

Saving Education Received in Early Life and Future Orientation in Adulthood

Alessandro Bucciol^a  and Luca Zarri^b 

We use data from a Dutch data set, the DNB Household Survey, annually covering the period 1996–2015, to study the relationship between informal parental saving education received when people were children or adolescents and two variables aimed to capture adult individuals' concerns for their future: planning horizon and future orientation. Our results indicate that the general future orientation positively correlates with informal saving education, and in particular having received financial teachings. Our findings also suggest that the future orientation index is rather stable over time (which is not trivial, especially because our dataset covers two full business cycles) and declines with age following the life-cycle.

Keywords: educational economics, financial literacy, future orientation, saving education

Every day people are engaged in decision-making processes involving intertemporal choices (e.g., choices that have both short-term and long-term consequences). In many domains, this entails a trade-off between immediate gratification (e.g., smoking or eating) and long-run costs (e.g., risk of lung cancer or obesity), so that people seldom succeed in resisting temptations and exercising self-control. When individual choices involve a trade-off between immediate gratification and long-term costs, “impatience” may prevail. When the trade-off is between immediate costs and long-term benefits, instead, people often exhibit so called “procrastination,” delaying costly activities (e.g., studying) whose benefits (e.g., getting an interesting and/or well-paid job) will be enjoyed only in the medium-long run. A recent work by Reuben, Sapienza, and Zingales (2015) finds that procrastination and impatience are to a significant extent two facets of the same phenomenon, showing that, in tasks where there are costs to delay, impatient individuals indeed procrastinate more.

A telling example of decision contexts in which a conflict between long-term “good” intentions and short-term “bad” behavior typically arises is provided by *saving behavior*: As noted by Webley and Nyhus (2006), when planning for the long-run, individuals often express intentions to save and have money to cover unforeseen emergencies, but, when

asked about their *actual* saving, households often admit that they save less than originally planned. In the United States, many people are doing little or no saving and approaching retirement with no wealth apart from their house, which is telling of the personal savings rate that has been holding steady at zero for many years dropping from a level of about 8% in the mid-1980s (Lusardi, 2009). The widespread lack of financial literacy (Lusardi & Mitchell, 2011) is likely to play an important role in accounting for this alarming trend both in the United States and in many other parts of the world.

As shown by psychology research, individuals significantly differ in their ability to use strategies that allow them to sustain their long-term plans. To help people make future-oriented choices and save more for their future, different roads might be taken. One classic solution is for governments to provide well-designed subsidies and incentives. In the last years in the United States, a successful strategy inspired by so called “asymmetric” paternalism (Camerer, Issacharoff, Loewenstein, O’Donoghue, & Rabin, 2003), has been created to motivate individuals to “tie their hands” (like Ulysses with the Sirens) and commit to plans that are costly in the short-term but extremely beneficial in the long-term. In its first implementation, the SMarT (Save More Tomorrow) program inspired by 2017 Economics Nobel

^aAssociate Professor of Econometrics, Department of Economics, University of Verona, Via Cantarane 24, Verona, 37129, Italy.

E-mail: alessandro.bucciol@univr.it

^bFull Professor of Economic Policy, Department of Economics, University of Verona, Via Cantarane 24, Verona, 37129, Italy. E-mail: luca.zarri@univr.it

winner Richard Thaler succeeded in boosting the average participant's 401(k) savings rate from 3.5% to 13.6% in only 3.5 years (Benartzi & Thaler, 2004).

An alternative (and potentially complementary) strategy would be to instruct *families* to personally assume a key role in the process, which would involve having parents provide financial education to their children in order to encourage asset accumulation. In principle, this may come in different forms, from providing pocket money to teaching budgeting. However, as we show in the Literature Review Section of this article, our knowledge of the role that economic socialization channels can play in inducing young people to care more about their future is still limited and available empirical evidence is mixed. In particular, we know little about how parents exactly communicate with their children in reference to financial decisions, and what the long-term effects of alternative parental practices are as individuals enter adulthood.

In this study, we use Dutch household survey data from the DNB Household Survey (DHS), annually covering the period of 1996–2015, to address this issue by asking the following question: Does informal saving education received in childhood and adolescence make individuals more future-oriented later in life? In particular, we aim to shed light on the relationship between informal saving education given by parents and two variables that capture adult individuals' concerns for their future: *planning horizon* and *future orientation*. "Planning horizon" refers to the time horizon considered by the household when deciding about planning economic decisions such as expenditures and saving. "Future orientation" (or "concern for future consequences") considers the broader scope, and involves a propensity toward future-oriented behavior, which calls for forward thinking and incurring planning costs in the short-term for (potential) benefits that will be enjoyed in the long-term.

The remainder of the article is organized as follows. The "Literature Review" section summarizes the relevant literature on the topic. The "Method" section describes the dataset and presents summary statistics. The "Results" section presents the benchmark analysis and a sensitivity analysis. The "Conclusions" section summarizes our findings, limitations of the study, and avenues for future research. A final appendix reports the wording of the key original questions and the definition of the variables we identified.

Literature Review

How individuals' attitude impacts their future has long been a core question in academic research. As noted by Chabris, Laibson, and Schuldt (2008), descriptive discounting models capture the idea that most economic agents prefer current rewards to delayed rewards of similar magnitude. Models of delay discounting include the classical exponential discounting model, which assumes a constant discount rate (Samuelson, 1937), and the time-inconsistent model of hyperbolic discounting, inspired by Ainslie (1975) and formalized within the behavioral economic literature. As emphasized by O'Donoghue and Rabin (2015), even though present bias is an old idea (dating at least to the ancient Greeks), it is only following Laibson (1997) that this construct really took hold in economics. In the last 20 years, theoretical research on the topic has been significantly growing. Relatedly, empirical work on present bias has shown that this notion can help us understand economic behavior in several environments.

Available empirical evidence interestingly documents that individuals who succeed in being future-oriented smoke and drink less than others are less likely to report using drugs and are more environmentally concerned (Chabris et al., 2008; Keough, Zimbardo, & Boyd, 1999; Strathman, Gleicher, Boninger, & Edwards, 1994). Further, more pronounced impatience is associated with lower cognitive ability (Dohmen, Falk, Huffman, & Sunde, 2010). Using a novel representative international data set on time preferences, the study by Dohmen, Enke, Falk, Huffman, and Sunde (2016) indicates that patience and economic development are significantly related to both contemporary income as well as medium- and long-term growth rates, with patience accounting for a large fraction of cross-country developmental differences. Next, Figlio, Giuliano, Özek, and Sapienza's (2016) empirical analysis reveals that students from countries with long-term oriented attitudes have better educational performances than students from cultures in which delaying gratification is not very important.

In order to enhance children's and young adults' future orientation, awareness in the financial domain and propensity to save, a formal economic socialization channel (increasingly analyzed in recent years in the empirical literature) is represented by financial education programs in school curricula. Using U.S. data on high school financial education mandates, Bernheim, Garrett, and Maki (2001) ask whether

exposure to a high school financial curriculum leads to higher saving as an adult and find that mandates in fact raise both exposure to financial curricula and subsequent asset accumulation once exposed students become adults. Cole, Paulson, and Shastry (2016) exploit exogenous variation in exposure to personal finance and math courses induced by changes in state-level high school curriculum requirements and focus on the causal impact of exposure to these courses on savings, investment, and credit management outcomes. In contrast to Bernheim et al. (2001), they show that financial education via traditional finance courses is not effective, while additional mathematics training leads to greater financial market participation, investment income, and better credit management.

In order to raise young individuals' awareness in the financial domain and enhance their future orientation and propensity to save, a different but possibly complementary channel is represented by (informal) *socialization by parents*. As Serido and Deenanath (2016) point out, "Raising independent and self-reliant children is an important parenting goal in the USA. Self-reliance is typically defined by children's ability to master developmentally appropriate and increasingly complex social tasks" (p. 291), with financial self-reliance encompassing financial independence, financial capability, and the ability to make prudent financial decisions based on available options and resources. Beutler and Dickson's (2008) interesting review indicates that, even though currently it is not easy to identify the exact mechanisms through which families influence children's economic socialization, a growing body of research has documented that family plays an important educational role in regards to the transmission of materialism, anxiety, ability to delay gratification, and financial prudence. Based on an ethnically heterogeneous sample of first-year college students, Shim, Barber, Card, Xiao, and Serido (2010) show that parents, work, and high school financial education turned out to predict young adults' current financial learning, with parents being the key player within the financial socialization process. Furnham (2001) analyzes British parents' attitudes toward providing pocket money to their children and finds that, in line with earlier work on the same subject matter, most parents are in favor of pocket money schemes, these practices should begin when children are around 6 years old, the amount given should increase linearly with age and saving should be encouraged while borrowing and lending from other children should be discouraged. Interestingly,

his findings also reveal that "money-smart" parents (i.e., parents who scored high on a test focusing on how they would behave in a range of money-related situations with their children) approved of parental involvement in the economic socialization of their children and believed it is their responsibility to model monetary behavior and to discuss the effects of advertisements, buying decisions, and family budgeting with their children. Ashby, Schoon, and Webley (2011) provide evidence that saving at age 16 is linked to saving at age 34 and that socialization experiences in adolescence actually shape the savers that we become later in life. The development of children's saving behavior arguably calls for the development of the ability to use strategies. In this regard, Otto, Schots, Westerman, and Webley (2006) experimentally examine age differences in children's ability to adopt saving strategies when the future is uncertain and interestingly document that their ability to solve economic problems and use temptation inhibiting strategies improves with age, indicating that between the ages 9 and 12 children learn how to functionally deal with bank accounts and bank facilities.

Koonce, Mimura, Mauldin, Rupured, and Jordan (2008) use data on U.S. teenagers in Georgia to explore the link between financial behavior and sources of financial information. Their findings reveal that parents are a key source for providing financial information to their children and that the usual practices of setting financial goals and saving some or all of their earnings were significantly related to obtaining financial information from their parents. In contrast, other family members and friends did not play a relevant role in affecting teenagers' financial knowledge and financial behavior. As noted by Kim and Chatterjee (2013), young Americans often enter adulthood facing increasingly complex financial transactions (from managing credit card debt to obtaining and paying car and student loans) without knowing the specific features of financial products. Their empirical analysis explores the relationship between childhood financial socialization and financial practices of young individuals who are transitioning into adulthood (ages 18–21). They detect a positive association between financial socialization experiences and beneficial financial practices in young adulthood. In particular, respondents who owned bank accounts and had their parents monitoring their spending as children were more likely to own financial assets and had more positive attitudes toward personal finance in young adulthood. Therefore, as highlighted by the authors,

“Effective parental control not only facilitates a child’s adoption of his or her parents’ financial practices but also fosters their positive attitudes toward personal finances” (Kim & Chatterjee, 2013, p. 72). Hibbert, Beutler, and Martin (2004) use U.S. data to examine the role played by parents in reducing the financial strain experienced by children as they enter adulthood and document that financial prudence turned out to decrease financial strain both directly and indirectly, via increased debt avoidance and decreased credit card misuse behavior.

In this strand of literature, a growing number of studies have been specifically focusing on the effects of alternative parental practices, from providing pocket money to teaching budgeting. Abramovitch, Freedman, and Pliner (1991) experimentally investigate children’s relationships with money and their results reveal that children who receive allowances at home are more sophisticated about money than those who do not. Lewis and Scott (2000) study UK adolescents’ economic competency and pocket money practices and show that those who received allowance regularly during childhood were economically more competent some years later. They also find that adolescents belonging to wealthier families were more likely to receive pocket money regularly. However, on the whole, the available evidence on the effects of receiving allowances in childhood and adolescence provides mixed results (Alhabeeb, 1996; Kim & Chatterjee, 2013; Miller & Yung, 1990). More generally, it is worth noting that, even though the existing works on the effectiveness of alternative parental methods provide interesting results, they also leave important questions unanswered. For example, what is the best education strategy to encourage children’s assets accumulation and to enhance their future orientation? To this aim, can different parental practices be fruitfully *combined* or is it better to use (some of) them *separately*?

In this regard, the articles that are most related to ours are those of Bucciol and Veronesi (2014) and Webley and Nyhus (2006, 2013). Bucciol and Veronesi (2014) use the same dataset to study the correlation between the decision to save and several parental practices, finding in particular that savings are larger and more frequent after receiving lessons on budgeting from the parents during adolescence. Webley and

Nyhus (2006) consider the same variables but on a subset (about 300 observations) of the dataset that we use in this article, and with a different focus, as they are interested in investigating the transmission of attitudes and preferences from parents to children. They find that parental behavior and parental orientations (conscientiousness, future orientation) have a weak impact on children’s economic behavior and on their economic behavior in adulthood. Children’s future orientation is linked with less smoking and with higher accumulated bank savings, and is best predicted by their fathers’ conscientiousness, their parents’ future orientation and the quality of relationships within the family. However, in general, the effect size is very small. Webley and Nyhus (2013) use data from European young adults and teenagers and, in the first part of their study, explore the role of four different economic socialization methods using a sample of young adults who answered the questions during one specific year. Their univariate correlational study detects a positive relationship between parental encouragement and the ability to control spending, saving preferences, future orientation, conscientiousness, and saving.

The aim of our study is similar to that of Webley and Nyhus (2013), but we use an approach closer to that of Bucciol and Veronesi (2014), which considers a richer dataset covering the period of 1996–2015 and a much broader age range of 18–80 (rather than the year 2006 only and the 18–32 age range as in Webley & Nyhus, 2013). This allows us to more thoroughly examine the association between future orientation and planning horizon, on the one hand, and alternative parental practices and having received financial teachings during childhood, on the other hand. More specifically, we are interested in understanding whether regularly receiving a money allowance from parents is relevant *per se* (as some of the studies we reviewed in this section suggest) or whether it is important mainly when it is *combined with* receiving financial teachings from parents, that is, a variable that is being increasingly investigated in recent work on saving behavior (see, in particular, Bucciol & Veronesi, 2014). In addition, as we make clear in the next section, our multivariate analysis is able to isolate the net contribution of saving education on future orientation, after controlling for observed characteristics of the individuals.

Method

Data

The analysis presented in this article is based on the waves 1996–2015 using the DHS. DHS is a panel household survey, collected annually by CentERdata, on the main characteristics of a representative sample of Dutch households. The interview is performed over the Internet; participants without Internet access are provided with a device and technical support. The questionnaire is organized to cover six broad areas: demographics, work, housing, health, assets, and psychological factors.

From the original sample we applied the following restrictions in order to generate a homogeneous sample of comparable individuals: We only keep households with three or more observations, whose head is in the economically relevant age range of 18–80, and not belonging to the high-income panel that was surveyed in the years before 2000. For each of these households we consider the head only. The final sample used in the analysis consists of 7,140 observations with complete information on 1,340 households. On average our dataset includes 5.33 observations per household, which helped us get accurate estimates of the age and time effects, and to minimize measurement error in time-invariant variables such as those on informal education received during childhood.

Variables

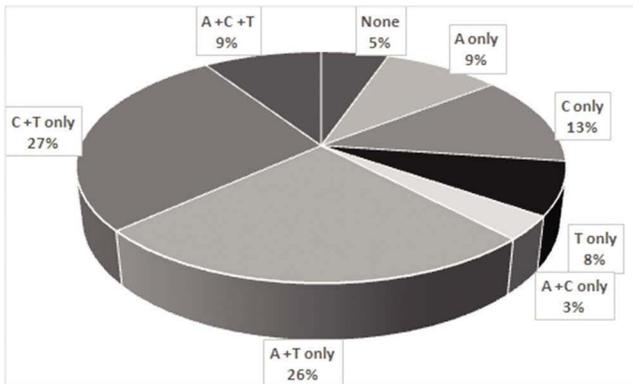
Since the year of 2004, DHS asks questions about any type of informal education toward saving received when respondents were children or adolescents (age 8–16). This allows us to know (a) whether the respondents regularly received a money allowance from their parents, (b) if they were free to spend money as pleased, and (c) if they received any teaching on how to budget and were motivated to save. The exact wording of the questions and the definition of the variables in the analysis, is reported in Appendix A.1. Our three variables are built as dummies, and were labeled as: “Allowance” (A), “Control over money” (C), and “Teaching” (T). As we mentioned earlier, our key variables on informal saving education are only available since 2004. We then attribute to previous years the prevailing answer reported since 2004.

As anticipated above, the key variables for this study are *planning horizon* and *future orientation*; the DHS questions and the definitions for the variables used in the analysis are listed in Appendix A.2. The planning horizon variable is discrete in the 0–4 range and refers to the time horizon considered by the household when deciding about planning expenditures and saving; the future orientation variable is discrete in the 0–100 range and captures the propensity toward distant versus immediate consequences of possible behaviors (not necessarily connected with saving; on future orientation, see Strathman et al., 1994). Both variables are higher when the time horizon is longer. It is worth noting that our measure of future orientation is clearly connected to the classical notion of discount rate. However, while economists’ experimental measures of individuals’ concern for the future typically assess discount rates focusing on material rewards (giving participants choices between smaller-sooner and larger-later rewards) and, therefore, capture a *domain-specific* individual attitude toward present versus future economic outcomes, future orientation refers to a *general* attitude toward one’s future.

The control variables cover standard sociodemographic information (age, gender, marital status, education, household size), economic and financial information (occupation, income, financial assets, debt holding, home ownership) plus self-assessed health status, and financial literacy.

As a robustness check, we replaced the self-assessed financial literacy with two objective indicators (on basic and advanced literacy) as seen in the research of Van Rooij, Lusardi, and Alessie (2011). They originate from a special module added to the 2005 DHS survey. The two variables are obtained from two separate factor analyses and include a set of 5 and a set of 11 raw questions, respectively. Basic financial literacy refers to simple financial calculations, whereas advanced financial literacy refers to knowledge of financial assets, risk and return, and the stock market. For details, see Van Rooij et al. (2011). We pay attention to financial literacy and the way it is measured, because informal saving education could also make individuals more aware of the importance of acquiring knowledge about finance. Incorporating the specification variables on

Figure 1. Frequency of informal education methods.



Note. A, C, and T refer to different saving education methods. “A” stands for “Allowance”; “C” stands for “Control over money”; “T” stands for “Teaching.”

financial literacy helps us to disentangle the net effect of informal saving education from this spurious effect.

Analysis Strategies

We employed a random-effect ordered probit model (Planning Horizon) and a random-effect GLS model (Future Orientation); the distinction involved the different nature of the two variables. Notice that we cannot implement fixed-effect models here because they do not allow for the estimation of coefficients for our key (time-invariant) explanatory variables.

Panel data often undergo attrition problems. In our case, however, attrition does not seem to skew our results according to the test suggested by Nijman and Verbeek (1992). Our results from this test are available upon request.

Results

Descriptive Statistics

As in Buccioli and Veronesi (2014), we consider all the eight possible combinations of informal education methods (A, C, and T); their frequency is plotted in Figure 1. The most popular alternatives involved the combination of A + T or C + T, with more than 25% observations each; the absence of informal education (labeled “none”) is relatively infrequent as it involves just 5% of the respondents.

Table 1 reports summary statistics on the variables used in the analysis. The average respondent is 55 years old, male, with a partner but no children living together, employee, with a high school degree, home-owner, with a household income of 34 thousand euros and financial assets worth 55 thousand euros. Monetary values were converted to 2015 prices using the consumer price index (CPI) index, all items (source: OECD).

Table 2 reports the average for the planning horizon and future orientation variables, based on the type of informal education received when children or adolescent. The time horizon, according to both variables, is systematically shorter in the absence of education; in general, for each variable, the average is significantly different conditional on the education strategy implemented (one-way ANOVA test; the null hypothesis is that the average is the same; p -value $< .01$ for both variables).

Planning Horizon

Table 3 reports the results from a random-effect ordered probit model on the planning horizon. The panel-level variance component is always significant and quite high (around 0.66), and a test for panel effects in the ordered probit model always rejects the null hypothesis, concluding that it is advisable to use a model for panel data.

Column (1) includes all the control variables plus macro-area and year effects, and shows that the horizon is longer in the presence of a partner, with higher education, more assets and in the absence of debt. The horizon also tends to decrease with age. The specification models the relationship between the horizon and age through a quadratic function; the marginal effect of age is $0.714 - 0.07 \times 2 \times \text{age}/10$ and is null at age $(0.714 \times 10)/(0.07 \times 2) = 5.1$. For individuals older than 5, the effect is negative. Importantly, we also find a strong positive effect related to (self-reported) financial literacy.

In Column (2) we add to the specification the three possible methods of informal saving education. Here we learn that none of them are significant. In Column (3) we replace the dummies on saving education methods with dummies on the possible strategies; the excluded category is the absence of informal education. Still, we find that no strategy correlates

TABLE 1. Summary Statistics (7,140 Observations)

Variable	<i>M</i>	<i>SD</i>	Minimum	Maximum
Planning horizon	1.384	1.143	0	4
Future orientation	53.731	13.807	1.667	96.667
A	.474	.499	0	1
C	.526	.499	0	1
T	.695	.461	0	1
A only	.093	.290	0	1
C only	.126	.332	0	1
T only	.074	.262	0	1
A + C only	.034	.180	0	1
A + T only	.254	.435	0	1
C + T only	.274	.446	0	1
A + C + T	.093	.291	0	1
Age	54.773	13.570	21	80
Female	.212	.409	0	1
With partner	.668	.471	0	1
Household size	1.209	1.188	0	1
If children	.267	.442	0	1
Employee	.611	.487	0	1
Self-employed	.022	.148	0	1
Retired	.227	.419	0	1
High school	.608	.488	0	1
College	.152	.359	0	1
Income (k EUR)	33.785	23.224	0	746.609
Fin. assets (k EUR)	55.145	107.730	0	2,028.398
If debt	.211	.408	0	1
Home-owner	.666	.472	0	1
Poor health (self)	.210	.407	0	1
Fin. literate (self)	.279	.449	0	1
Fin. literate (basic)	0	1	-5.339	0.437
Fin. literate (advanced)	0	1	-2.649	1.096

Note. A, C, and T refer to different saving education methods. “A” stands for “Allowance”; “C” stands for “Control over money”; “T” stands for “Teaching.” The last two variables are available on 4,788 observations only.

TABLE 2. Average Orientation by Informal Education Strategy

Informal education	Observations	Planning horizon	Future orientation
None	379	1.211	38.340
A only	662	1.351	41.400
C only	898	1.306	40.783
T only	529	1.493	42.722
A + C only	240	1.488	43.342
A + T only	1,814	1.434	43.556
C + T only	1,953	1.376	41.905
A + C + T	665	1.377	43.923

Note. A, C, and T refer to different saving education methods. “A” stands for “Allowance”; “C” stands for “Control over money”; “T” stands for “Teaching.”

with the planning horizon variable, which states that having received informal saving education fails to foster long-term investment planning. The different strategies are not even jointly significant according to a Chi-squared test (null hypothesis: The strategies are not significant. *P*-value: .90).

Respondents can assess their financial literacy with error. As a final robustness check, Column (4) replaces self-assessed financial literacy with two objective indicators of financial literacy as seen in Van Rooij et al. (2011). The questions behind the indicators were asked in 2005 only; we arbitrarily assume financial literacy is constant over time and assign to each observation of the individual the 2005 answer. We are aware that this is a strong assumption, as individuals may learn and improve their knowledge over time. However, we believe that most of the knowledge is acquired during the youth and young adult age (i.e., before entering the sample), and falls only in old age with the decay in memory and problem-solving skills detected in prior work (see e.g., Finke, Howe, & Huston, 2017). For this reason, we expect actual financial literacy not to differ much from the one observed in 2005.

The new regression is based on fewer observations, as we could not collect data on objective financial literacy for many households. However, our benchmark results are confirmed. In particular, we keep on finding a positive effect of financial literacy and the absence of significant effects of the saving education strategies.

TABLE 3. Planning Horizon

	(1)	(2)	(3)	(4)
A		.034 (.068)		
C		-.000 (.065)		
T		.072 (.061)		
A only			.081 (.153)	.078 (.206)
C only			.064 (.148)	.049 (.197)
T only			.195 (.163)	.200 (.212)
A + C only			.194 (.208)	.283 (.280)
A + T only			.160 (.138)	.144 (.184)
C + T only			.118 (.136)	.099 (.181)
A + C + T			.153 (.153)	.108 (.199)
Age/10	.714* (.123)	.723* (.123)	.722* (.123)	.719* (.157)
(Age/10) ²	-.070* (.012)	-.070* (.012)	-.070* (.012)	-.072* (.015)
Female	.020 (.072)	.021 (.072)	.024 (.072)	.013 (.096)
With partner	.171** (.068)	.171** (.068)	.172** (.068)	.090 (.085)
Household size	-.007 (.041)	-.005 (.041)	-.006 (.041)	-.020 (.052)
If children	-.105 (.088)	-.107 (.088)	-.105 (.088)	-.051 (.112)
Employee	-.052 (.074)	-.052 (.074)	-.053 (.074)	-.064 (.092)
Self-employed	.277*** (.157)	.285* (.157)	.287* (.157)	.252 (.194)
Retired	-.054 (.082)	-.051 (.082)	-.053 (.082)	-.060 (.104)
High school	.168* (.058)	.168* (.058)	.168* (.058)	.228* (.077)
College	.305* (.086)	.298* (.087)	.298* (.087)	.325* (.113)
Ln(income)	-.005 (.021)	-.005 (.021)	-.005 (.021)	.008 (.026)
Ln(fin. assets)	.091* (.013)	.091* (.013)	.090* (.013)	.097* (.017)
If debt	-.126* (.044)	-.124* (.044)	-.124* (.044)	-.123** (.054)
Home-owner	.104** (.048)	.101** (.048)	.101** (.048)	.137** (.061)
Poor health (self)	.022 (.046)	.022 (.046)	.021 (.046)	.065 (.056)
Fin. literate (self)	.159* (.042)	.159* (.042)	.160* (.042)	
Fin. literate (basic)				.072*** (.038)
Fin. literate (advanced)				.089** (.042)
Cut point 1	1.679* (.378)	1.789* (.389)	1.841* (.400)	1.835* (.527)
Cut point 2	2.520* (.378)	2.630* (.390)	2.683* (.400)	2.627* (.528)
Cut point 3	3.732* (.380)	3.842* (.391)	3.895* (.402)	3.866* (.529)
Cut point 4	4.854* (.381)	4.964* (.393)	5.017* (.403)	5.008* (.531)
Macro-area FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Log-likelihood	-9,274.090	-9,273.217	-9,272.679	-6,150.134
Panel-level var. comp.	.665* (.044)	.665* (.044)	.664* (.044)	.644* (.054)
Test panel effects	1,476.570 [.000]	1,474.250 [.000]	1,470.030 [.000]	1003.060 [.000]
Observations	7,140	7,140	7,140	4,788
Households	1,340	1,340	1,340	700

Note. A, C, and T refer to different saving education methods. “A” stands for “Allowance”; “C” stands for “Control over money”; “T” stands for “Teaching.” We estimate the parameters with a random-effect ordered probit model. Standard errors in round parentheses; *p*-values in squared parentheses.

p* < .01. *p* < .05. ****p* < .1.

Future Orientation

Table 4 replicates the analysis of Table 3 using “future orientation” as dependent variable. Given the nature of the variable (discrete but with 61 possible outcomes), in this case we estimate the parameters with a random-effect GLS model. Around 65% of the residual variance is attributable to the panel component, and a formal Breusch–Pagan test always concludes that it is preferable to include panel effects and then to consider a model for panel data.

Column (1) includes only control variables plus macro-area and year effects in the specification. We learn that future orientation increases with education, wealth, financial literacy, poor health conditions, and decreases with age and among employees.

In Column (2) we add explanatory variables for the three education methods. We see that receiving both an allowance and teachings about saving during childhood significantly increases adult future orientation, with the increase being in the order of 2 points out of 100. The effect of an allowance is roughly the same as that of having a high school degree (+1.6), while the effect of teaching is about half the effect of having a college degree (+2.3). However, the allowance and teaching methods show coefficients that are not significantly different from each other according to a Chi-squared test (null hypothesis: The coefficients are the same. *P*-value: .53), while they are both more important for future orientation than control over money (whose coefficient is not significant).

In Column (3) we finally consider the eight possible strategies. We see that some strategies provide significant correlations with future orientation. The key method indicates “teaching” (T), as almost all the significant strategies involve T; the only exception is the combination of “allowance” and “control over money” (A+C). Each of these strategies increases the future orientation index by about 5 points based on a 0–100 scale. In contrast, assessing “allowance” and “control” separately shows no impact on future orientation with only the combination of the two having implications comparable to those of teaching. We view this finding as consistent with Kim and Chatterjee’s (2013) claim that “Giving an allowance itself may not be the most

effective socialization process to develop financial behaviors” (p. 70; see on this also Ashby et al., 2011).

As for saving education, the table ends with a robustness check (see Column (4)) where self-assessed financial literacy is replaced by two objective indicators of financial literacy. Over the two variables, basic financial literacy does not seem to discriminate between different levels of future orientation, while advanced financial literacy turns out to be more relevant. Our previous results are generally consistent, with the exception of A+C that is no longer significant with these variables. Hence, only the “teaching” method, alone or in combination with other methods, seems significant, and is robust to the definition of financial literacy used.

We conclude the subsection with a graphical representation of the regression output. First, Figure 2 plots the average time pattern of future orientation for an average individual. We are interested in comparing the group of individuals who received teachings about saving (i.e., “T,” which seems the most relevant method) with the rest of the population. To this end predictions are based on the model in Column (2) of Table 4, extended to include the interaction between the year dummies and the dummy variable for teaching. From the figure we see that the time profile is rather flat (the large confidence interval for 2012 depends on the scant number of observations retained in the regression for that year), although the period under investigation covered markedly different economic conditions (the country experienced two full economic cycles of growth and recession). This finding is in line with Strathman et al. (1994) study, in which they show that future orientation is stable over time. In addition, future orientation for those who received teachings to save is systematically above future orientation for the others, apart from the year 2000.

Figure 3 plots the average age profile of future orientation for an average individual. In this case, predictions are based on the model in Column (2) augmented with the interaction between the polynomial on age and the dummy for teaching. Not unexpectedly, a clear declining trend is observable, consistent with the life-cycle; however, we believe it is worth highlighting that future orientation of those who received teachings is constantly above that of the other individuals.

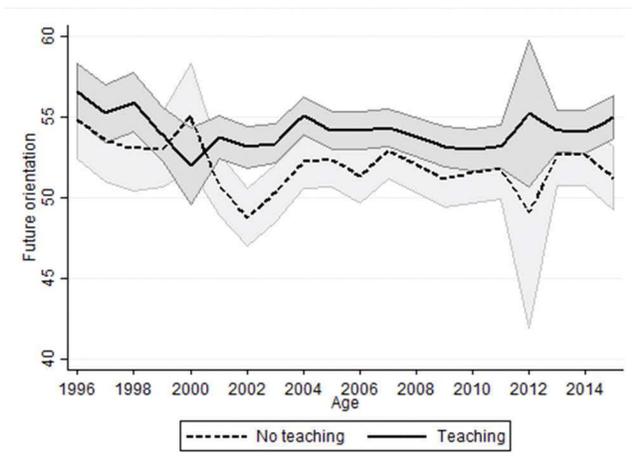
TABLE 4. Future Orientation

	(1)	(2)	(3)	(4)
A		1.635** (.790)		
C		.995 (.743)		
T		2.332* (.708)		
A only			2.457 (1.746)	1.618 (2.318)
C only			2.523 (1.694)	3.864*** (2.218)
T only			5.378* (1.873)	5.630** (2.404)
A + C only			6.175** (2.425)	5.308 (3.242)
A + T only			5.110* (1.573)	6.454* (2.072)
C + T only			4.120* (1.557)	4.225** (2.040)
A + C + T			6.211* (1.739)	6.539* (2.249)
Age/10	1.146 (1.039)	1.424 (1.040)	1.405 (1.041)	3.170** (1.301)
(Age/10) ²	-.222** (.099)	-.228** (.099)	-.224** (.099)	-.387* (.119)
Female	-.378 (.796)	-.344 (.794)	-.302 (.797)	1.128 (1.059)
With partner	.974*** (.576)	.958*** (.576)	.990*** (.576)	1.275*** (.691)
Household size	-.150 (.340)	-.108 (.340)	-.116 (.340)	-.421 (.416)
If children	1.127 (.702)	1.086 (.701)	1.104 (.701)	1.237 (.870)
Employee	-1.438** (.660)	-1.470** (.659)	-1.493** (.660)	-.872 (.809)
Self-employed	-.946 (1.440)	-.696 (1.439)	-.696 (1.440)	-.445 (1.717)
Retired	-1.052 (.668)	-1.041 (.668)	-1.069 (.668)	-1.127 (.823)
High school	1.539* (.531)	1.497* (.531)	1.492* (.532)	1.850* (.696)
College	5.068* (.881)	4.805* (.884)	4.804* (.884)	2.905* (1.127)
Ln(income)	.111 (.156)	.107 (.156)	.105 (.156)	.036 (.187)
Ln(fin. assets)	.476* (.102)	.457* (.102)	.449* (.102)	.379* (.133)
If debt	.103 (.338)	.137 (.338)	.139 (.338)	.410 (.405)
Home-owner	.831** (.399)	.790** (.399)	.790** (.399)	.792 (.502)
Poor health (self)	.817** (.356)	.823** (.356)	.817** (.356)	1.124* (.436)
Fin. literate (self)	.784** (.335)	.788** (.335)	.795** (.335)	
Fin. literate (basic)				.734*** (.418)
Fin. literate (advanced)				2.030* (.464)
Constant	48.801* (3.235)	44.612* (3.406)	43.408* (3.565)	39.211* (4.686)
Macro-area FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Var. fraction due to panel	.655	.653	.653	.627
Test panel effects	9,901.550 [.000]	9,634.010 [.000]	9,518.350 [.000]	6,709.330 [.000]
Observations	7,140	7,140	7,140	4,788
Households	1,340	1,340	1,340	700

Note. A, C, and T refer to different saving education methods. “A” stands for “Allowance”; “C” stands for “Control over money”; “T” stands for “Teaching.” We estimate the parameters with a random-effect GLS model. Standard errors in round parentheses; *p*-values in squared parentheses.

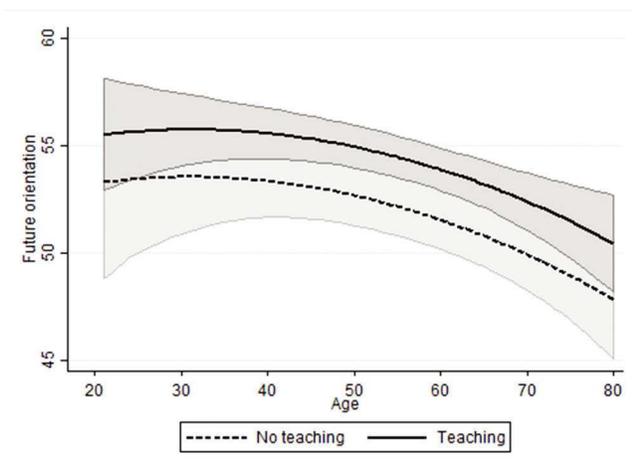
p* < .01. *p* < .05. ****p* < .1.

Figure 2. Predicted future orientation over time.



Notes. 95% confidence interval in the colored areas.

Figure 3. Predicted future orientation by age.

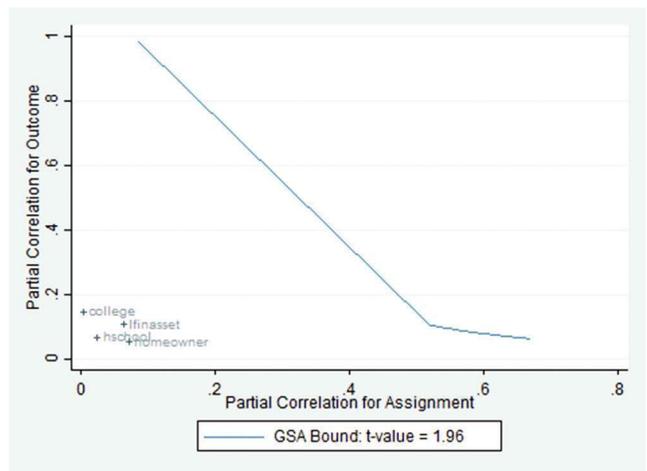


Notes. 95% confidence interval in the colored areas.

Generalized Sensitivity Analysis

The analysis presented thus far could be flawed by the absence of specific important variables. For instance: informal saving education received after childhood or the characteristics of the family of origin. Unfortunately such variables are not available, and we cannot exclude that future orientation and informal education to save are both influenced by unobservable characteristics of the parents (such as their preferences).

Figure 4. GSA on the benchmark equation.



To partially control for this, in this subsection we perform the “Generalized Sensitivity Analysis (GSA)” developed by Harada (2013), which improves the original “Sensitivity Analysis” of Imbens (2003). GSA tests under which conditions on omitted variables the significant estimate of one coefficient (the “assignment” variable) would be no longer significant in a regression involving an “outcome” variable. In our case we focus on the regression shown in Table 4, Column (2), where the outcome variable is future orientation; as assignment variable we choose the “teaching” dummy, which seems the most relevant dimension of saving education. GSA then generates a sequence of pseudo-random variables that, once added to the specification, make the assignment coefficient insignificantly different from 0% at the 5% significance level. Figure 4 plots the correlation between the pseudo-random variables and the assignment (on the horizontal axis) and between the pseudo-random variables and the outcome variable (on the vertical axis).

To help us understand whether the correlation is small or large, the figure also plots the correlation with assignment and outcome variables involving few explanatory variables already included in the specification (concerning education and household wealth). The unobservable variables should be correlated much more than the observable variables in order to make the effect of teaching insignificant. In particular, since it is difficult to believe that our analysis omits unobservable variables more highly correlated with future orientation than education and wealth, we conclude that our findings are robust to potential unobserved confounders.

Conclusions

Our empirical analysis indicates that informal saving education, which, as we know from previous literature (see Bucciol & Veronesi, 2014), has been shown to promote saving, does not have an impact on the time horizon taken into account when considering expenditures and savings. In contrast, informal education is significantly associated with a measure of (general) future orientation, namely the consideration of distant rather than immediate consequences of possible behaviors. Our results are shown to be robust using a generalized sensitivity analysis and also controls for financial literacy. On the whole, our findings regarding the link between informal saving education and the two key variables of interest (future orientation and planning horizon) suggest that while informal saving education seems to favor an individual's inclination to think about the future in general (i.e., also in other domains than the financial one), it does not necessarily promote choices based on a long-term horizon more than decisions involving a short-term horizon. Our analysis also indicates that the future orientation index is rather stable over time (which is not trivial, especially because our dataset covers two full business cycles) and declines with age according to the life-cycle.

In regards to the effectiveness of different parental practices, we find that, among the three methods of saving education included in our analysis (i.e., allowance, control over money, teachings about saving), only having received teachings to save is strongly associated with an increase in the future orientation index. The evidence holds both when parental teachings were implemented alone and in combination with other educational methods. In contrast, when taken separately, the other two practices (allowance and control over money) do not seem to effectively make individuals more future-oriented later in life.

Financial teachings received during childhood and adolescence arguably succeed in increasing individuals' ability to delay gratification and exercise self-control later in life, so that they are better able to care about their long-term well-being. We claim that our findings contribute to the strand of literature focusing on the relative effectiveness of alternative informal socialization channels, that so far has been providing mixed evidence on the role that different parental practices can play in inducing individuals to save and making them economically more competent (see

on this Kim & Chatterjee, 2013). In particular, our results indicate that teachings about saving are key to make the usage of allowance effective. It is plausible that the reason why the two methods have to be combined to be effective is that regularly receiving money during childhood or adolescence (i.e., getting an allowance) generates positive long-term effects on individuals' concerns for their future only insofar as they manage to truly give importance to money and internalize the underlying principle ("budgeting and saving are important"). The latter step seems to crucially pass through parental teachings. However, we should also make clear that, while we speculatively argue that norm internalization is key to make the usage of parental practices such as giving money allowance to children effective, future research on the topic will need to address this issue by specifically focusing on the links between norm internalization, parental teachings, and alternative practices such as money allowance. More generally, we also believe that future work on the effectiveness of alternative financial education methods will greatly benefit from empirical research that will be able to generate new insights by combining different data sources and, in particular, survey data (like the ones that we used our analysis, in line with most of the aforementioned studies in this research area) with data from field experiments as well as from controlled laboratory experiments based on financially incentivized individual decisions.

In the next years, it will be important to also shed further light on the sources of heterogeneity in individual future orientation. As noted by Beutler and Dickson (2008), culture, media, schools, peers, and family are all broad external influences on economic socialization: "They work, along with children and adolescents' natural developmental tendencies, to create their unique understanding of the consumer marketplace and the economic world in which they live" (p. 98). Therefore, it will be interesting to discover whether or not families play the only significant role or that other socializing agents can play a relevant role in making adult individuals more future-oriented as well. Does formal socialization (e.g., by means of financial education in school curricula) enhance individual future orientation? Is socialization by parents or teachers more effective when it occurs through the transfer of cognitive knowledge or, as suggested by Beutler and Dickson (2008), through the transfer of values, attitudes, and aspirations? Is the influence of peers (e.g., in the workplace) relevant for individuals' concerns for their

future? We leave these open-ended questions as interesting opportunities for future research on the theme.

As we have shown in the previous sections, available empirical evidence documents that future orientation is positively associated with a series of healthy and environmentally favorable behaviors and that patience plays an important role in accounting for cross-country developmental differences. Therefore, also based on this evidence, it is plausible to argue that differences in future orientation across individuals have relevant implications in terms of income, wealth, education and, therefore, in terms of social mobility and economic inequality for societies. The core findings of our study imply that, in order to enhance future orientation within contemporary societies, the role that families can play in financial socialization processes is key. In particular, we showed that well-known parental practices examined by prior research, such as giving money allowance to children, are especially effective insofar as parents succeed in combining them with sound financial teachings. Therefore, it will be crucial that, in the next future, financial counselors and educators increasingly highlight the importance of this financial socialization strategy for the well-being of future generations.

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Appendix. Key Variables

A.1 Variables on Informal Saving Education Received During Childhood

[DHS variable name: JEUGD1]

Question: “When you were between 8 and 12 years of age, did you receive an allowance from your parents then? By allowance we mean a fixed amount received on a regular basis.” Possible answers: “Yes”; “Yes, but it was sometimes forgotten”; “Occasionally”; “No.”

[DHS variable name: JEUGD3]

Question: “When you were between 8 and 12 years of age, could you spend your money as you pleased?”

Possible answers: “My parents decided on how I spent all my money”; “My parents decided on how I spent most of my money”; “Part of my expenditure was decided by me, the rest was decided by my parents”; “Mostly, I could decide on how I spent my money”; “I could’ decide on all my expenditures.”

[DHS variable name: JEUGD5]

Question: “Did your (grand)parents try to teach you how to budget when you were between 12 and 16 years of age?”

Possible answers: “Yes, they gave me advice and practical help”; “Yes, they gave me some advice and practical help”; “Yes, but to a certain extent”; “No.”

[DHS variable name: JEUGD6]

Question: “Did your (grand)parents stimulate you to save money between the age of 12 and 16?”

Possible answers: “Yes, they emphasized the necessity of saving”; “Yes, they told me how important saving is”; “Yes, but to a certain extent”; “No, not at all.”

The questionnaire includes two other related questions, on doing little chores or jobs for which some money was received, that we exclude as Bucciol and Veronesi (2014) for two reasons: because they do not relate to parents’ behavior (they do not describe informal education from parents), and because they involve active search from the respondent (they may then be endogenous). The remaining four

questions give rise to the three dummy variables that we consider in the analysis. The variables are generated as in Bucciol and Veronesi (2014):

- “*Allowance*” (A): equal to 1 if the answer to JEUGD1 is “Yes” or “Yes, but it was sometimes forgotten”; equal to 0 otherwise.
- “*Control*” (C): equal to 1 if the answer to JEUGD3 is “My parents decided on how I spent all my money” or “My parents decided on how I spent most of my money”; equal to 0 otherwise.
- “*Teaching*” (T): equal to 1 if the answer to JEUGD5 is “Yes, they gave me advice and practical help” or “Yes, they gave me some advice and practical help,” or if the answer to JEUGD6 is “Yes, they emphasized the necessity of saving” or “Yes, they told me how important saving is”; equal to 0 otherwise.

The last variable combines the information on questions JEUGD5 and JEUGD6, that are similar and indeed get similar answers in the dataset: in 73% of the observations the answer to the two questions is the same.

We also exploited the panel nature of the dataset to check for the consistency across waves of the variables. As in Webley and Nyhus (2006) and Bucciol and Veronesi (2014), we frequently observe small inconsistency in the answer of the same respondent in different waves. Whenever we find this inconsistency, we replace the answer with the prevailing answer of the respondent over the waves.

A.2 Variables on Time Horizon

[DHS variable name: PERIODE1]

Question: “People use different time-horizons when they decide about what part of the income to spend, and what part to save. Which of the time-horizons mentioned below is in your household most important with regard to planning expenditures and savings?”

Possible answers: “The next couple of months”; “The next year”; “The next couple of years”; “The next 5–10 years”; “More than 10 years from now.”

From the answer to this question we generate a discrete variable called “*planning horizon*” ranging in the 0–4 interval

and taking the following values: 0 if “The next couple of months”; 1 if “The next year”; 2 if “The next couple of years”; 3 if “The next 5–10 years”; 4 if “More than 10 years from now.”

[DHS variable name: TOEK]

Question: “Now we present you some statements about the future. Please indicate for each statement to what extent you agree or disagree.

1. I think about how things can change in the future, and try to influence those things in my everyday life.
2. I often work on things that will only pay off in a couple of years.
3. I am only concerned about the present, because I trust that things will work themselves out in the future.
4. With everything I do, I am only concerned about the immediate consequences (say a period of a couple of days or weeks).
5. I am ready to sacrifice my well-being in the present to achieve certain results in the future.
6. I think it is important to take warnings about negative consequences of my acts seriously, even if these negative consequences would only occur in the distant future.
7. I think it is more important to work on things that have important consequences in the future, than to work on things that have immediate but less important consequences.

8. In general, I ignore warnings about future problems because I think these problems will be solved before they get critical.
9. I think there is no need to sacrifice things now for problems that lie in the future, because it will always be possible to solve these future problems later.
10. I only respond to urgent problems, trusting that problems that come up later can be solved at a later stage.

Possible answers: respondents indicate the extent to which they agreed or disagreed with each statement, in a scale from 1 (the statement is “extremely uncharacteristic”) to 7 (“extremely characteristic”).

The statements belong to the “Consideration of Future consequences” scale developed by Strathman et al. (1994). This is a measure of the extent to which people consider distant versus immediate consequences of possible behaviors. The DHS version has 10 items (rather than the 12 of the original) and a different response format, and was already used in several works (for instance Webley & Nyhus, 2006). From this list of statements we construct a variable called “*future orientation*” by adding the answers to the 10 questions (questions 3, 4, 8, 9, and 10 were reversed). The resulting variable can then take values from 10 to 70. To simplify the interpretation, we rescale the variable to take values in the 0–100 interval.