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Saving and attitudes to the future

Abstract

How are variations in inter-temporal preferences or planning behavior linked to inequality among households in long-term outcomes, such as savings, marriage or health? We use a simple regression method to develop an index of "future-orientedness" based on how an individual's reported attitudes in the 1970s predict wealth many years later. Our results suggest that variation in planning matters more for future net worth than discount rates. We find that this index also has statistically significant effects on offspring savings and on non-financial choices such as the timing of children.

John Knowles
Simon Fraser University

Andrew Postlewaite
University of Pennsylvania

1. Introduction

The degree to which savings behavior is determined within families is central to a number of important economic questions. Disparities in household wealth are much larger than standard economic theory predicts, and empirical work has shown (Benhabib *et al.* [2017]) that standard economic theories leave much of the variation in wealth unaccounted for.

People who seem to be in identical, or at least similar, circumstances often make very different decisions. Some save substantial amounts of money over decades while others save little. Standard economic theories of inequality typically treat these differences as due to variation in inter-temporal discounting—the degree to which preferences trade off utility flows over time. Other important alternative explanations of wealth inequality within the standard model focus on the role of business ownership (Cagetti and De Nardi [2006]) or differences in the age profile of income and health expenses (Hubbard *et al.* [1995]). Less standard approaches to variation in inter-temporal preferences concern the ability or propensity of agents to implement rational planning for the future, such as Caplin *et al.* [2022].

Economics typically takes as given the relevant variation in personality traits, such as the preferences or planning ability of agents. But before becoming household decision-makers, individuals spend many years as children in a family environment devoted to influencing their personality, whether through direct investments such as schooling or parental time and effort, or through more passive cultural transmission. Furthermore, the resulting family effects may compete with or complement the genetic inheritance of the offspring from their parents. If personality traits underlie savings variation, we should expect, therefore, to find a significant linkage between the characteristics of parents that contribute to savings inequality and those of the adult offspring.

In this paper, we loosely define "Future-Orientedness" as the collection of personality traits that contribute to observed variation across individuals in inter-temporal behavior, whether it is due to preferences or other personality traits. We use a simple life-cycle savings model to show that variation in savings rates, holding the income-growth rate constant, can only be interpreted as evidence of preferences variation in the absence of household-specific variation in the rate of return to savings. While this absence is a standard assumption in macroeconomics, recent empirical research suggests a significant linkage between wealth inequality and rate of return variation. This feature is common to Euler equations derived from more general neo-classical savings models with preferences that have intertemporally additive separability. To distinguish the effects of Future-Orientedness from financial sophistication, this paper relies on a more direct approach.

We link data from the Panel Study of Income Dynamics (PSID) on savings behavior of families to a series of questions related to attitudes about the future that the PSID asked in the late 1960's and early 1970's. Examples of the questions are "Would you rather save more for the future or spend your money and enjoy life today?" and "Are you the kind of person that plans his life ahead all the time, or do you live more from day to day?" For each individual, this gives rise to a vector of responses; given the panel nature of the PSID, we measure whether these responses have any predictive power for future savings, using regression analysis to control for initial wealth, income and education. Since these attitude questions ask about personality traits, rather than financial sophistication, we are inclined to interpret any such predictive power as evidence of a role for future-orientedness.

We find statistically significant correlations between these responses and household savings of married couples a decade or more later (between 1984 and 1999). The exception is the question "Do you prefer to spend now or save for the future?", the most direct measure of inter-temporal preferences in the survey. We infer from this that variation in planning is more important than variation in preferences, contrary to the neo-classical approach where agents are assumed to costlessly implement the optimal savings/consumption program.

We use the resulting coefficient estimates to create a single digit Attitude Index (AI) for each individual, equal to the predicted effect of their attitude responses on their future household wealth-income ratio. Of course, variation in this index may still reflect correlation of attitudes with rate of return variation. It may be for example that people who plan gain access to better savings opportunities with higher rate of return.

We can, however, distinguish direct effects of AI from associations of AI with financial sophistication by asking whether AI helps to predict other outcomes where financial sophistication does not play a role. The AI's we

construct from the responses to the attitude questions predict more than financial choices and outcomes. Men with low AI are more likely to smoke, and if they try to quit smoking, they are less likely to succeed. Since the same AI that matters for wealth matters for non-financial behavior, we interpret this result as supporting the hypothesis that the link to savings behavior is not driven solely by financial acumen.

When we ask how attitudes affect saving behavior, we must keep in mind that we have a single wealth measure for the household but two separate people whose behaviors affects saving—husband and wife. It is important to understand what happens to household saving when the two disagree on how much to spend on clothing or vacations; whose attitudes are a better predictor of saving? Since wives typically live longer than their husbands, they should have a stronger interest in saving, as Browning [2000] points out.[1] We show that the wife's AI is less important in predicting savings than the husband's, but the relative weight on her AI increases as the sum of the two AI's increases (that is, when the household as a single unit is more future-oriented).

We now turn to the inter-generational link in future-orientedness. Since the offspring of the original PSID respondents are also included in the survey, we can estimate the effect of parent's AI on household savings for the married adult offspring. We estimate a regression equation for savings similar to that used for the parents, with controls for initial wealth, health, education and income, but now including instead of the attitude responses of the spouses, the AI of the parents, either of the husband or of the wife. We find that a couple's responses in the 1970s are correlated with their offspring's wealth-income ratios from 2001-2019.

1.1 Related literature

In an earlier attempt at uncovering inter-generational links in savings (KP2005), we analyzed the intergenerational correlation of the regression residual in household savings rates. The current paper can be seen as building on the previous paper by focusing on the role of personality as evidenced by the attitude responses, and by reliance of the estimation on additional years of wealth data.

It has been documented that here is substantial intergenerational persistence of wealth (see e.g., Charles and Hurst [2003] for the U.S. and Clark and Cummins [2103] for the U.K.). In addition to the work done at the macro level on the determinants of the wealth distribution, there has been substantial empirical work that aims at identifying the determinants of savings at the individual level. Understanding why households differ in wealth accumulation is essential to evaluate policies whose aim is to affect that distribution. Obviously, part of the difference in wealth accumulation is due to differences in households' income, both labor and non-labor income. But a household's wealth at any given point in time reflects not just its income, but also its willingness or ability to reserve part of that income for the future. Solon [1992], Zimmerman [1992] and Behrman and Taubman [1990] find intergenerational transmission of economic status, both in wages and income.[2] Bernheim *et al.* [2001] also find that standard life cycle variables do not explain wealth variation. They argue that "rules of thumb" or other less than fully rational decision processes, including behavioral rules, are more consistent with their findings. Lusardi [2000] finds that households differ in the degree to which they have thought about retirement, and that those households that think more about retirement have substantially higher wealth than those that have given less thought. Ameriks *et al.* [2003] confirm and expand on Lusardi's findings. They use survey information from TIAA-CREF participant households that includes questions intended to measure individual and household behavioral and psychological characteristics to construct a measure of "propensity to save." They show that differences in planning are related to this propensity to save and are associated with different savings patterns. The survey Ameriks, use for their analysis has questions aimed at uncovering discount rates, and they use the answers to these questions to construct a measure of individuals' discount rates. There is no positive correlation between their measure of propensity to save and the measure of the discount rate, from which Ameriks *et al.* argue that there is an "attitude" toward saving that is not captured by standard decision models, and that is important in understanding wealth accumulation. The role of financial acumen has been stressed in a number of studies of household wealth inequality. Lusardi and Mitchell [2014]

1 See also Browning *et al.* [2014] for a discussion of these matters.

2 See Grawe and Mulligan [2002] for a review of theories of this linkage across generations.

provide an overview of the theory and empirical work in this area. Barth *et al.* [2020] and Lusardi *et al.* [2017] provide recent contributions to this question.

1.2 Future-orientedness

We are interested in decision problems in which choices today affect not only outcomes today but affect optimal choices and outcomes in the future. We use the term *future-orientedness* to capture the importance of future consequences in an individual's choices today. We do not provide a specific definition of future-orientedness as our empirical results are consistent with more than one model. We will, however, often use standard geometric discounting as a leading example.

The typical way that this is modeled is by assuming that an individual uses geometric discounting to evaluate intertemporal outcomes. There are alternatives to this method, such as hyperbolic discounting or rational inattention. Distinct from geometric discounting and variants thereof, there are qualitatively different modes of future-orientedness. People may care equally about the future relative to today; that is, they agree on the constrained-optimal consumption path but differ in their ability to attain that path. In terms of rational behavior, deviations from the optimal path may be explained by dynamic inconsistency in preferences or biased beliefs about future income. On the basis of behavioral data alone, it is often impossible to identify why some people fail to implement the plan required to attain the optimal path, or even if such failures exist.

2. Model

In this section we develop a simple neo-classical model of household savings across generations. Our goal was to achieve the simplest model of savings that admits choices over occupation and savings rate, so as to provide a coherent framework for the empirical analysis, without recourse to numerical solutions. To achieve this, we abstract from many of the important concerns of the savings literature, including, *inter alia*, uncertainty, parental altruism, mortality risk and business ownership. Some of these concerns will arise in the course of our empirical analysis, however, so in this sense our model is too simple to provide the basis for a structural estimation.[3]

In our model, variation in future-orientedness takes the form of variation in the discount factor, which governs both the choice of occupation and the choice of savings. Whether other forms of future-orientedness can be represented in this way is a question we do not deal with, but this is known to be true for the case of "hyperbolic" discounting, where inability to commit to the optimal plan reduces the effective discount factor when preferences are logarithmic, as in our model.

We augment the model with a simple equation governing the transmission of attitudes from parents to offspring. We complete the model with an equation that relates the unobservable discount-factor variation to noisy indicators, such as the attitude responses.

The model allows us to make a few basic points. First, discount-factor variation will show up as a level effect in a linear regression where the wealth/income ratio is the dependent variable. This is a convenient property for the sake of keeping the regression analysis simple and easy to interpret. Second, education is not a suitable control variable for a wealth regression as it is likely to be determined by the same sort of variation in discount factor that generates variation in savings behavior. This applies more generally to any sort of career choice that involves a trade-off between current income and the income growth rate, in particular the decision to start a business.

The inter-generational transmission equation shares with the baseline models of quantitative genetics the key property of additivity. In quantitative genetics, which deals with the inheritance of complex traits, including personality, environmental and genetic effects on the offspring's traits are often assumed to be additively separable; see Falconer and Mackay [1996] for a standard source on this literature. Examples of recent related research include an influential study in behavioral genomics, Okbay *et al.* [2016]), who identify dozens of genes associated with education variation within populations around the world. Barth *et al.* [2020], say that it is not settled what factors account for differences in wealth accumulation, but that genetic transmission of characteristics associated with wealth accumulation may drive persistence of wealth.

3 Ideally, structural estimation would require a model with stochastic income and mortality, a mechanism of intra-household allocation, and choices over occupation, business ownership and investment portfolio, with some provision for borrowing constraints.

The basic assumptions of the genetics approach imply that, on average, both parents have equal impact on the genetic outcomes of the offspring and that the impact of each gene on the offspring's trait is independent of the effects of other genes that may be present, and of environmental factors, such as income or initial wealth.[4]

1.1 Life-cycle savings

Agents are individuals of both sexes, indexed by i, who live for three periods, $t \in \{1,2,3\}$. All agents marry in the first period live thereafter as married-couple households and produce offspring in the second period. Each period t, agents in life stage t receive non-financial income $y_{i,t}$, which grows over time at a constant rate = $\gamma_{i,t}$; both parameters are deterministic functions of education $e_i \in R_+$. To acquire education, agents pay a unit utility cost $1/\eta_i$; we interpret η_i as innate ability, which has no effect in later life, conditional on education. Each household has access to a risk-free asset a_i with a rate of return r_i that may vary by household. There is no uncertainty and no borrowing constraints. The timing of decisions is as follows:

$t = 1$: agents choose education e_i consumption $c_{i,1}$ and savings $a_{i,1}$.

$t = 2$: agents choose consumption $c_{i,2}$. and savings $a_{i,2}$.

$t = 3$: agents consume $c_{i,3}$ and then die.

Preferences are represented by a utility flow each period, which we specialize to equal the log of consumption: $U(c_{i,t}) = \ln c_{i,t}$. Agents discount their future utility at rate β_i per period. Preferences over the consumption stream c_i are given by the discounted sum of the utility flow each period:

$$U(c_i) = [u(c_{i,0}) + \beta_i u(c_{i,1}) + \beta_i^2 u(c_{i,2}) = \log(c_{i,0}) + \beta_i \log(c_{i,1}) + \beta_i^2 \log(c_{i,2}).$$

Optimal savings

Optimal savings behavior in period 2 implies a linear equation:

$$w_{i,2} = \lambda_0 + \lambda_{1_{i,1}} + \ldots \quad (2)$$

where $w_{i,t} \equiv a_{i,t}/y_{i,t}$ represents the wealth/income ratio at the end of period t. Solving for the reduced-form parameter, λ_1, this can be written as:

$$w_{i,2} = \alpha_0 + \alpha_1 w_{i,1} + \alpha_2 g(e) + \upsilon\alpha_i, \quad (3)$$

Where

$$\alpha_1 = \alpha_0 \equiv \frac{\beta}{1+\beta}[1+r] < 1 \alpha_2 \equiv \left[\frac{\alpha_0 - 1}{1+r}\right] < 0 \quad (4)$$

and υ_i reflects the contributions of unobserved variations across sample members in $\beta, r,$ and $g(e)$. The significance of this result is that it suggests that variation in β will be reflected in the coefficient of $w_{i,1}$ in a linear regression equation with two observable control variables.

1.1.1 Education choice

At $t = 1$, after completion of education, the value of having education e_i, given initial wealth a_{0i} can be written as:

$$V(e_i, a_{0i}, r_i) = \left(1 + \beta_i + \beta_i^2\right) \ln W(e_i, a_{0i} r_i) + X(\beta_i, r) \quad (5)$$

where the X term is independent of education. The agent chooses education to maximize lifetime utility:

$$\max\{-e/\eta_i + V(e, a_{0i})\}_e$$

Assume the solution is interior. The first-order condition is

$$-1/\eta_i = V_e(e, a_{0i}) = (1 + \beta_i + \beta_i^2) \frac{W_e(e_i, a_{0i})}{W(e_i, a_{0i})}$$

The RHS is clearly increasing in β_i. It is also decreasing in a_{0i}, as an increase in wealth reduces the marginal benefit of education. In the neighborhood of $a_{0i} = 0$, the ratio term is independent of r_i, but is increasing in r_i for $a_{0i} > 0$ and decreasing for $a_{0i} i < 0$. Higher education is, therefore, associated with higher values of β_i and η_i and lower values of a_{0i}, while the effect of r_i is ambiguous. The dependence of education on β_i will give rise to an endogeneity problem that we deal with in the estimation below. The dependence of education on initial assets and ability may also cause similar issues, depending on the correlations of these variables with β_i in the population.

4 This approach is not directly applicable to the analysis of wealth levels because these are likely to depend in a non-linear way on environment variables such as income and education. However, additivity of the family effect on the wealth-income ratio in our model has the virtue of being independent of income and other environment variables and so can play the role of phenotype in the genetics model. The adaptability of our model to the genetics model is, therefore, a helpful feature that would be lost in more sophisticated models.

1.2 Inter-generational transmission

We next lay out the model of inter-generational transmission. Suppose that variation across households in the parameter value λ_{1i} has an inherited component that is influenced by the realized values of the parents of the householders. To simplify the discussion, we first consider a model where each household i has one parent household ip. Suppose that the parent's factor λ_{1ip} is related to that of the offspring, λ_{1i} by a linear transmission equation:

$$\lambda_{1i} = \gamma_{0k} + \gamma_{1k}\lambda_{1ip} + \upsilon_{ip}^{\gamma}. \quad (6)$$

Suppose that we observe an imperfect measure $\hat{\lambda}_i of\ \lambda_{1i}$:

$$\lambda_{1i} = \delta_{0k} + \delta_{1k}\left[\hat{\lambda}_i + v_i^{\delta}\right] \quad (7)$$

Combining the above two equations, we can relate the parent's measured $\hat{\lambda}_{i_{ip}}$ to the actual value of the offspring:

$$\lambda_{1i} = \phi_{0k} + \phi_{1k}\left[\lambda_{1ip}\right] + \epsilon_{\phi}. \quad (8)$$

Next, extend the analysis to two parents with imperfect assortment, where offspring inherit the average of their parent's value of λ_{1i}. We assume the effects of each parent's value of λ_{1i} on that of the kid's:

- are the result of the additive effects of many underlying individual-specific traits
- are independent of the effects of the environment (wealth, education, income etc.) Together, these assumptions imply that each parent has equal impact on the child's value of λ_{1i}. This coincides with one of the key implications of the AGM, the standard model of quantitative genetics, discussed earlier. However, a less restricted version of the model may be useful to allow for unequal effects of father and mother on the offspring.

If transmission was solely genetic, then under the AGM we wouldn't expect this imbalance. There may, of course, be some genetic transmission, but imbalance between the parental effects suggests the presence of cultural transmission as well.

2.1 Other inter-temporal decisions

There are no other inter-temporal decisions in our model, but to the extent that variation in λ_i reflects variation in β_i rather than in r_i, variation in λ_{1i} should influence variation in other inter-temporal decisions, such as health, marriage or fertility timing. Thus, if we assume that variation in r_i is orthogonal to the implicit rates of return on these other decisions, evidence that λ_i influences these decisions would suggest that λ_i indeed reflects variation in β_i rather than in r_i. More broadly, this is interesting because it would be evidence that an economic model of these decisions is relevant; that is, that people include in these decisions an element of intertemporal trade-offs.

3. PSID attitude survey

From 1968 through 1972, The PSID asked the household "head" a series of questions concerning efficacy and planning.[5] The same questions were also asked of the spouse of the head in 1976. The responses are coded as five-point Likert scales, which reflect the degree of agreement with one or the other of two alternatives. We isolate six attitude questions that are plausibly pertinent to savings decisions. These questions, shown in Table 1, were also asked of spouses in 1976. For each question, an individual gave one of five responses, where a "1" indicates the response associated with the least future-orientedness, and a "5" indicates the strongest degree of future-orientedness.

5 For married couples living together, the head is almost always the husband. Singles living alone, male or female, are also household heads. Details of the choice of these questions can be found in Freedman (2017) "Measuring Intelligence and Achievement Motivation in Surveys."

Table 1. Attitude questions and responses

LIFE WORKS OUT		
1	45.48	Usually been pretty sure.
5	38.4	More times when not very sure about it.
PLANS AHEAD		
1	41.48	Plan ahead.
5	45.48	Live more from day to day.
CARRIES OUT PLANS		
1	47.86	Usually get to carry out things the way expected.
5	34.53	Things usually come up to make me change plans.
FINISHES THINGS		
1	67.99	Nearly always finish things.
5	20.89	Sometimes have to give up before they are finished.
PREFERS TO SAVE RATHER THAN SPEND		
1	35.51	Would rather spend money and enjoy life today.
5	36.44	Save more for the future.
THINKS ABOUT THE FUTURE		
1	37.46	Think a lot about things that might happen.
5	20.89	Usually just take things as they come.

Source: PSID Documentation

We recode the responses to each question in three steps. First, for each question, we assign one to the response that is most strongly related to future-orientedness and zero to the least related. Second, for each respondent and each question for each question, we transform the raw response on the 5-point Likert scale into a binary variable: one if the response is above the PSID average, zero otherwise. Last, we reverse the sign on some variables so that a one appears more likely to indicate future-oriented behavior.

Tables 16 and 17 show the correlation of Wives' and Husbands' responses to the attitude questions, respectively. Except for Life Works Out, each individual's responses are correlated, but the correlation is relatively low. It is not the case that respondents are interpreting the questions are "variations on a theme." That the responses to the six questions are generally correlated for both Husbands and Wives is consistent with the notion that the responses reflect underlying personality traits.

With the exception again of Life Works Out, a couple's responses are generally correlated with each other (Table 14).[6] The relatively low correlation of husbands' and wives' responses has advantages for our enterprise. The data we have on wealth accumulation is for couples, not individuals. A couple's wealth accumulation is the result of both partners' spending decisions and on the bargaining within the couple when they disagree about how much to spend on vacations, clothes and so on. We have both husband and wife responses to the survey questions, and we construct separate, individual AI's for them. This allows us to examine the different effects of the responses of a husband and wife on the savings behavior of the couple and on offspring behavior, both financial and otherwise.

Of particular interest is the positive correlation of both Plans Ahead and Carries Out Plans with Wealth, Income and Education for both wives and husbands. Intuitively, we would expect higher education for individuals who are future-oriented, and, *ceteris paribus*, greater wealth.[7]

6 It is interesting, however, that the correlation is relatively low. It is not the case that individuals are marrying their "attitude-mirror-partner" insofar as their survey responses are concerned. As noted above, husbands and wives were asked to respond in different years, reducing the degree to which one spouse's responses might be affected by the responses of the other.

7 Of course, there are forces in the opposite direction unconnected with future-orientedness. For example, more educated individuals might be better at identifying profitable investments and to understand better compound returns regardless of their future-orientedness.

It should be kept in mind that wealth and income in the table are measured decades after the survey questions were answered; it is not the case that it is simply that successful people decide ex post that they are clever and diligent. Most people answering these questions answered before they had made the decisions that resulted in their subsequent financial situation, suggesting that there was heterogeneity in personality in the late 1960's and early 1970's that is correlated with success in accumulating wealth.[8]

4. Empirical method: The Attitude index

As explained in Section 3, our main measures of future-orientedness are derived from responses to six PSID questions.[9] We want to examine how these attitude responses are related to future outcomes, mainly savings. It would be difficult using standard statistical methods to tease out the effect of any one attitude, as the estimated effects of any one attitude are likely to be highly dependent on which of the other attitudes are included in the set of conditioning variables. We deal with this problem by constructing an Attitude index for each person, Ψ_i, using the effects of the six response variables on wealth accumulation. The first step is to estimate a linear regression equation based on model equation (3), augmented with control variables and responses to the six attitude questions, and then construct the Attitude index from the estimated effects. We can then ask how our Attitude index is related to other variables of interest including savings behavior and non-financial decisions.[10] We exploit several unique features of the PSID design, over and above those relating directly to the attitude questions, which were discussed in Section 3.

First, there are repeated measures of net worth over time, from 1984 to 2019, many years after the attitude questions were asked and answered, largely ruling out the possibility that a couple's realized saving has shaped the attitude responses. Second, there are many other outcome variables that relate directly to other kinds of investment behavior, such as health and family. This is helpful because it allows us to distinguish between effects of being future-oriented and effects of financial sophistication, which is unlikely to have a significant direct effect on health or family planning. Third, there is an ongoing inter-generational structure: In the PSID there are not only the adult offspring but also adult grandchildren—the offspring of the offspring of the original sample of heads and spouses.[11] Consider a period t of several years that ends with an observation of the wealth of household i, denoted w_{it}. At the start of the period, the household had wealth $w_{i,t-1}$, and over the period, the household received non-financial income equal to y_{it} in present-value terms. According to equation (3), the household's optimal savings policy implies a linear relationship between the end of period wealth-income ratio w_{it}/y_{it} and the ratio at the start of the period, $w_{i,t-1}/y_{i,t-1}$, given the future income-growth rate, $g(e_i)$, where e_i denotes the education level of the householder. Note that the intercept of the equation is given by $\lambda \equiv \frac{\beta}{1+\beta}[1+r]$, which may differ across people, due to variation in either r or β. Recall that the model implies a positive coefficient less than one on $w_{i,t-1}/y_{i,t-1}$ and a negative coefficient for $g(e_i)$. These are useful restrictions for informally validating the model. We can decompose the intercept into a household-specific fixed effect λ_i, and a general fixed term λ_0. Since we don't observe λ_i, we use the attitude-response variables as a proxy:

$$\Psi_i \equiv \sum_{j=1}^{6} \gamma_j R_{ij},$$

where the γ_j are unknown parameters, and R_{ij} is individual i's response to question j.[12]

The main regression equation, with N_c control variables C_{ij} added, can be written as:

$$(W/Y)_{1it} = \lambda_0 + \alpha(W/Y)_{0,it} + \Psi_i + \sum_{j=1}^{N_c} \phi j C_{ij} + \upsilon_i.$$

The control variables include variables required by the model: the wealth-income ratio at the start of the period, $w_{i,t-1}/y_{i,t-1}$ and the future income-growth rate, $g(e_i)$, which is endogenous. Additionally, some variables are included as controls to represent heterogeneity in households that is not accounted for by the model. These include age, race, number of children, and self-reported health.

8 See Poterba *et al.* [2009] for a discussion of retirement planning.

9 Recall from section 3 that these are 0-1 variables created from the original 5-point Likert scales, such that a 1 indicates that we interpret the response as being more future-oriented than the average for that question.

10 Note that this procedure allows us to exclude from consideration any component of the attitude responses that does not demonstrably relate to savings behavior.

11 The spouse is generally the wife, but to the (limited) extent that women were household heads in 1968-1972 we may have multiple reports from both men and women.

12 If a different set of attitude responses is used, the sum, of course, changes accordingly.

We also include years of education as a control, in order to distinguish the direct effects of attitudes (R_{ij}) from the effects of education. Education is endogenous, according to our model, so we sometimes use predicted education as an instrument to mitigate the effects of endogeneity bias. The procedure used to generate this variable, as well as the income growth rate variable, is described and discussed in section 9.2. Thus, our main object of interest, the estimates of Ψ_i for each i, should be thought of as lower bounds, excluding any effects on savings that arise from the effects of Ψ_i on education.

4.1 The wealth variable

The dependent variable is based on household net worth, as measured in the PSID. Net worth is defined as the sum of the value of household assets, net of the value of all household debts. The PSID is not the best instrument for measuring net worth at any given point in time because the survey questions do not go into much detail about the composition of debts and assets. Furthermore, the PSID does not over-sample the wealthy, which is essential for aggregate analysis, due to the concentration of wealth in the right tail. In both respects, the SCF (Survey of Consumer Finances) is a far better survey instrument. However, the PSID is to our knowledge the only data set available for tracking the evolution of household net worth over many years. Since 1984, the PSID has asked a consistent set of questions about household assets and debts. At first, these were asked only every five years, but starting in 1999, these questions were included in every wave, and so were asked every two years. The main wealth variable we use is household net worth, which includes real estate equity, business equity, financial assets and the value of automobiles, net of mortgages and other debt.[13] In section 7, we explain the construction of the wealth/income ratio and report descriptive statistics for financial assets by household net-worth percentile.

4.2 The Attitudes sample

We estimate equation 3 on the Attitudes sample, respondents with attitude responses from 1968-76, essentially those who were at least once either household head in 1968-72 or spouse or head in 1976.[14]

The wealth observations over years 1984 to 1999 are pooled. For each year that wealth variables are recorded, the sub-sample is further restricted to married people aged 40-70 with admissible wealth values for both the current and preceding periods. Admissibility here means that the wealth-income ratio is not in the top or bottom 1% of the distribution, where reporting error is more likely to be a concern. The lower age restriction is intended to exclude people so young that their current net worth is likely to reflect life-cycle transitions associated with education, occupation choice and child-rearing, all of which we expect to persist later for more future-oriented people and, therefore, weaken the apparent effect of being more future-oriented. The upper bound on age is set so as to tighten the identification with period 2 in our model, and to minimize selection on survival or other noise arising from higher rates of morbidity among the old. The restriction to married people is intended to ensure comparability across households. Theory does not provide a reliable guide to interpreting wealth differences between single and married households. Furthermore, marital transitions are known to have very large effects on wealth (Cubeddu and Ríos-Rull [2003]). We run two regression estimations, one for husbands, one for wives; in other words, for married males and married females.[15] Each regression model includes the same dependent variables, the same household variables, and controls for both spouses; the only difference is that the wife model includes the attitude responses of the female respondents, and the husband model those of the males.

5. Results: savings and the Attitude index

In this section we report our analysis of savings in the Attitudes sample. This consists of two main parts: estimation of our empirical wealth model by OLS regression with clustered standard errors, and analysis of the Attitude Index constructed from those estimates.

13 As with most measures used in the previous literature, our measure excludes wealth in the form of pensions and social security, which, according to Gustman et al. [1997] is as large on average as all other wealth combined. It is interesting to note, however, that empirical research finds very little, or no, "offset" of pension wealth on net worth. In fact, some empirical studies (see Dynan et al. [2004] for an example) tend to find participation in pension plans raises other retirement savings.

14 We describe here the broad outlines of the sub-sample. For details of admissibility in the sample see Section9.1.

15 This sample partition is possible because the PSID treats a person's sex as a binary variable. Same-sex couples are also not present in our sample as same-sex marriage was not possible at that time.

5.1 Parental attitude responses and own wealth/ income ratio (W/Y)

Table 2 is an excerpt of two regressions on the Attitudes sample that show the effects on household W/Y ratio of, first, the husband's responses to the questions, and second, the wife's responses.

Table 2. Attitudes sample W/Y estimates

	Outcome: W/Y Ratio	
	Husbands	Wives
Life Works Out	0.043***	0.030***
	(0.006)	(0.005)
Plans Ahead	0.052***	0.053***
	(0.006)	(0.005)
Carries Out Plans	0.029***	0.015***
	(0.006)	(0.005)
Finishes Things	0.023***	-0.028***
	(0.008)	(0.006)
Prefers to Save for Later Consumption	-0.018***	-0.020***
	(0.006)	(0.005)
Thinks About the Future	0.018***	0.027***
	(0.006)	(0.005)
Initial Wealth	0.697***	0.719***
	(0.005)	(0.004)
Future Income Growth	-1.178***	-0.800***
	(0.080)	(0.072)
Observations	2,417	2,688
R^2	0.412	0.424

Note: *p<0.1; **p<0.05; ***p<0.01. Regression equations estimated separately by spouse on PSID sample of married respondents with attitude observations in 1968-76 and wealth observations in1984-1999. Controls for age, race, health and education of both spouses are included but not shown. For full set of estimates, see the first two columns in Table 20.

As explained earlier, the dependent variable is the household's wealth-income ratio at the end of the period. The table also shows estimates of the controls for the W/Y ratio at the start of the period and for expected income growth; the full set of estimates, including those for the other controls (age, race, health, etc.), are shown in Table 20. That table shows that that estimation yields the correct signs for expected income and initial wealth for both spouses, and a coefficient less than one in the latter case, as implied by the model. This provides some validation for the theoretical model. The model explains about 40% of the variation for each spouse, but further regressions (not shown) imply that the attitudes jointly explain less than 1%.[16]

The table also shows that the estimates for the Attitude variables are all statistically significant at the 0.01 level. This is quite remarkable: the savings behavior represented by wealth estimates 10-20 years after the attitude responses were recorded is strongly associated with the responses. We take this result as validation of the premise that the PSID attitude responses reflect heterogeneity (i.e., individual fixed effects) in permanent personal characteristics that affect inter-temporal behavior. Since this association holds after controlling for past wealth, it is unlikely to be the result of attitudes responding to early financial success.

The largest attitude-effect estimate is for Plans Ahead; people who in the 1970s said that they tend to plan ahead end up in the 1990s with a wealth-income ratio that is higher by 0.053 in the case of wives, and 0.052 in the case of husbands. From Table 20, the mean W/Y ratio for husbands in the sample is 0.67, and the standard deviation 0.75, so this one response is associated with a 7% increase in the W/Y ratio. Similar results hold for wives. Again, this is after controlling for the W/Y ratio at the start of each period, which, the model implies, is itself influenced by attitudes variation. Our interpretation of this result is that heterogeneity in savings rates are driven in part by permanent heterogeneity in the ability or tendency to plan for the future. This kind of heterogeneity does not play a role in standard neo-classical models such as ours, but could be represented by a cost of planning, analogous to that in Caplin *et al.* [2022].

Another notable result in Table 2 is the negative effect of Prefers to Save, -.018 for husbands and -0.020 for wives, both statistically significant at the 0.01 level. This is the only Attitude question that directly asks about inter-temporal preferences, so it is surprising to see a negative effect. Our interpretation of this result is that heterogeneity in discounting is much less important for explaining residual variation in W/Y. This could be because such heterogeneity is not very large, or because the effects of it on W/Y are already accounted for by the other controls. The estimates for the other attitude variables are both smaller and less similar across the sexes. In this group, Life Works Out is the largest effect. People who are more likely to agree that Life Works Out have W/Y ratios that are larger by 0.043 for husbands and 0.03 for wives. The effect of Finishes Things actually reverses sign: wives who finish things have lower W/Y growth (-0.028), while husbands who finish things have higher W/Y growth (+0.023). We have little to say about this; it could reflect differences in how women respond to the questions, or differences in the role women play in the determination of household savings. A less dramatic difference is also apparent in Carries out Plans, which has a larger effect for husbands (+0.029) than for wives (+0.015).

5.2 The Attitude index

Now that we have established a statistically significant link between attitude responses and subsequent savings behavior, we would like a way to aggregate the set of responses to reflect their combined effect on savings so that we can compare different people's savings behavior. For each individual in Attitudes sample, we construct an index equal to the estimated contribution of their attitude responses to household W/Y ratio. We will call this aggregate effect the "Attitude Index" or AI. A value of 0.1 for a person's AI means that the household W/Y ratio is on average higher by 0.1 than that of an identical household where the corresponding person has an AI of 0.[17]

16 An important limitation of our method is that we cannot fully control for self-selection into high income growth occupations. The model implies that more patient people will be more likely to choose such occupations. If this effect were to dominate in our regression model, then future-income growth would have a positive effect on the W/Y ratio; indeed, this is what happens when we leave out controls for predicted education..

17 Notice that this makes attitudes of men and women directly comparable no matter how differently they answer the attitude survey questions, as the AI exploits the estimated effects on household wealth, which does not differ between men and women. <?> Notice that this makes attitudes of men and women directly comparable no matter how differently they answer the attitude survey questions, as the AI exploits the estimated effects on household wealth, which does not differ between men and women.

Table 3. Wife's influence on household index

Percentile	Predicted W/Y Ratio	Wife's Index	Husband's Index	Wife's Share of Predicted Wealth Ratio
0 to 5	-0.007	-0.020	0.013	-1.918
6 to 25	0.053	-0.004	0.049	0.008
26 to 50	0.114	0.022	0.091	0.190
51 to 75	0.161	0.043	0.117	0.267
76 to 95	0.205	0.067	0.138	0.325
96 to 98	0.237	0.075	0.163	0.314
99 to 100	0.256	0.102	0.154	0.398

Source: Authors' estimates of Attitude index on Attitude sample.

Table 15 shows the means and standard deviations of AI for husbands and wives. The mean for husbands is 0.097, roughly 16% of the W/Y average, but much smaller for women, 0.033, suggesting that women's attitudes account for less than a third of the wealth variation due to men's attitudes.

5.2.1 The AI distribution

In our Attitudes sample, both husband and wife responded, at different times, to the attitude questions. Consequently, we have distinct future-orientedness indices for them. We take the sum of the husband's and wife's AI to be a *household* attitude index, and ask how the wife's AI compares to the husband's AI as a household rises in that AI distribution. Table 3 breaks down the relative importance of the husband and wife indices in predicting a couple's savings behavior, assuming independent effects on the household index.

As we increase the percentile rank of the household, the sum of the couple's indices increases of course, since that is the definition of household future-orientedness index. We see that while both husband and wife indices generally increase as we increase the household index, the weight on the wife index increases, particularly in the households below the 75th percentile where the Wife's share of the household index grows from -1.19 in the bottom 5% to 0.4 in the top percentile. We also see that the ratio of wife's contribution doubles from the second quartile to the third quartile. The big difference between the saving in low saving households and in high saving households is due more to the wives than the husbands. We do note, however, that the wife's share is always less than half, suggesting that wives may have less voice in savings decisions.

Table 4. Household Attitude index vs. other variables

Attitudes Percentile	Husband Owns/Operates Ltd Business	Husband's Parents were Poor	Husband's Parents were Rich	Wife's Parents were Poor	Wife's Parents were Rich
0 to 5	0.07	0.673	0.011	0.353	0.069
6 to 25	0.14	0.622	0.067	0.334	0.049
26 to 50	0.13	0.438	0.136	0.324	0.085
51 to 75	0.15	0.441	0.120	0.253	0.093
76 to 95	0.20	0.345	0.218	0.253	0.114
96 to 98	0.26	0.168	0.231	0.433	0.067
99 to 100	0.21	0.218	0.287	0.258	0.118

Source: Authors' estimates of Attitude index and calculation on Attitude sample.

How do business and parental demographics differ for households in the Attitudes sample higher in the AI distribution? It's well known that business ownership is important in understanding wealth distribution. Table 4 shows that the rate of own/operate an incorporated business increases from 7 percent to 21 percent as we move from the lowest index couples to the highest. Since we controlled for Business Ownership (BO) in constructing the AI, this finding suggests those who operate businesses tend to be those with high AI, rather than a direct effect of business ownership on AI. In other words, the attitude responses tend to be higher for those BO-Ltd respondents. It would be impossible to disentangle these selection and causal effects without the presence of the attitude responses.

If people are influenced by their childhood financial environment, they may be affected by other aspects of their home environment. The adult respondents in the Attitudes sample were asked questions such as "Were your parents generally poor or rich when you were a child?". The responses, ranked by household index are shown in Table 4. The table reveals that the prosperity of the household when the husband was a child is strongly associated with AI: in the bottom 5% of the AI distribution, 67% of husbands report that their parents were poor and only 1% that their parents were rich. In the top percentile, only 21% report that their parents were poor and the share whose parents were rich rises to 28%. Husband's reported childhood environment generally improves as one goes up the household index rank, as does that of Wives, but less so. In general, the household index is affected more by the husband's childhood financial well-being than by the wife's.

Intuitively, if our constructed attitude index reflects future-orientedness, we might expect that higher index individuals would have higher initial wealth reflecting behavior before our initial income measurement: High index individuals may have worked and saved more during school and already developed frugal habits.[18] Table 5 shows family AI is, in fact, strongly related to both the mean and median initial wealth. Median W/Y for the top quartile attitude distribution is 2.5 times that of the bottom quartile, and the mean is more than twice as large. We see a similar pattern for annual income and terminal wealth, and for median wealth income ratio, but not for mean wealth income ratio. We re-emphasize that Annual Income, Terminal Wealth and Wealth Income Ratio are (typically) measured decades after the couples' responses to the attitude questions that are the basis of their future-orientedness index. Those early responses clearly seem to be capturing something that relates to their future financial situation.

18 There are, of course, reasons that this might not hold; for example, high index individuals might spend more time in school, hence, earning less.

Table 5. Attitude index vs parental pecuniary variables

Attitudes Percentile	Annual Income	Terminal Wealth	Initial Wealth	W/Y Ratio
		Medians		
0 to 25	$26,327	$30,000	$24,300	0.177
26 to 75	$33,484	$85,000	$60,500	0.384
76 to 100	$38,232	$123,000	0.136	0.324
		Means		
0 to 25	$30,570	$97,121	$69,576	0.525
26 to 75	$43,589	$207,696	$171,245	0.919
76 to 100	$56,098	$422,267	$374,008	1.193

Source: Authors' calculations on PSID Attitudes sample.

6. The effect of parents' attitudes on offspring

6.1 Offspring

We will show that parental attitudes as measured by AI are related to offspring saving. The effects are often small but highly statistically significant. That they are small is partly a consequence of the variables that we control for in estimating the effect of attitude responses on wealth income ratio. For example, one might want to control for education in such an estimation. The difficulty is that part of parental future-orientedness that may be transmitted to offspring leads offspring to choose more education despite the cost of doing so. There are similar issues for conditioning offspring accumulation of wealth on occupation choice, individuals' initial wealth, health, and self-employment. Controlling for such variables leaves out a potentially large part of the effect of parental future-orientedness on offspring financial outcomes.

Endogenizing such variables is beyond the scope of this paper. Our contribution is to demonstrate that there are statistically significant intergenerational effects and to point to some of the transmission channels. The effects are different by sex of the parent and the sex of the child, suggesting that some part of the parental impact is social rather than genetic. Why is this interesting? As discussed in Poterba *et al.* [2009] and Cronqvist and Siegel [2015], workers in recent years have increased autonomy over savings, including how much to save and how to invest it. This makes it increasingly important to understand differences in savings behavior—especially social effects—to examine whether guidance and/or constraints on retirement saving behavior are warranted. Bernheim [2009] and Cronqvist and Siegel [2014] point out that understanding patience has important implications for the constraints on how the degree to which biased decision making can be improved.[19] Separating genetic transmission from social transmission is a necessary precursor to evaluating policy interventions aimed at affecting savings behavior.

6.2 The married-offspring sample

The sample used for the analysis of the relationship between the (parental) attitude index and offspring wealth consists of adult sons and daughters of respondents in the Attitudes sample who were either head or spouse by 2017 and are aged 40-70 at the time their wealth is measured. Although wealth is available every two years for this sample, we mainly consider wealth every 4 years to maintain comparability with the Attitudes sample.[20] Our data set pools the initial-wealth observations for years

19 See Cronqvist and Siegel [2014] for a survey of the literature on behavioral biases in finance.

20 Currently the latest observation is 2019, so for now we have only a 2-year observation for that case.

2003, 2007, 2011, 2015 and 2017, treating household-year as the unit of observation. Table 13 describes the sample by year and sex and shows that this results in the average number of offspring each year averaging 140 sons and 132 daughters, with the sample size peaking in 2011.

For this generation, the attitude questions were only asked in 2016, so it is not possible to replicate the analysis of the Attitudes sample, because we cannot link the responses in 2016 to wealth in distant future (yet). Recent wealth and savings experience is not suitable because the responses are likely to reflect that experience. Therefore, the attitude variables we use now are the *parents'* responses from the 1970s. Other control variables are the same as for parents, as represented by the AI computed in the previous section. This information is available only for the individual offspring respondent, not for that individual's spouse.

We begin our investigation of the offspring generation by describing the correlation of characteristics of offspring households and parental AI. We define the "parental household index" as the sum of father's AI and mother's AI.

Table 6 shows that both offspring median and mean terminal wealth more than triples for sons and more than quadruples for daughters as we move from the bottom to the top quartile of parental household index while annual income rises by 80% for sons and by 40% for daughters. Lastly, W/Y triples for daughters and more than doubles for sons. It is no surprise that parental AI is associated with higher wealth and income as these variables are known to persist across generations, and since table 5 established parental economic status is higher for higher AI. Table 7 shows that parental AI ranking is strongly linked to important *offspring* demographic variables.

For both male and female offspring, average years of schooling for both offspring and spouse generally increase as parental index increases. Age appears to be generally unrelated to AI, as one might expect, given that the estimates in Table 7 derive from a specification that controls for age.

We examine next the extent to which this list of advantages is related to parent's attitudes. We estimate on the offspring sample a regression analysis of the household wealth-income ratio similar to that carried out on the parents in the Attitudes sample.

6.3 Estimated effects of parent's attitudes on offspring savings

The specification and other control variables are the same as for parents: controls for age, year, race, kids, education, health and model variables initial wealth and income growth.

Among the demographics, education is of special interest, as it is very likely connected to future-orientedness: those who care more about the future are likely to invest more in education, and they are likely to choose careers with higher rates of income growth. A central question is whether parental AI is linked to educational investment.

Table 6. Married offspring pecuniary

		Means			Medians		
Sample	Parents' Attitudes Percentile	Annual Income	Terminal Wealth	W/Y Ratio	Annual Income	Terminal Wealth	W/Y Ratio
Male Offspring	0 to 25	$101,955	$171,471	0.609	$88,933	$40,060	0.108
	26 to 75	$121,396	$360,380	1.584	$110,120	$136,000	0.279
	76 to 100	$180,868	$601,047	0.857	$106,800	$115,000	0.245
Female Offspring	0 to 25	$86,953	$114,835	0.689	$77,000	$26,000	0.105
	26 to 75	$118,423	$282,464	0.858	$103,744	$96,000	0.208
	76 to 100	$127,919	$504,583	0.957	$109,893	$159,700	0.323

Source: Authors' calculation on married offspring of PSID Attitudes sample.

Table 7. Married offspring demographics

Sample	Parents' Attitudes Percentile	Wife Years of School	Husband Years of School	Husband Age	Husband Wife Age Gap	Black	Number of Kids
Male Offspring	0 to 25	13.877	13.240	46.601	1.191	0.037	1.349
	26 to 75	14.940	14.516	46.626	1.702	0.047	1.704
	76 to 100	15.004	14.726	46.938	1.794	0.030	1.481
Female Offspring	0 to 25	13.534	12.974	48.850	2.001	0.056	1.549
	26 to 75	14.683	14.380	48.696	2.670	0.019	1.614
	76 to 100	14.972	14.873	47.456	1.734	0.006	1.666

Source: Authors' calculation on married offspring of PSID Attitudes sample.

Table 8. Offspring education

	Full (RYI + Dad OCC) Controls		Race/Year Controls		Race/Year/Income Controls	
Sample	Sons	Daughters	Sons	Daughters	Sons	Daughters
Mom's Index	9.890***	1.033	10.615***	-1.550	9.544***	-2.265*
	(1.268)	(1.471)	(1.334)	(1.508)	(1.312)	(1.500)
Dad's Index	3.903***	5.503***	3.130***	13.161***	3.275***	11.414***
	(1.285)	(1.251)	(1.323)	(1.274)	(1.280)	(1.257)
Observations	115	87	115	87	115	87
R^2	0.205	0.235	0.064	0.089	0.126	0.132

Source: Authors' estimates of offspring education on married offspring of PSID Attitudes sample.

Table 8 shows the results of regressing offspring education on parental AI. Mom's AI has a large and statistically significant impact on Sons' education, while Dad's AI has a significant but somewhat smaller impact. Dad's AI has a large and significant effect on Daughter's while Mom's AI has essentially no impact. When race and year controls are added, Mom's effect on sons increases, while Dad's effect decreases slightly on Sons but increases substantially on daughters.

The third and fourth columns of table 20 showed the results of the regression of offspring W/Y on parental AI, with the same controls used in parental W/Y regression. Table 9 is an extract of the offspring regression. The results show that expected income growth reduces W/Y, but starting W/Y increases ending W/Y by 0.6. So, the estimated effects for initial wealth and income growth are again consistent with the model restrictions, as discussed in section 4 (for full set of estimates, see Table 21). The main result is that for both sons and daughters, the estimated effects of the parent's AI on the offspring wealth-income ratio are quite large. For fathers we see effects of 0.51 and 0.47 on sons and daughters, respectively. This means that the contribution of the father's attitudes to the offspring W/Y ratio is roughly half the estimated contribution to the father's own W/Y. For mothers, the effect on daughter's W/Y ratio is nearly as strong, 0.41, but the effect on sons appears weaker, 0.31, more than two standard errors below the father's effect. Since we control for W/Y at the start of the period, these parental AI effects are not driven by higher initial wealth of the offspring of high AI parents. Since we control for offspring (predicted) education, differences in years of education are not driving the result either. Thus, the results suggest strong transmission of attitudes across generations.

The estimates for the other controls (in Table 20) also suggest potentially large effects of wife's schooling: each year increases W/Y by roughly 0.06, so 4 years of college adds 0.24 on average to the W/Y ratio—after controlling for income and W/Y at the start of the period. The effect is much smaller, however, for husbands: 0.03 per year for sons, zero for daughters. If parental attitudes also increase years of education, then the indirect effect on W/Y via wife's education may also be significant.

Table 9. Offspring wealth and parental attitudes

	Outcome: W/Y Ratio			
	Attitudes Sample		Offspring Sample	
	Husbands	Wives	Sons	Daughters
Mom's Attitude Index			0.307***	0.412***
			-0.114	-0.111
Dad's Attitude Index			0.513***	0.472***
			(0.113)	(0.093)
Initial Wealth			0.706***	0.664***
			(0.009)	(0.007)
Future Income Growth			-0.945***	-1.723***
Observations			702	659
R^2			0.405	0.457

Source: Authors' estimates on married offspring of PSID Attitudes sample.
Dependent variable is wealth/income. For other controls not shown, see columns 3 and 4 in Table 20.

7. Wealth in the PSID

Wealth in our model reflects both income from previous years and anticipated future income. To estimate our model, the ideal variable to represent period-2 income would be cumulative income to the date of wealth measurement, compounded at an interest rate equal to the rate of return on household savings. To approximate this variable, let y_t represent non-asset income in each year t and Y_t represent the asset value of income to date, from age t_1. Assuming a constant real interest rate over time, Y_t can be written as the present value of income from t_1 to the date t at which wealth is measured, compounded annually at interest rate r, which we set at 4%, to match the average rate of return on corporate equity:[21]

$$Y_t = \sum_{j=0}^{t-t_1} y_{t-j} (1+r)^{t-j} .$$

Income measurements are taken from the annual household money income variables.[22] There are two caveats: first, this measure omits income of the parents when younger, and second, the PSID income variables omit capital gains, whether realized or not. This excludes changes in the value of respondents' homes. This value is excluded for two reasons. First, we are interested in the accumulation of wealth that is a consequence of active choices on individuals' choices, and much of the increase in equity in homes is passive, that is, usually not the consequence of active choice. Second, changes in equity come from self-assessed current home value that is likely a quite noisy estimate of true value.

The anticipated growth rate of income g_{ij} is taken to be the average non-asset income after age 55 divided by the average prior to that time. To make the specification more flexible, we divide this time period in two and compute two growth rates: growth rate 1 is average income over the period 55-70 divided by average income up to the time of measurement, and growth rate 2 is average income over the period 70-90 divided by average income up to the time of measurement. To estimate these growth rates we impute future income on the basis of observed income plus other variables, such as education, age and occupation. Our method uses the entire wage sample to estimate the mean and variance of non-asset income for a given age interval as a function of variables observable earlier in the life cycle, and then use the estimated coefficients to predict income for the younger members of the wealth sample for whom this age interval occurs later than the last year of data collection.

Attitudes sample: Smoking

Note that none of the attitudes we focus on are specifically financial in nature (e.g., none seems to relate to rate of return or financial sophistication), so we should expect that if our interpretation of these effects as capturing general future-orientedness is valid, the attitude index should have analogous effects on similar inter-temporal decisions, such as those relating to family and health. For example, a decision where future concerns may be important is cigarette smoking. There are two connections between future-orientedness and smoking. First, an individual may decide that there is an inter-temporal trade-off: the pleasure from smoking now outweighs future health cost. Second, many (perhaps most) smokers at some point would like to quit smoking, but fail in attempts to do so. Here, there is again a trade-off: the cost of overcoming addiction now versus a health benefit at some time in the future. In both cases, a future-oriented individual should be less likely to begin smoking, and of individuals who do smoke, the more future-oriented individual should be more likely to quit should they try. The PSID has a number of variables related to smoking. Since 1999, each wave has asked whether the head ever smoked and since 2005 whether the wife ever smoked. We explore these issues by Probit regression analysis by sex. The estimates in Table 22 are computed on the 1,043 men and 1,221 women from the attitudes sample, controlling for race, religion, year of birth, and whether parents were poor. The estimates show a negative effect of AI (-0.225) on the probability of Males having Ever Smoked Cigarettes, and effect of -.12 for Females. In both regressions, the effect of birth year (negative) is the only other statistically significant variable, at the 0.05 level. This supports the view that the AI reflects more than rate of return or some other measure of financial sophistication. For those individuals who do smoke, columns 2 and 4 of table 22 show that the effect of AI on whether they quit Smoking is much weaker, statistically zero in the case of males and about 0.16 for females.[23]

21 Poterba (1998) finds that the average rate of return on corporate equity over the time period 1950-1990 is about 4% after taxes.

22 These and other money quantities in our paper are deflated to 1997 values using the CPI.

23 For males the only other significant controls are Protestant and Catholic, both of which reduce the probability of quitting; if the excluded group is more secular, this may reflect lower concern for mortality among the religious. Or more likely, those who identify with these religions are different in other ways, such as education or income. For females, the largest significant controls are White and Catholic, but White is only significant after controlling for AI.

Table 22. Probit regression for ever smoked cigarettes

	Outcome: Ever Smoked Cigarettes			
	Males		Females	
	(1)	(2)	(3)	(4)
Intercept	22.037**	22.436**	45.624***	44.472***
	(10.256)	(10.342)	(9.010)	(9.168)
Own attitude index		-0.225***		-0.123***
		(0.047)		(0.039)
White	0.315	0.376*	-0.016	0.029
	(0.219)	(0.219)	(0.217)	(0.220)
Black	0.346	0.306	0.209	0.222
	(0.242)	(0.243)	(0.235)	(0.238)
Protestant	0.105	0.056	-0.005	-0.011
	(0.129)	(0.130)	(0.111)	(0.111)
Catholic	0.136	0.070	-0.102	-0.119
	(0.125)	(0.128)	(0.110)	(0.110)
Jewish	-0.332	-0.372	0.371	0.331
	(0.307)	(0.314)	(0.321)	(0.318)
Birth year	-0.011**	-0.011**	-0.023***	-0.023***
	(0.005)	(0.005)	(0.005)	(0.005)
Parents poor	-0.023	-0.007	0.016**	0.016**
	(0.028)	(0.027)	(0.008)	(0.008)
Observations	1,043	1,043	1,221	1,221

Note: Standard errors clustered at the family ID level are in parentheses. *p<0.1; **p<0.05; ***p<0.01.

Table 23. Probit regression for whether quit smoking

	Outcome: Whether Quit Smoking			
	Males		Females	
	(1)	(2)	(3)	(4)
Intercept	17.060	16.980	19.822*	20.297**
	(12.028)	(12.026)	(10.157)	(10.216)
Own attitude index		0.051		0.161***
		(0.053)		(0.049)
White	0.392	0.370	-0.549	-0.638*
	(0.305)	(0.304)	(0.372)	(0.367)
Black	-0.227	-0.223	-1.132***	-1.209***
	(0.317)	(0.318)	(0.380)	(0.375)
Protestant	-0.517***	-0.504***	0.024	0.024
	(0.173)	(0.173)	(0.140)	(0.143)
Catholic	-0.580***	-0.561***	-0.287**	-0.260*
	(0.168)	(0.168)	(0.141)	(0.142)
Jewish	-0.407	-0.403	0.219	0.274
	(0.472)	(0.477)	(0.346)	(0.359)
Birth year	-0.008	-0.008	-0.009*	-0.010*
	(0.006)	(0.006)	(0.005)	(0.005)
Parents poor	-0.034	-0.040	0.050***	0.049***
	(0.029)	(0.029)	(0.010)	(0.010)
Observations	789	789	926	926

Note: Standard errors clustered at the family ID level are in parentheses. *p<0.1; **p<0.05; ***p<0.01.

8. Discussion

8.1 Interpretation of the questions

How do respondents interpret the attitude questions? A respondent's reply to the Plans Ahead might be a "0" because, in her view, her life is so well-ordered that she doesn't need to do any more planning. One attitude question that has frequently stood out in our discussion is "I Prefer to Save rather than Spend." At first glance, one might think a respondent who strongly disagrees should be thought of as someone who has a low discount factor. However, the respondent might be someone who has been a vigorous saver all her life and is ready to retire. At some point in their life, even a high discount factor person should prefer to spend rather than save.[24] How is our analysis affected by the likelihood that *our* interpretation may differ from the respondent's interpretation?

First, the responses to the questions were generally positively correlated; this suggests that, on average, respondents likely interpreted the questions as we have, and responded accordingly. Furthermore, the AI that we constructed from the responses, and its relationship to demographics and savings behavior is supportive of this.

Second, even if there is serious doubt about the interpretation of the responses, the fact remains that an individual's AI, based on information in the late sixties and early seventies, predicts wealth accumulation by the respondents and their offspring decades later; hence, it is useful regardless of respondents' interpretation.

8.2 Reliability of answers

An almost universal critique of survey data is their reliability. An individual may shade responses to reflect positively on him or her, or simply is misinformed about what "average" means in response to a question such as "I Carry Out Plans."

This is a less serious problem for our enterprise than is often the case. First, our aim is not to estimate how *much* people plan. Instead, it is to see whether responses to the attitude questions are related to behavior over subsequent decades, and we have shown that this is the case however respondents have skewed their responses. Moreover, much of our argument for intergenerational transmission is based on behavioral differences of individuals with different AI's. If some respondents tend to exaggerate, this will only add noise to those comparisons.

8.3 Control variables

We have demonstrated that parents' responses in the late sixties and early seventies predict both their own and their offsprings' financial and non-financial outcomes decades later. Many of the parental attitude effects are statistically significant but not particularly large. In our estimation of the parental attitudes' effect on own and offspring outcomes we typically controlled for things such as initial income, initial wealth income ratio, occupational choice, growth of income, health, education and self-employment.

All of these variables are affected by choices the individual has previously made. Our model suggests that, for example, individuals who are more future-oriented will choose more education, which likely leads to higher income and higher wealth accumulation. Controlling for education would leave out a potentially significant piece of the total parental effect on wealth accumulation. We have addressed this problem by using not the offspring education, but by using offspring *predicted* education based on parental variables. This mitigates the problem but does not eliminate it. Parents who are more future-oriented will generally have more education, leading to a higher predicted education for offspring. This again shifts some of the explanatory value of the parental AI to offspring predicted education.

We see from table 21 that higher values of Health, Initial Wealth and Husband's Schooling lead to higher end-period wealth income. As a consequence, controlling for these variables suggests that the magnitudes of our estimated effect are biased down. One could build a model that yielded a more accurate estimate of the magnitude by endogenizing the choices behind these variables. There are two obvious problems in doing this: first, having the data to construct the more accurate model, and second and more important, such models would typically be based on there being an observable measure of future-orientedness.

24 Note, however, that in our analysis, this concern is mitigated by our control for age.

8.4 Bequests, actual or forecast

An issue that we haven't touched on is bequests. If a future-oriented parental couple has been successful in accumulating wealth, there may be transfers to offspring that are not recorded in PSID. This, of course, can lead to a lower W/I for the parental household and higher ratio for the offspring. If our computed AI's for the parents are associated with greater wealth accumulation, those AI's might then be associated with higher offspring assets that have nothing to do with offspring future-orientedness. This is offset, at least to some degree, by an opposite effect. An offspring of a high saving parent is likely to have less motive to save. Along the same lines above, this would lead to high index parents having lower W/I ratio offspring.

8.5 Channels of transmission

8.5.1 Intertemporal preferences

The obvious channel through which parents with higher future-orientedness results in higher wealth income ratio is individuals' intertemporal preferences—more patient people save more. Alternatively, it might be that people don't differ so much in their preferences but differ in their discipline: "All people want to save more," but some are more likely to implement a plan to do so.[25] We mentioned this above in discussing smoking, and there are behavioral economics papers investigating the issue in regard to weight loss and exercise. We discuss this issue further in section 8.6.

8.6 Discount rate, planning or self-control?

Our empirical analysis is structured by equation (3), and the intergenerational effect comes from the assumption that there is a family effect linking discount factors of parent and offspring. As seen in Table 2, the question that seems closest to a discount factor—"I Prefer to Save Rather than Spend"—has the least predictive power of the six responses, and indeed, has a statistically significant negative sign. Looking at this table, one might choose to focus on "Plans Ahead" to understand individuals' future-orientedness.

To do this, one might consider an alternative model that is centered on planning. For example, suppose that planning is a costly process: "I am a serious planner - I spend a good deal of time perusing grocery store ads on Thursdays to see where I can get the greatest value when I shop." People who, *ceteris paribus*, plan more will spend less money on the same bundle as those who plan less, and consequently, will accumulate greater wealth.[26] But planning is costly, and choosing to plan more involves trading off utility today for future benefits.[27] In other words, more future-oriented individuals will plan more. Now the connection between parental wealth accumulation and offspring accumulation would come from a family effect on the cost of planning; offspring cost of planning is a noisy function of parental cost of planning.

Intuitively, this alternative model seems less than compelling as our AI, as constructed, would be calculated as it currently is with the same predictive power. But for behaviors such as quitting smoking or not, one doesn't naturally think of planning being central. If the focus is on planning, one might choose a different selection of attitude questions, for example, "Plans Ahead" and "Carries Out Plans," and possibly "Finishing Things." One could then compute an alternative AI using this selection and carry out an analysis similar to that above.

Conclusion

We defined future-orientedness as the collection of permanent personality traits that affect inter-temporal behavior. We found that attitudes reported in the 1970s predicted not only married-household wealth accumulation ten or more years later, but also the wealth accumulation of the households' married offspring. While some of the effects may appear small, it is important to stress that these were measured after controlling for variables that are themselves increasing in future-orientedness, according to our model, such as education, expected income growth, and wealth at the start of the period.

25 The failure of individuals to behave according to their optimal program, thus departing from the Neo-classical framework, is increasingly well studied in economics and the literature has given rise to several distinct approaches. One possibility, which includes models of hyperbolic discounting, is that the optimal program, such as weight-loss or smoking cessation programs, require individuals to commit: to endure a short-term reduction in welfare in order to achieve the long run optimum. See Laibson [2015] and Heidhues and Strack [2021] for discussions of commitment in behavioral models, also known as "present bias."

26 Another possibility is that following the optimal program requires constant effort or attention, as in looking for the third exit on a highway or taking a birth-control pill every day or remembering to buy less whisky than usual so as to save for the future. If attention is costly, it may be rational for people to reduce their effort, causing them to miss the optimal program. Such issues of "rational inattention" are discussed in Lipnowski et al. [2022] and Hébert, Benjamin M., and Michael Woodford [2019]. There is also a literature, both theoretical and empirical, examining how much effort people spend in choosing among many items; see Abaluck and Adams-Prassl [2021] for a recent discussion of this literature.

27 This is reminiscent of Sims [2003] introduction of rational inattention in decision making. See Caplin et al. [2022], for recent work in this area examining how much effort people spend in choosing among many items; see Abaluck and Adams-Prassl [2021] for a recent discussion of this literature.

We also found that the effect of attitudes about planning were much stronger than that of preferences for saving, suggesting that the neoclassical savings theory is missing a significant component of saving-rate variation.

We showed that the component of attitude responses which predicts savings (the "attitude index") also predicts smoking behavior. That is interesting because in our savings model, due to time-separability of preferences, it is not possible to distinguish variation in savings due to future-orientedness from variation due to idiosyncratic rates of return to saving. Under the assumption that smoking decisions are unaffected by the rate of return to saving, the effect of the attitude index on smoking supports our hypothesis that variation in future-orientedness contributes to saving-rate variation across households.

We found that women's variation in future-orientedness was more important than men's variations in determining the ranking of households by attitude index. Men's attitudes are more important than women's in determining savings rates throughout the AI distribution, but households at the top of the distribution differed from those lower down much more in terms of the wife's AI than the husband's. It is not clear from our analysis why this should be so and warrants further research.

Table 10. Household Attitude index vs. attitude responses

	Couple's Attitudes Percentile	Life Works Out	Plans Ahead	Carries Out Plans	Finishes Things	Prefers to Save	Thinks About the Future
Husband's Responses	0 to 25	0.294	0.240	0.356	0.678	0.635	0.249
	26 to 75	0.696	0.702	0.710	0.882	0.644	0.580
	76 to 100	0.941	0.984	0.856	0.934	0.558	0.742
Wife's Responses	0 to 25	0.498	0.0110	0.376	0.807	0.506	0.266
	26 to 75	0.767	0.443	0.639	0.789	0.547	0.379
	76 to 100	0.845	0.940	0.837	0.739	0.570	0.687

Source: Authors' Attitude index estimates on married offspring of PSID Attitudes sample.

Table 11. Offspring wealth income ratio regression

	Outcome: W/Y Ratio			
	(1)		(2)	
	Sons	Daughters	Sons	Daughters
Mom's Attitude Index	0.307***	0.412***	0.186	0.617***
	(0.114)	(0.111)	(0.115)	(0.112)
Dad's Attitude Index	0.513***	0.472***	0.455***	0.436***
	(0.113)	(0.093)	(0.124)	(0.101)
Initial Wealth	0.706***	0.664***	0.675***	0.624***
	(0.009)	(0.007)	(0.009)	(0.008)
Husband's Health Poor	-0.086***	-0.207***	-0.064***	-0.189***
	(0.022)	(0.016)	(0.022)	(0.016)
Wife's Schooling Years	0.055***	0.069***	0.054***	0.060***
	(0.005)	(0.005)	(0.005)	(0.005)
Husband's Schooling Years	0.036***	-0.004	0.029***	-0.002
	(0.005)	(0.004)	(0.005)	(0.004)
Husband Self Employed			0.078***	0.005
			(0.012)	(0.005)
Husband Self Ltd Business			-0.190***	0.202***
			(0.019)	(0.019)
Observations	702	659	702	659
R^2	0.405	0.457	0.416	0.463

Note: *p<0.1; **p<0.05; ***p<0.01.

All specifications also include future income growth, husband's age, husband's age squared, wife's age, wife's age squared, wife's health poor, black, number of children at home, number of children at home squared, year, and year squared as controls.

Table 12. Attitudes sample by year and sex

Year	Husbands	Wives
1984	770	847
1989	782	814
1994	509	595
1999	356	432
Average	604	672

Source: PSID.

Table 13. Married-offspring sample by year and sex

Year	Sons	Daughters
2003	82	113
2007	138	142
2011	176	155
2015	163	131
2017	143	118
Average	140.4	131.8

Source: PSID.

Table 14. Husband-wife correlations

	Attitude Question	Life Works Out	Plans Ahead	Carries Out Plans	Finishes Things	Prefers to Save	Thinks About the Future
Wife	Life Works Out	0.17	-0.11	-0.11	-0.11	-0.01	-0.01
	Plans Ahead	-0.13	0.18	0.11	0.05	-0.01	0.11
	Carries Out Plans	-0.11	0.1	0.2	0.1	-0.01	0.03
	Finishes Things	-0.08	0.02	0.07	0.02	0.02	-0.08
	Prefers to Save	-0.03	0.1	0.07	0.06	0.12	0.02
	Thinks About the Future	0	0.13	0.06	0.03	0.03	0.08

Note: Based on binary version. Source: PSID 1972-76, and authors' calculations.

Table 15. Statistical moments of AI

	N	Mean	Std. Dev.
Men	1043	.0972	.0465
Women	1229	.0335	.0393

Source: PSID.

Table 16. Wives' correlations

Attitude Question	Life Works Out	Plans Ahead	Carries Out Plans	Finishes Things	Prefers to Save	Thinks About the Future
Mean	0.33	0.47	0.6	0.77	0.55	0.44
Life Works Out	1					
Plans Ahead	-0.13	1				
Carries Out Plans	-0.23	0.18	1			
Finishes Things	-0.12	0.11	0.12	1		
Prefers to Save	-0.01	0.16	-0.01	0.04	1	
Thinks About the Future	0.13	0.24	-0.02	-0.05	0.11	1

Note: Based on binary version. Source: PSID 1972-76, and authors' calculations.

Table 17. Husbands' correlations

Attitude Question	Life Works Out	Plans Ahead	Carries Out Plans	Finishes Things	Prefers to Save	Thinks About the Future
Mean	0.35	0.65	0.64	0.82	0.63	0.55
Life Works Out	1					
Plans Ahead	-0.17	1				
Carries Out Plans	-0.3	0.22	1			
Finishes Things	-0.17	0.11	0.15	1		
Prefers to Save	-0.02	0.23	0.02	0.09	1	
Thinks About the Future	-0.07	0.29	0.06	0.08	0.13	1

Note: Based on binary version. Source: PSID 1972-76, and authors' calculations.

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9. Samples

9.1 Attitude subsample

Admissibility means that the wealth-income ratio is not in the top or bottom 1% of the distribution, where reporting error is more likely to be a concern. The lower age restriction is intended to exclude people so young that their current net worth is likely to reflect life-cycle transitions associated with education, occupation choice and child-rearing, all of which we expect to persist later for more future-oriented people and, therefore, weaken the apparent effect of being more future-oriented. The upper bound on age is set so as to tighten the identification with period 2 in our model, and to minimize selection on survival or other noise arising from higher rates of morbidity among the old. The restriction to married people is intended to ensure comparability across households; theory does not provide a reliable guide to interpreting wealth differences between single and married households. Furthermore, marital transitions are known to have very large effects on wealth (Cubeddu and Ríos-Rull [2003]). We run two regression estimations, one for husbands, one for wives; in other words, for married males and married females. Each regression model includes the same dependent variables, the same household variables, and controls for both spouses; the only difference is that the wife model includes the attitude responses of the female respondents, and the husband model those of the males.

9.2 Instrumental regressions

We have structured our estimations around equation 3 as suggested by our model. A problem with this is that that model suggests endogeneity of education and income growth: both are likely influenced by an individual's future-orientedness. We address this problem for offspring education by an instrumental-variable (IV) strategy, using predicted years of education based on observable parental variables. We have some limited information about parents of members of Attitudes sample: education in years, poverty while respondent is young, occupation and employment industry. We similarly estimate predicted income growth. The caveats mentioned above with respect to the predicted education estimation hold here as well.

9.2.1 Results

Tables 18 and 19 show the results of the regressions. We note that for the education regression we don't need either wealth or attitude responses. Consequently, the sample is much larger than those used in the estimating AI. For the Parents sample n=32,710 and uses retrospective variables. For Offspring predicted growth rate, n=6,301 and uses parental attitude responses. Some people will appear in both samples, and for those we take the higher of the two predictions. Both versions yield similar results with R-squared approximately 0.3.

Table 18. Education regression

	Outcome: IndivSchoolYrs	
	Male	Female
Intercept	9.917***	9.658***
	(0.031)	(0.027)
ParPoor	-0.550***	-0.077***
	(0.012)	(0.012)
ParRich	0.009	0.201***
	(0.011)	(0.012)
Black	-2.507***	-1.320***
	(0.062)	(0.051)
BirthYr	0.088***	0.079***
	(0.001)	(0.001)
$BirthYr^2$	-0.075***	-0.055***
	(0.001)	(0.001)
ED2	0.494***	0.343***
	(0.025)	(0.019)
ED3	0.355***	0.511***
	(0.015)	(0.013)
ED4	0.361***	0.357***
	(0.016)	(0.014)
ED5	0.581***	0.404***
	(0.019)	(0.017)
EM2	-0.038	-0.259***
	(0.027)	(0.021)
EM3	0.527***	0.605***
	(0.015)	(0.013)
EM4	0.414***	0.449***
	(0.015)	(0.013)
EM5	0.441***	0.580***
	(0.018)	(0.016)
OD2	0.573***	0.722***
	(0.017)	(0.016)
OD5	0.434***	0.644***
	(0.019)	(0.017)
OD6	-0.421***	-0.076***
	(0.016)	(0.015)
OD7	-0.198***	0.120***
	(0.015)	(0.013)
OD8	-0.187***	0.100***
	(0.015)	(0.014)
OD9	-0.236***	-0.070***
	(0.015)	(0.015)
BlackParPoor	0.489***	0.030
	(0.038)	(0.035)
BlackParRich	0.011	-0.459***
	(0.040)	(0.039)
BlackEducMom	-0.004	-0.014***
	(0.003)	(0.003)
BlackEducDad	-0.010***	-0.002
	(0.003)	(0.003)
BlackBirth	0.032***	0.018***
	(0.001)	(0.001)
Observations	14,757	15,312
R^2	0.290	0.326

Table 19. Income regression

	Outcome: GroRate	
	Self-Employed	Not Self-Employed
Intercept	-0.000	-0.041
	(0.053)	(0.135)
Kids6t13	0.008***	0.001
	(0.001)	(0.002)
Kid14t17	0.007	0.007***
	(0.001)	(0.002)
Kid18t20	0.008***	0.014***
	(0.062)	(0.003)
Kid21t29	0.003**	0.008***
	(0.001)	(0.002)
White	-0.015***	0.018**
	(0.003)	(0.006)
Black	-0.014***	0.010
	(0.003)	(0.009)
HubAge	-0.002***	-0.002***
	(0.000)	(0.000)
HubHealthPoor	-0.050***	-0.045***
	(0.002)	(0.004)
HubPredEduc	0.026***	0.059***
	(0.007)	(0.016)
HubPredEduc^2	-0.001***	-0.002***
	(0.000)	(0.001)
HubSelfEmp	0.002*	-0.006***
	(0.001)	(0.001)
HubWorking	0.039***	0.090***
	(0.002)	(0.007)
HubRetired	-0.031***	0.051***
	(0.003)	(0.008)
WifAge	-0.001***	-0.003***
	(0.000)	(0.000)
WifHealthPoor	0.011***	0.034***
	(0.002)	(0.004)
WifPredEduc	-0.027***	-0.058***
	(0.008)	(0.017)
WifPredEduc2	0.001***	0.003***
	(0.000)	(0.001)
WifSeflEmp	-0.011***	-0.007**
	(0.003)	(0.002)
WifWorking	0.030***	0.059***
	(0.001)	(0.003)
WifRetired	-0.034***	0.010*
	(0.002)	(0.006)
Observations	6,347	1,522
R^2	0.244	0.180

Table 20. Attitude-sample wealth-ratio estimates

	Outcome: W/Y Ratio			
	Attitudes Sample		Offspring Sample	
	Husbands	Wives	Sons	Daughters
Intercept	-1.323***	-1.751***	-3.048***	-1.741***
	(0.144)	(0.125)	(0.449)	(0.309)
Life Works Out	0.043***	0.030***		
	(0.006)	(0.005)		
Plans Ahead	0.052***	0.053***		
	(0.006)	(0.005)		
Carries Out Plans	0.029***	0.015***		
	(0.006)	(0.005)		
Finishes Things	0.023***	-0.028***		
	(0.008)	(0.006)		
Prefers to Save for Later Consumption	-0.018***	-0.020***		
	(0.006)	(0.005)		
Thinks About the Future	0.018***	0.027***		
	(0.006)	(0.005)		
Mom's Attitude Index			0.307***	0.412***
			(0.114)	(0.111)
Dad's Attitude Index			0.513***	0.472***
			(0.113)	(0.093)
Initial Wealth	0.697***	0.719***	0.706***	0.664***
	(0.005)	(0.004)	(0.009)	(0.007)
Future Income Growth	-1.178***	-0.800***	-0.945***	-1.723***
	(0.08)	(0.072)	(0.174)	(0.156)
Husband's Age	0.062***	0.085***	0.065***	0.008
	(0.006)	(0.006)	(0.021)	(0.010)
Husband's Age Squared	-0.058***	-0.080***	-0.051**	-0.006
	(0.006)	(0.005)	(0.022)	(0.01)
Husband's Health Poor	-0.069*	-0.068***	-0.086***	-0.207***
	(0.009)	(0.008)	(0.022)	(0.016)
Wife's Age	-0.042***	-0.056***	-0.01	0.032***
	(0.004)	(0.005)	(0.007)	(0.011)
Wife's Age Squared	0.043***	0.060***	0.003	-0.030***
	(0.004)	(0.005)	(0.008)	(0.012)
Wife's Health Poor	-0.023***	-0.053***	0.014	0.014
	(0.008)	(0.008)	(0.017)	(0.016)
Wife's Schooling Years	0.028***	0.038***	0.055***	0.069***
	(0.003)	(0.003)	(0.005)	(0.005)
Husband's Schooling Years	0.037***	0.040***	0.036***	-0.004
	(0.003)	(0.002)	(0.005)	(0.004)
Black	-0.082***	-0.066***	-0.029	-0.064***
	(0.014)	(0.012)	(0.023)	(0.024)

Table 20. Attitude-sample wealth-ratio estimates (continued)

	Outcome: W/Y Ratio			
	Attitudes Sample		Offspring Sample	
	Husbands	Wives	Sons	Daughters
Number of Children At Home	-0.028***	-0.021***	-0.044***	-0.063***
	(0.005)	(0.005)	(0.010)	(0.009)
Number of Children Squared	0.004***	0.004***	0.015***	0.017***
	(0.001)	(0.001)	(0.002)	(0.002)
Year	0.002	0.015***	0.030**	-0.001
	(0.002)	(0.002)	(0.014)	(0.012)
Year Squared	-0.040***	-0.094***	-0.053**	-0.011
	(0.011)	(0.010)	(0.022)	(0.020)
Observations	2,417	2,688	702	659
R^2	0.412	0.424	0.405	0.457

Source: Estimates of parental and offspring wealth income ratio on Attitudes sample. Dependent variable is estimated wealth income ratio.

Table 21. Offspring-sample wealth-ratio estimates

	Outcome: W/Y Ratio	
	Sons	Daughters
Intercept	-3.048***	-1.741***
	(0.449)	(0.309)
Mom's Attitude Index	0.307***	0.412***
	(0.114)	(0.111)
Dad's Attitude Index	0.513***	0.472***
	(0.113)	(0.093)
Initial Wealth	0.706***	0.664***
	(0.009)	(0.007)
Future Income Growth	-0.945***	-1.723***
	(0.174)	(0.156)
Husband's Age	0.065***	0.008
	(0.021)	(0.010)
Husband's Age Squared	-0.051**	-0.006
	(0.022)	(0.010)
Husband's Health Poor	-0.086***	-0.207***
	(0.022)	(0.016)
Wife's Age	-0.010	0.032***
	(0.007)	(0.011)
Wife's Age Squared	0.003	-0.030***
	(0.008)	(0.012)
Wife's Health Poor	0.014	0.014
	(0.017)	(0.016)
Wife's Schooling Years	0.055***	0.069***
	(0.005)	(0.005)
Husband's Schooling Years	0.036***	-0.004
	(0.005)	(0.004)
Black	-0.029	-0.064***
	(0.023)	(0.024)
Number of Children At Home	-0.044***	-0.063***
	(0.010)	(0.009)
Number of Children Squared	0.015***	0.017***
	(0.002)	(0.002)
Year	0.030**	-0.001
	(0.014)	(0.012)
Year Squared	-0.05**	-0.011
	(0.022)	(0.020)
Observations	702	659
R^2	0.405	0.457

Table 22. Probit regression for ever smoked cigarettes

	Outcome: Ever Smoked Cigarettes			
	Males		Females	
	(1)	(2)	(3)	(4)
Intercept	22.037**	22.436**	45.624***	44.472***
	(10.256)	(10.342)	(9.010)	(9.168)
Own attitude index		-0.225***		-0.123***
		(0.047)		(0.039)
White	0.315	0.376*	-0.016	0.029
	(0.219)	(0.219)	(0.217)	(0.220)
Black	0.346	0.306	0.209	0.222
	(0.242)	(0.243)	(0.235)	(0.238)
Protestant	0.105	0.056	-0.005	-0.011
	(0.129)	(0.130)	(0.111)	(0.111)
Catholic	0.136	0.070	-0.102	-0.119
	(0.125)	(0.128)	(0.110)	(0.110)
Jewish	-0.332	-0.372	0.371	0.331
	(0.307)	(0.314)	(0.321)	(0.318)
Birth year	-0.011**	-0.011**	-0.023***	-0.023***
	(0.005)	(0.005)	(0.005)	(0.005)
Parents poor	-0.023	-0.007	0.016**	0.016**
	(0.028)	(0.027)	(0.008)	(0.008)
Observations	1,043	1,043	1,221	1,221

Note: Standard errors clustered at the family ID level are in parentheses. *p<0.1; **p<0.05; ***p<0.01.
Dependent variable: Respondent at one time smoked.

Table 23. Probit regression for whether quit smoking

	Outcome: Whether Quit Smoking			
	Males		Females	
	(1)	(2)	(3)	(4)
Intercept	17.060	16.980	19.822*	20.297**
	(12.028)	(12.026)	(10.157)	(10.216)
Own attitude index		0.051		0.161***
		(0.053)		(0.049)
White	0.392	0.370	-0.549	-0.638*
	(0.305)	(0.304)	(0.372)	(0.367)
Black	-0.227	-0.223	-1.132***	-1.209***
	(0.317)	(0.318)	(0.380)	(0.375)
Protestant	-0.517***	-0.504***	0.024	0.024
	(0.173)	(0.173)	(0.140)	(0.143)
Catholic	-0.580***	-0.561***	-0.287**	-0.260*
	(0.168)	(0.168)	(0.141)	(0.412)
Jewish	-0.407	-0.403	0.219	0.274
	(0.472)	(0.477)	(0.346)	(0.359)
Birth year	-0.008	-0.008	-0.009*	-0.010*
	(0.006)	(0.006)	(0.005)	(0.005)
Parents poor	-0.034	-0.040	0.050***	0.049***
	(0.029)	(0.029)	(0.010)	(0.010)
Observations	789	789	926	926

Note: Standard errors clustered at the family ID level are in parentheses. *p<0.1; **p<0.05; ***p<0.01.
Dependent variable: Respondent at one time smoked and subsequently quit.

About the authors

John Knowles is a professor of economics at Simon Fraser University in Vancouver, Canada. His main field of research is macro-economics, broadly defined. Knowles specialize in developing equilibrium models to analyze micro-level data sets, usually in the field of family economics, but including also some early work on racial profiling. Before joining SFU in 2014, he was a professor in the Economics Department at the University of Southampton, in the U.K. Prior to that he was an assistant professor at the University of Pennsylvania, from 1999 to 2008. Knowles completed his Ph.D. at the University of Rochester, N.Y. in 1999. Published articles based on his research may be found in a number of international academic journals, including the *Economic Journal*, the *Journal of Political Economy*, *The International Economic Review*, the *Review of Economic Dynamics* and *The Quarterly Journal of Economics*.

Andrew Postlewaite is the Harry P. Kamen Professor of Economics and Professor of Finance. He is a member of the American Academy of Arts and Sciences and is an emeritus director of the National Bureau of Economic Research. He is the founding editor of the journal American Economic Journal: Microeconomics. Professor Postlewaite is also a Research Associate at Penn's Population Studies Center and a Research Associate at Penn's Institute for Law and Economics. He has taught at Caltech, Harvard, Princeton, Stanford, the University of California, San Diego, the University of Illinois and Yale. His research interests include game theory, social norms, and behavioral economics. He has served on the editorial board of the *Journal of Economic Theory* and *Games and Economic Behavior*, and as coeditor of *Econometrica* and editor of the *International Economic Review*.

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