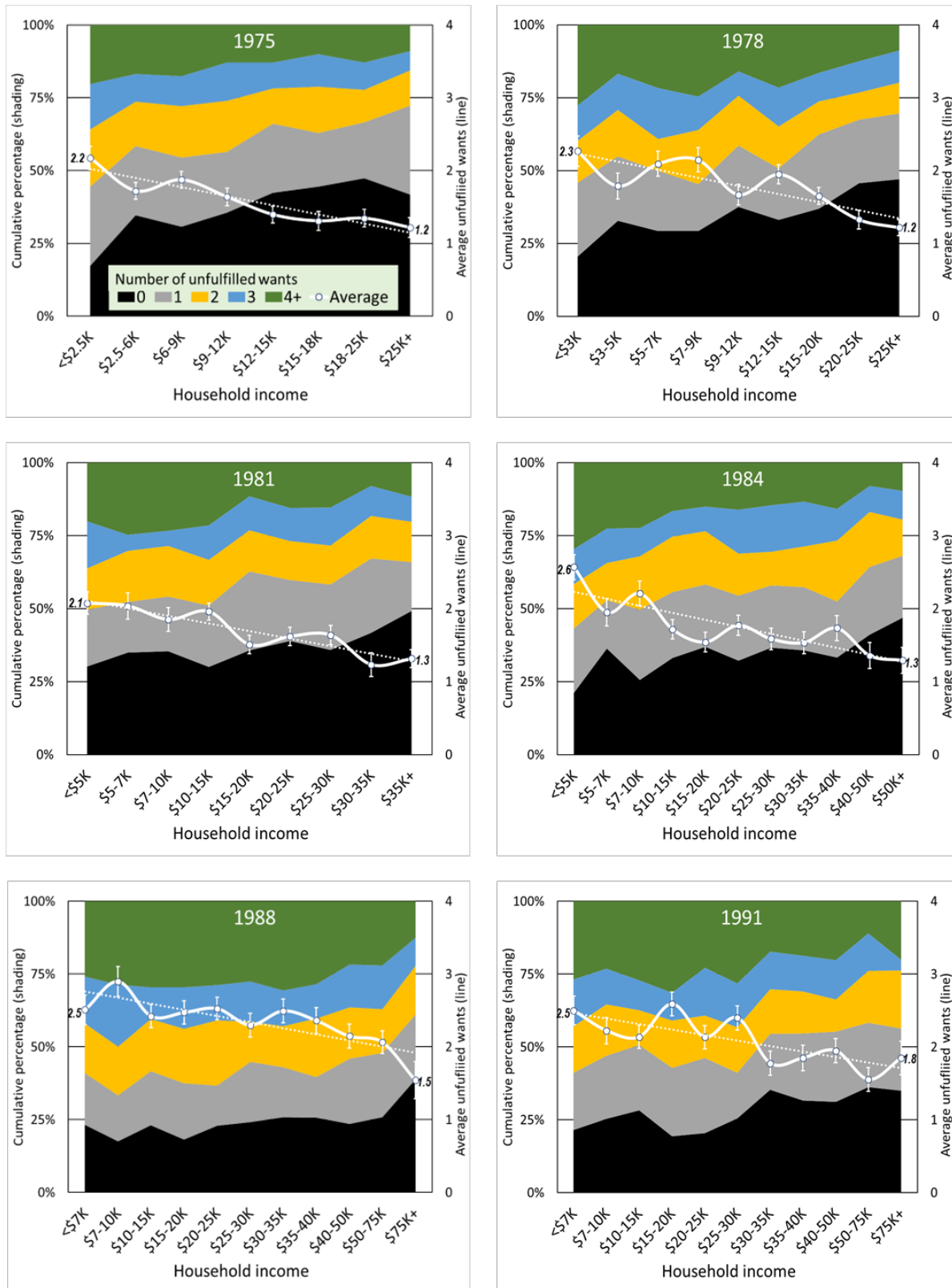


Figure 1. Number and average of unfulfilled wants by income categories.

Shading represents the number of wants across all levels of income, expressed as a cumulative percentage of the sample (left axis). Black shading represents the percentage of people with no unfulfilled wants. The solid white line (with standard errors) represents the average number of wants across incomes (right axis), with numbers at each end of the line the average unfulfilled wants at lowest/highest income categories, and the dashed white line shows the significant negative linear association between wants and income in all surveys. K represents 1000, e.g., \$7K means \$7000.

Wealth aspirations

Figure 2 shows the percentage of people across income categories and survey waves who chose relative wealth (“a job that pays much more than average”) and general wealth (“a lot of money”) as part of the “good life”. Far from being universal, both relative and general wealth aspirations were endorsed by between 30 and 70% of people across incomes and surveys.

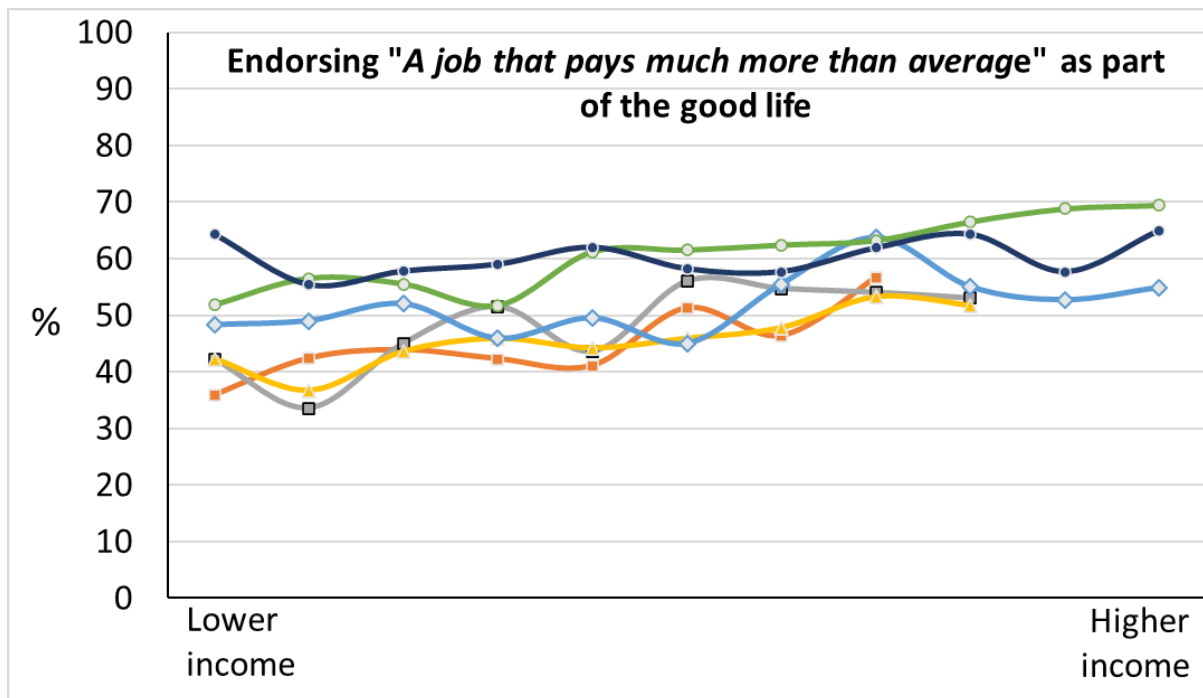
To understand this variation, we compared endorsement across income categories in each survey wave, as well as the average endorsement across survey waves (details in Supplementary Materials S3.4). For “a job that pays much more than average”, there was mixed evidence of income effects. There were no systematic income differences in 1981, 1984 or 1991 (all $\chi^2 < 18.3$, all $ps > .05$), but differences were identified in 1975, 1978 and 1988 (all $\chi^2 > 20.3$, all $ps < .02$) with those in low-income categories less likely to endorse relative wealth aspirations. Average endorsement also varied significantly across waves, $\chi^2(5) = 173.34$, $p < .001$, *Cohen’s w* = .12 (small effect), being selected by only a minority of people (47%) in the period 1975-1981 but rising to about 60% in the period 1988-1992.

For general wealth aspirations, selecting “a lot of money” was not systematically related to income in any wave (all $\chi^2 < 13.1$, all $ps > .07$), but increased significantly across waves, $\chi^2(5) = 297.70$, $p < .001$, *Cohen’s w* = .16 (small effect), being selected by only a minority of people (about 40%) in 1975-1981 but rising to almost 60% in 1988-1992.

These findings show that both general and relative wealth aspirations were far from universal. They were endorsed by only a minority of people in 1975-1981, and at most by less than two-thirds (in 1988). However, there was evidence indicating a significant cultural shift across the 1980s with an increasing proportion of the sample endorsing these wealth aspirations.

We note that different analytic choices could be made, particularly by analyzing only *unfulfilled* wealth aspirations to match the “big-ticket” items analysis. However, this would only decrease the proportion of those reporting unfulfilled wealth aspirations and thus would be stronger evidence against universal insatiability. As an indicator of the extent to which this would impact findings, the percentage who reported both a want and a have for a job paying much more than average was 13%, and for a lot of money it was 2%.

(a)



(b)

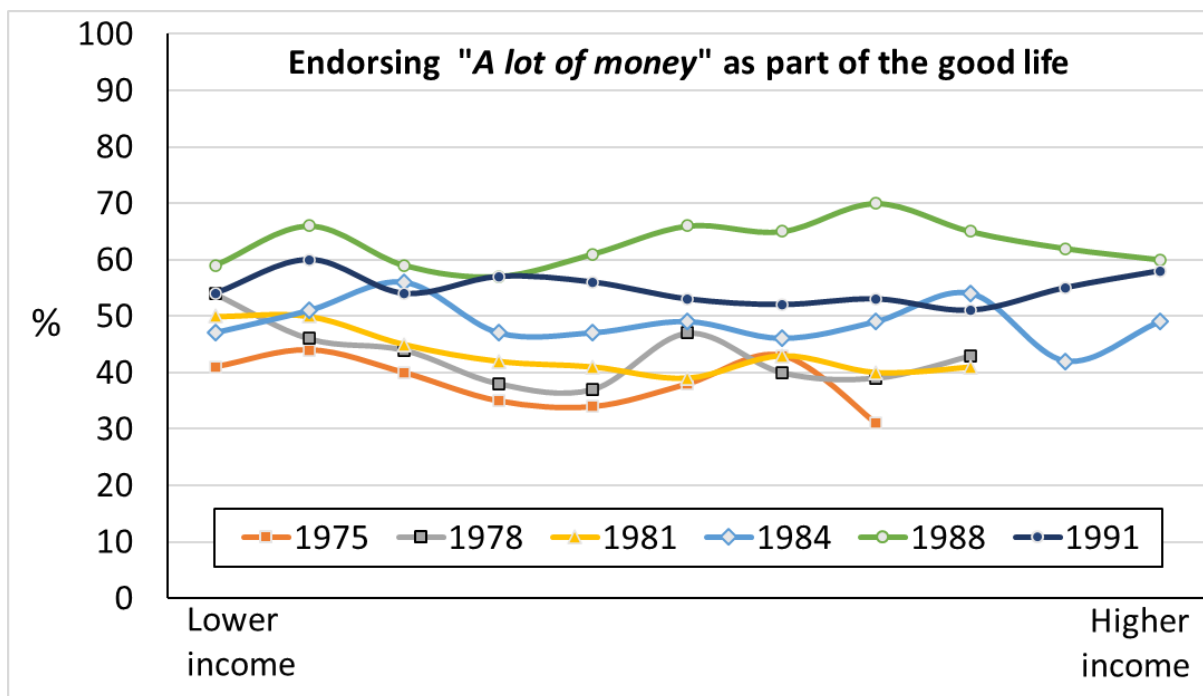


Figure 2. Percentage of people who reported (a) "a job that pays much more than average" (relative wealth aspiration); and (b) "a lot of money" (general wealth aspiration) as part of the good life.

Line lengths differ across survey years to reflect different numbers of income categories (from 8 in 1975 to 11 from 1984).

Discussion

Using a dataset and measure that provides the main empirical support for the insatiability of economic wants, but based on highly selective subsets of these data (Easterlin, 2001, 2005, 2021; Plagnol & Easterlin, 2008), re-analysis with all the data and further analysis that addresses its main limitation shows that insatiability is far from a universal “fact” about human nature. Undoubtedly, *some* people have insatiable wants, but about a third of participants reported no unfulfilled wants for “big ticket” consumer goods, and richer people were more likely than poorer people to have no unfulfilled “big ticket” wants and had fewer unfulfilled wants. Broader general and relative wealth aspirations were also far from universal, and even endorsed only by a minority in some years in these representative US samples.

The extent of unfulfilled economic wants also changed over time, particularly during the 1980s. While isolating causal influences is not possible, this change coincided with a shift from 1970s economic stagnation to 1980s neoliberal “Reaganomics” policies and rhetoric, which may have influenced beliefs about the importance of wealth and possessions. While theoretical developments in cultural dynamics (Kashima et al., 2019) may help to better understand links between individual and cultural change, regardless of the processes the findings suggests that the extent of economic wants may be influenced by social/cultural processes, and might even reduce in some circumstances.

As analyses used repeated cross-sectional rather than longitudinal data, they cannot assess changes in unfulfilled wants within individuals (Easterlin, 2021). However, if insatiable wants were human nature then virtually no one should report having no unfulfilled wants (satiation) at *any* point in time, and aspirations to achieve absolute or relative wealth should be near universal; yet neither of these propositions were supported. Moreover, the findings illustrate problems with mimicking longitudinality through synthetic cohorts to make within-subject conclusions (as Easterlin, 2021, does). Our analyses indicate that stability across synthetic cohorts may be explained by offsetting between-subjects processes – at any time people with higher incomes had fewer unfulfilled wants, but this was offset by whole-sample increases in unfulfilled wants over time. Yet while measuring economic wants across lifespans remains a difficult and unmet challenge, this also means a lack of evidence supporting want insatiability. Unless such evidence is provided it not safe to assume universal insatiability of wants.

These findings are relevant to the debates in psychology about wealth and wellbeing. While some find wellbeing does not increase beyond a certain income (Jebb et al., 2018), others find wellbeing rises even at high incomes (Killingsworth, 2021). While this describes average relationships, Killingsworth (2021) also found that the importance placed on money was a strong moderator, with the income-wellbeing relationship close to zero for those one standard deviation below the mean on money importance. This accords with our finding that only some people want to be wealthy, even as an ideal, and shows the importance of looking beyond average relationships to understand the role of wealth in behaviour and wellbeing.

These findings also have implications for social policy, particularly for economic growth (Kallis, 2017). Meeting ever-expanding wants requires perpetual growth; treating insatiability as “human nature” (a justification that increases perceived importance, Bain et al., 2006) underpins the primacy and even morality of pursuing growth, allowing modern economists to focus just on achieving growth efficiently (Campbell, 1987; Crespo, 2013; Galbraith, 1998/1958). However, perpetual economic growth contributes to ecological problems through increased resource use (Raworth, 2017; Steffen et al., 2011; Wiedmann et al., 2020). Finding that people’s wants are socially influenced and not inevitably insatiable weakens the moral case for prioritizing economic growth, suggesting more nuanced considerations. For example, societal wellbeing might be maximized by prioritising people with satiable wants (potentially achieving their ideal lives) over those with insatiable wants (for whom nothing will ever be enough). Similarly, satisfying common/basic wants (“needs”) or those most important to society-wide wellbeing could be prioritized over the current approach of giving equal value to all types of economic production (Galbraith, 1998/1958; O’Boyle, 1993).

This means re-engaging with older economic/social thought on insatiability that differed from modern economics. For example, for Adam Smith (1853) desires for excess were moderated by natural virtues of prudence and temperance, guided by justice principles and sympathy for others. In ancient Greece, Aristotle considered those with insatiable wants immoral, with society tasked to help such people achieve self-control (Aristotle, 1996; Campbell, 1987; Crespo, 2022; Kallis, 2019). More charitably, those with insatiable wants may reflect perceived norms reinforced through advertising and government policies about what matters for social status. Regardless of the reasons why

some people report insatiable wants, showing that insatiable wants is not universal human nature and the proportion of people with insatiable wants varies substantially over time (including that a *majority* in representative US samples did not see economic wealth as part of “the good life” just five decades ago) justifies revising this assumption to help find ways to reconcile human needs with ecological constraints. In particular, the findings justify closer consideration of “degrowth” policies that focus on reducing resource use while enhancing wellbeing, social justice, and equality (Hickel, 2020a, 2020b; Jackson, 2017; Kallis et al., 2018). Degrowth may face political challenges, but it is not inconsistent with human nature as implied by universal insatiability of economic wants.

The conclusion that the economic wants are not universally insatiable may seem controversial. It seems reasonable to believe that a position widely treated as obvious and that is foundational to a major social science must be supported by a wealth of systematic empirical evidence. But it is not. Using the most relevant dataset and a more comprehensive analysis indicates that having insatiable wants is far from universal. Assuming wants are unlimited is both unjustified and can have damaging consequences for the planet. Beyond rewriting textbooks, more sophisticated theories are needed to reflect this diversity of wants, and for a broader approach where psychology, economics, and other disciplines each contribute to policies for a more sustainable world. A better understanding of the extent and variability of people’s economic wants could not just extend understanding of economics, but is also so critical to societal functioning that it deserves much more substantial psychological attention.

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Are people's economic wants insatiable? Examining the psychology of a basic economic belief.

Supplementary Materials

Section S1. Data and availability

The Roper Reports surveys are available through subscription from the Roper Center for Public Opinion Research based at Cornell University (<https://ropercenter.cornell.edu/>). Programming syntax (in SPSS) for reproducing the findings are available on the Open Science Framework at (https://osf.io/9nmdv/?view_only=f5142574fb854e8b9d4bca5ea70fa65e). However, we note that some analyses required comparisons across survey waves so we combined datafiles for analysis – this means that not all syntax is suitable when analyzing each survey wave separately, although it can be used to understand our approach and inform syntax development to reproduce the findings.

We note that additional surveys were conducted beyond 1991 (up to at least 2003). These data were the property of NOP World, which no longer exists after acquisition in 2005 by Growth from Knowledge (GfK). Our attempts to contact GfK to establish if they still possessed this data and would grant access were unsuccessful, so we could not include these datasets.

As this study used an available archival dataset that did not contain personally-identifiable data, institutional ethics review was not required.

Sample and demographics

Household income: Participants were asked to estimate the combined annual income of all members of their household, including wages or salary, pensions, interest or dividends, and all other sources. In each year, 15-20% of the sample declined to provide their household income, so were not included in analyses using income. Where participants did not provide this information interviewers were asked to estimate their income, but we could not assess the criteria or reliability of these guesses and so we did not use interviewer estimates.

“Big ticket” items: Of the 11865 participants, 16 reported they had all 10 “big ticket” items, which may either reflect full satisfaction of wants or a ceiling effect of the measure. Due to their small number, inclusion/exclusion made no substantial difference to findings and we retained these cases.

Age. The age categories used varied across surveys. In the 1975 survey 5 categories were used (18-21, 22-29, 30-44, 45-59, 60 and over), while later surveys divided these broad categories into smaller increments (except for 18-21). In Table S1 we report the 5 main categories to simplify comparisons.

Table S1. Sample sizes and basic demographics.

Survey Year	Sample (N)	Sample providing household income	Gender (% female)	Age (% in category)				
				18-21	22-29	30-44	45-59	60+
1975	2001	1690	53	9	20	27	24	19
1978	1943	1608	53	10	20	26	23	21
1981	1988	1695	53	9	21	27	22	21
1984	1976	1588	53	7	21	28	22	21
1988	1971	1673	52	6	18	32	20	23
1991	1986	1590	53	8	17	32	19	24
TOTAL	11865	9844						

Section S2. Approach to analysis

This was our first use of this external dataset, and our unfamiliarity with the data format and coding required an initial phase to understand how the data was structured and coded and how to structure the analysis. This iterative process meant by the time we established what we believed was the most suitable approach, we had performed the basic analyses and analysis pre-registration was no longer appropriate. Instead, here we describe the series of analyses we performed to help contextualize and explain the analytical approach chosen for the manuscript.

“Big-ticket” items

1. For the ten “big-ticket” items, we first took what seemed the simplest approach and computed the sum of all *wants* and all *haves*, and subtracted haves from wants to create a single index, where zero would indicate no additional wants over haves. Initial analyses showed people with negative index values (more haves than wants) particularly for those with higher incomes.
However, a problem with this approach is that it included haves for items that are not wants, so a zero score does not reliably indicate that someone has every want fulfilled. While this approach *may* be defensible (as people should be expected to want all “big-ticket” items and to possess an item suggests it was a want at some point), we thought using it was likely to produce strong objections to counting haves that were not wants.
2. Based on curiosity about the negative values in the first analysis, we next tried to establish how many people classified each “big-ticket” item in 4 categories (want and have, want and do not have, do not want and have, do not want and do not have).
We started with the 1975 dataset and focused first on what we thought would be the most “luxurious” item and a want for higher-income people: a vacation home. The results were complex. The main story was that more than 60% of people in every income category reported a vacation home as something they did not want and did not have (neither a want nor a have). A more detailed analysis comparing adjusted standardised residuals across the four want categories and income categories showed that highest income people were relatively more likely to report a vacation home as an unfulfilled want (want and do not have), but even more likely relative to other income categories to report a vacation home as something they have but do not want, as well as a want they have.
Our conclusion was that these analyses were interesting but would be overly complex to report as they required separate analyses across each year for each item, and included analysis of categories likely to be seen as irrelevant (e.g., analysis of whether people have or do not have things they do not want).
3. Through these efforts we better understood the approach used by Easterlin and colleagues and used this as well. We focused just on those items each person expressed as wants and counted how many of those wants they did not have (unfulfilled wants), with a score of zero representing satiation (a person has every item they want) and all other scores representing unfulfilled wants. ***This is the analysis we report in the manuscript.***
4. We then undertook a further analysis to account for a possible concern that focusing on the *number* of unfulfilled wants in “big-ticket” items does not address differences in their *monetary value*. That is, our approach counts as equal whether a person wants a TV

(relatively low value) or a vacation home (relatively high value). This analysis had no bearing on our main goal of identifying how many people reported satiation (the value for someone with no unfulfilled wants remains zero). However, it could influence income-focused analyses as the identified decrease in average unfulfilled wants with income might be offset by an increasing value of these wants. For example, people on low incomes may be more likely to have an unfulfilled want for a TV (low value) and people on high incomes may be more likely to have an unfulfilled want for a vacation home (high value).

Therefore we imputed a nominal value to each “big-ticket” item to index its relative value (ranging from a TV = \$500 to a home you own = \$100,000), and calculated the total value of each person’s unfulfilled wants. We analysed relationships between these values and income, still finding that the value of unfulfilled wants showed a significant linear decrease as incomes rose in all survey years.

However, we chose to use the “count” analysis in the manuscript rather than monetary value for three reasons. First, we realised that imputing values does not clearly resolve the issue of monetary value because the value of wants for the same item could vary with income, e.g., a low-income person wanting a vacation home may be thinking about one worth \$50,000 and a high-income person may want one worth \$500,000. Yet addressing this by assigning higher values to items at different income levels would be assuming such a difference rather than establishing its existence. Second, the findings and interpretation were consistent with the “counts” analysis, so using monetary value added an additional level of researcher input (imputed values) without extra insight. Third, published research on wants using this dataset used the number of wants and not monetary value, so focusing on the number of wants means results are more comparable with previous research.

“A lot of money” and “a job that pays much more than average”

For analysis of “a lot of money” and “a job that pays much more than average”, we did not distinguish between people who reported they had achieved this want or not, reasoning that if ever-increasing wants are basic human nature, then people should endorse these as part of the good life even if they already had a lot of money or a relatively high income. This provides a more stringent test of the hypothesis that not everyone has unlimited wants, as these are counted as wants even if they are fulfilled.

Section S3. Detailed data and analyses

S3.1 Percentages of people reporting no unfulfilled wants (underlying data for Figure 1 and associated analyses)

Table S2. Percentage of participants reporting no unfulfilled wants across income categories, with χ^2 (adjusted standardised residuals in parentheses).

Year	χ^2	p	Cohen's <i>w</i>	Income category											All sample
				1 (lowest)	2	3	4	5	6	7	8	9	10	11	
1975	45.51	<.001	.16	17.2 (-4.9)	34.6 (-1.0)	30.7 (-2.4)	35.5 (-0.7)	42.3 (1.7)	44.4 (2.1)	47.3 (3.3)	41.7 (1.2)				37.8
1978	37.47	<.001	.15	20.5 (-3.2)	32.7 (-1.0)	29.2 (-1.9)	29.2 (-1.9)	37.6 (0.1)	33.0 (-1.3)	36.9 (-0.1)	45.6 (2.8)	47.0 (3.8)			35.8
1981	25.61	.001	.12	30.2 (-1.8)	34.9 (-0.5)	35.3 (-0.4)	30.0 (-2.6)	35.6 (-0.5)	39.0 (0.7)	35.8 (-0.4)	41.6 (1.2)	49.1 (4.1)			36.7
1984	25.22	.005	.13	21.2 (-3.1)	36.3 (0.4)	25.6 (-2.2)	33.2 (-0.4)	37.0 (0.8)	32.2 (-0.6)	36.6 (0.6)	35.7 (0.4)	33.3 (-0.3)	41.1 (1.5)	46.9 (2.9)	34.8
1988	15.65	.110	.10	23.2 (-0.2)	17.6 (-1.6)	23.1 (-0.2)	18.1 (-1.9)	22.3 (-0.3)	24.1 (0.1)	25.9 (0.7)	25.7 (0.5)	23.5 (-0.1)	25.8 (0.7)	38.9 (3.1)	24.9
1991	27.58	.002	.13	21.4 (-1.6)	25.4 (-0.7)	28.3 (0.1)	19.3 (-2.6)	20.5 (-2.3)	25.5 (-0.7)	35.3 (2.1)	31.7 (1.0)	31.2 (0.9)	36.2 (2.5)	35.0 (1.4)	28.9
All surveys															33.2

Notes. The number of income categories in each survey varied from 8 (in the 1975 survey) to 11 (from the 1984 survey), with cells greyed out in years with fewer than 11 categories. Cohen's *w* effect sizes are all classified as small using a common rule of thumb (.10 < *w* < .30). Red shading highlights adjusted standardised residuals significantly lower than expected by chance, and green shading highlights adjusted standardised residuals significantly higher than expected by chance.

S3.2. Mean (SD) number of wants across income categories (underlying data for Figure 1 and associated analyses)

Table S3. Mean (SD) unfulfilled wants at different incomes

	F	p	η^2 (effect size) [Confidence Interval]	Linear pattern estimate	p	Quadratic pattern estimate	p	Income category										
								1 (lowest)	2	3	4	5	6	7	8	9	10	11
1975	5.64	<.001	.02 [.01,.03]	-.81	<.001	.16	.240	2.1 _a (1.9)	1.7 _{abc} (2.0)	1.9 _{ab} (2.1)	1.6 _{abc} (1.8)	1.4 _{bc} (1.7)	1.3 _c (1.6)	1.3 _{bc} (1.8)	1.2 _c (1.6)			
1978	6.31	<.001	.03 [.01,.04]	-.86	<.001	-.26	.103	2.3 _a (2.0)	2.1 _{abc} (2.0)	2.1 _a (2.1)	2.1 _a (2.1)	1.7 _{abc} (2.0)	1.9 _{ab} (2.0)	1.6 _{abc} (2.0)	1.3 _{bc} (1.7)	1.2 _c (1.6)		
1981	4.46	<.001	.02 [.01,.03]	-.80	<.001	-.02	.880	2.1 _a (2.1)	2.0 _a (2.3)	1.8 _{ab} (2.0)	2.0 _a (2.0)	1.5 _{ab} (1.7)	1.6 _{ab} (1.9)	1.6 _{ab} (1.8)	1.2 _b (1.5)	1.3 _b (1.8)		
1984	4.82	<.001	.03 [.01,.04]	-1.00	<.001	.29	.078	2.6 _a (2.4)	2.2 _{abc} (2.1)	2.2 _{ab} (2.3)	1.7 _{bc} (1.9)	1.5 _{bc} (1.7)	1.8 _{bc} (1.8)	1.6 _{bc} (1.7)	1.5 _{bc} (1.5)	1.7 _{bc} (1.8)	1.4 _c (1.8)	1.3 _c (1.8)
1988	2.58	.004	.02 [.00,.02]	-.88	<.001	-.38	.057	2.5 _{ab} (2.4)	2.9 _a (2.5)	2.4 _{ab} (2.2)	2.5 _{ab} (2.0)	2.5 _{ab} (2.2)	2.3 _{abc} (2.1)	2.5 _{ab} (2.3)	2.4 _{abc} (2.1)	2.1 _{abc} (2.0)	2.1 _{bc} (1.9)	1.5 _c (1.9)
1991	3.66	<.001	.02 [.01,.03]	-.80	<.001	-.07	.730	2.5 _{ab} (2.3)	2.2 _{abc} (2.2)	2.1 _{abc} (2.1)	2.6 _a (2.3)	2.1 _{abc} (1.8)	2.4 _{ab} (2.2)	1.8 _{bc} (1.9)	1.8 _{abc} (2.0)	1.9 _{abc} (2.1)	1.6 _c (1.8)	1.9 _{abc} (2.2)

Notes. Using rules of thumb for η^2 , effect sizes are classified as small ($.01 < \eta^2 < .06$). Post-hoc comparisons in each year (row) are adjusted using Tukey's HSD. Within rows, cells with no shared subscript denote significant differences between income categories.

S3.3 Supplemental analyses examining change in unfulfilled wants over time.

As seen in Table Sx below, both wants and have experienced both a liner and a quadratic pattern of increase over time, from being relatively stable in earlier surveys to increasing at a great rate in later surveys. As both changes were quadratic to similar degrees, the pattern for unfulfilled wants reflected a significant linear increase only over the survey period.

Table S4. Means (SD) across survey waves for the number of total wants, wants people already have, and unfulfilled wants.

	F	p	η^2 (effect size) [Confidence Interval]	Linear pattern estimate	p	Quadratic pattern estimate	p	Year					
								1975	1978	1981	1984	1988	1991
Total wants	71.88	<.001	.03 [.02,.04]	.87	<.001	.30	<.001	4.0 _{ab} (2.4)	4.2 _b (2.5)	3.9 _a (2.6)	4.2 _b (2.3)	5.1 _d (2.7)	4.9 _c (2.7)
Wants already have	21.55	<.001	.01 [.01,.01]	.32	<.001	.27	<.001	2.5 _b (1.9)	2.4 _b (1.9)	2.2 _a (2.0)	2.4 _b (2.0)	2.8 _c (2.2)	2.8 _c (2.2)
Unfulfilled wants	44.26	<.001	.02 [.01,.02]	.55	<.001	.03	.506	1.5 _a (1.8)	1.8 _b (2.0)	1.7 _{ab} (1.9)	1.8 _b (1.9)	2.4 _d (2.2)	2.1 _c (2.1)

Notes. Using rules of thumb for η^2 , effect sizes are classified as small ($.01 < \eta^2 < .06$). Post-hoc comparisons in each year (row) are adjusted using Tukey's HSD. Within rows, cells with no shared subscript denote significant differences between income categories.

S3.4 Wealth aspirations (underlying data for Figure 2 and associated analyses)

S3.4.1 Responses to the item “a job that pays much more than average”.

Table S6. Percentage of participants across income categories choosing “a job that pays much more than average” as part of the good life, with χ^2 analyses (adjusted standardised residuals in parentheses).

Year	χ^2	p	Cohen's <i>w</i>	Income category										
				1 (lowest)	2	3	4	5	6	7	8	9	10	11
1975	20.37	.005	.11	35.9 (-2.1)	42.4 (-0.9)	43.9 (-0.4)	42.3 (-0.9)	41.1 (-1.3)	51.3 (1.9)	46.4 (0.5)	56.7 (3.3)			
1978	26.21	<.001	.13	42.2 (-1.5)	33.6 (-3.6)	45.0 (-1.2)	51.5 (0.3)	43.6 (-1.9)	56.0 (1.8)	54.7 (1.7)	54.0 (1.2)	53.0 (1.1)		
1981	11.44	.178	.08	42.3 (-1.0)	36.7 (-2.1)	43.6 (-0.6)	45.9 (-0.1)	44.2 (-0.7)	45.9 (-0.1)	47.8 (0.5)	53.3 (1.7)	51.7 (1.8)		
1984	18.27	.051	.11	48.3 (-0.8)	49.0 (-0.5)	52.0 (0.1)	45.9 (-1.8)	49.5 (-0.6)	45.0 (-1.9)	55.5 (1.0)	63.7 (3.2)	55.0 (0.8)	52.7 (0.2)	54.9 (0.7)
1988	22.93	.011	.12	51.8 (-2.0)	56.5 (-0.9)	55.5 (-1.5)	51.7 (-2.6)	61.2 (0.1)	61.5 (0.2)	62.4 (0.5)	63.2 (0.6)	66.5 (1.6)	68.8 (2.4)	69.4 (1.5)
1991	5.83	.830	.06	64.3 (1.0)	55.4 (-1.1)	57.8 (-0.6)	59.0 (-0.3)	62.0 (0.6)	58.2 (-0.5)	57.7 (-0.6)	61.9 (0.5)	64.3 (1.1)	57.7 (-0.6)	65.0 (0.9)

Notes. The number of income categories in each survey varied from 8 (in the 1975 survey) to 11 (from the 1984 survey), with cells greyed out in years with fewer than 11 categories. Cohen's *w* effect sizes are classified as either very small ($w < .10$) or small ($.10 < w < .30$). Red shading highlights adjusted standardised residuals significantly lower than expected by chance, and green shading highlights adjusted standardised residuals significantly higher than expected by chance.

S3.4.2 Responses to the item “a lot of money”.

Table S5. Percentage of participants across income categories choosing “a lot of money” as part of the good life, with χ^2 (adjusted standardised residuals in parentheses).

Year	χ^2	p	Cohen's w	Income category											
				1 (lowest)	2	3	4	5	6	7	8	9	10	11	
1975	13.04	.071	.09	40.6 (0.6)	43.6 (1.9)	39.8 (0.6)	34.6 (-1.2)	34.3 (-1.3)	37.6 (-0.1)	42.9 (1.6)	30.6 (-2.2)				
1978	12.64	.125	.09	54.2 (2.3)	46.0 (0.9)	44.2 (0.5)	37.7 (-1.1)	37.0 (-1.5)	46.9 (1.5)	39.8 (-0.9)	38.6 (-1.1)				43.1 (0.4)
1981	8.57	.380	.07	50.3 (2.0)	49.5 (1.5)	45.1 (0.6)	41.9 (-0.3)	41.2 (-0.5)	38.5 (-1.4)	43.3 (0.2)	40.1 (-0.6)				40.9 (-0.6)
1984	7.42	.685	.07	47.5 (-0.3)	51.0 (0.5)	56.0 (1.7)	47.3 (-0.4)	46.9 (-0.5)	48.9 (0.1)	45.7 (-0.8)	49.0 (0.1)	54.2 (1.3)	42.0 (-1.5)	48.7 (0.0)	
1988	9.52	.483	.08	58.9 (-0.9)	65.7 (0.7)	59.0 (-1.1)	57.4 (-1.6)	61.2 (-0.5)	65.5 (0.8)	65.3 (0.7)	70.1 (1.9)	64.7 (0.6)	62.4 (-0.1)	59.7 (-0.5)	
1991	4.30	.933	.05	54.5 (0.0)	60.0 (1.3)	54.2 (-0.1)	57.2 (0.7)	56.1 (0.4)	52.9 (-0.4)	51.9 (-0.7)	52.5 (-0.5)	50.6 (-1.1)	55.2 (0.2)	57.5 (0.5)	

Notes. The number of income categories in each survey varied from 8 (in the 1975 survey) to 11 (from the 1984 survey), with cells greyed out in years with fewer than 11 categories. *Cohen's w* effect sizes are all classified as very small ($w < .10$). Red shading highlights adjusted standardised residuals significantly lower than expected by chance, and green shading highlights adjusted standardised residuals significantly higher than expected by chance.

S3.4.3 Supplemental analyses examining change in wealth aspirations over time.

Table S7. Comparisons of the percentage of wealth aspirations across survey years

	χ^2	p	Cohen's w	Year						
				1975	1978	1981	1984	1988	1991	All surveys
Wealth aspiration										
A job that pays much more than average	173.3	<.001	.12	45.2 (-6.7)	49.8 (-2.1)	45.3 (-6.5)	52.1 (0.1)	60.4 (8.2)	59.2 (7.1)	52.0
A lot of money	297.7	<.001	.16	38.2 (-9.9)	44.6 (-3.6)	42.8 (-5.4)	47.6 (-0.7)	62.0 (13.3)	54.8 (6.3)	48.3

Notes. Cohen's w effect sizes are all classified as small ($.10 < w < .30$). Red shading highlights adjusted standardised residuals significantly lower than expected by chance, and green shading highlights adjusted standardised residuals significantly higher than expected by chance.