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Parents' influence on children's future orientation and saving ☆

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Abstract

The purpose of this paper is to investigate the notion that the behaviour of parents (particularly that related to inter-temporal choice) influences the economic behaviour of their children. Exploiting Dutch panel data, we compare the future orientation, conscientiousness and saving of children aged 16–21 with those of their parents in order to explore the notion that an approach to economic problems and decisions is transferred from one generation to the next. In addition, we study if aspects of economic socialisation influence economic behaviour in adult life. The results show that parental behaviour (such as discussing financial matters with children) and parental orientations (conscientiousness, future orientation) have a weak but clear impact on children's economic behaviour as well as on economic behaviour in adulthood.

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1. Introduction

People's preferences for the long-run are often in conflict with their short-run behaviour. When planning for the long term, people often express intentions to save. When asked about their actual saving, however, people frequently admit to saving less than planned (e.g., Katona, 1975). People also often express preferences for having money to cover unforeseen emergencies but many households have very little saving. For example, tax data show that one in three Norwegian adults has less than €1100 in total bank savings and have therefore little available for unforeseen expenses[1] (Mangler penger på bok, 2004). Lusardi (1999) reported that one-third of Americans aged 51–61 have not begun to think about their retirement and therefore approach their retirement with very small wealth holdings. At the same time, consumer debt has increased dramatically during the past decades in most Western economies (e.g., Maki, 2000; Wood, 1998). The gap between long-run intentions and short-run actions is very clear in both saving and borrowing choices.

One factor that is frequently mentioned as an important determinant of individual saving and spending, both in the economic and economic psychological literature, is the ability to delay gratification and exercise self-control (e.g., Ainslie, 1975; Strotz, 1956; Wärneryd, 1999; Wood, 1998). Experimental studies show that people vary in their preferences for and ability to delay gratification and this has impact on a range of economic and other decisions. Differences in the ability to delay gratification have therefore been suggested as one possible explanation for the observed heterogeneity in household saving behaviour. A growing body of evidence suggests that this is a plausible idea (e.g., Angeletos, Laibson, Repetto, Tobacman, & Weinberg, 2001). Moreover, delay of gratification behaviour has also been proposed as an important factor in explaining why social status is transferred from one generation to another (e.g., Martineau, 1977; Schneider & Lysgaard, 1953). Children are assumed to adopt the time preferences and ability to delay of gratification of their parents, though there is very little evidence on this issue (see Wood, 1998, for a review). In this paper, we will explore this conjecture further.

The notion of differences in rates of time preference as an explanation for inter- and intra-generational economic inequality was put forward by Fisher (1930). The rate of time preference is the discount rate a person implicitly uses when adjusting for time lags between different alternatives. A high rate of time preference means that future outcomes are heavily discounted when compared to outcomes available in the present. The higher the discount rate used for discounting a future reward the smaller this reward will be perceived in the present. A high rate of time preference is therefore likely to be associated with low willingness to delay gratification and low saving. Fisher proposed many factors that would influence time preference, income level being one of them. This relationship has been found in empirical studies by, for

[1] The statistics are based on the Directorate of taxes' tax settlement database, and includes over three million employees and pensioners with tax settlements in June. The remaining tax settlements for personal taxpayers are concluded in the autumn and include self-employed persons, employees and pensioners married to self-employed persons, and employees and pensioners with more complicated returns.

example, Lawrance (1991) and Hausman (1979): the lower the income, the higher the rate of time preference. Fisher proposed that a low income would produce a high rate of time preference (high impatience to consume) because of many unfulfilled needs. On the other hand, a low willingness to delay gratification can also have a negative effect on decisions concerning education and economic investments, which in turn will lead to low income and unfavourable economic conditions. Lawrance (1991) noted that impatient individuals might prefer jobs with flat wage paths, as opposed to careers that are likely to produce high wages only after a period of training or education. Liquidity constraints that make it difficult to borrow future labour income may strengthen their preferences.

Strotz (1956) took Fisher's theory a step further when he argued that people have hyperbolic discount functions that may lead to dynamic inconsistent behaviour. Hyperbolic discounting means that the discount rates used when discounting future events change as a function of time. The closer an outcome is to the present, the higher the discount rate used to assess the present value of the alternative outcomes. An implication of this is that people may change their preferences in favour of a small outcome as this outcome comes closer in time. For example, when asked if we would like a piece of chocolate cake tomorrow, we may think about our long-term goal of losing weight and give a negative reply. When tomorrow comes, however, and the chocolate cake is there on the table in front of us, it may suddenly appear much more attractive than it did from a more remote temporal distance resulting in a (short-term) change in preferences. These are situations where the *ability* to delay gratification may play an important role. Psychologists have shown how people vary in their ability to use strategies (habits, precommitment, avoiding temptations) so that they manage to stick to their long-term plans (e.g., Mischel & Ebbesen, 1970). Common strategies for achieving saving goals have been to enrol in saving clubs and to use automatic transfers from current accounts to saving accounts.

A related concept is "concern for future consequences", or future orientation, which has been found to influence a range of other behaviours involving inter-temporal choice. According to Strathman, Gleicher, Boninger, and Edwards (1994), those who are future oriented smoke and drink less than others and engage in more environmentally concerned behaviour (such as recycling glass). Very similar results (using a different measure of future orientation) were found by Keough, Zimbardo, and Boyd (1999) who reported that those having a more present time perspective are more likely to report using alcohol, drugs, and tobacco. Lusardi (1999) reports that "thinking about retirement" is an important predictor of wealth holdings of households nearing retirement. Other studies also show that future orientation or time horizon is important for economic behaviour (Julander, 1975; Lea, Webley, & Walker, 1995; Webley & Nyhus, 2001).

1.1. Delay of gratification behaviour and time orientation is shaped in childhood

The next question that should be addressed is if delay of gratification behaviour in childhood has any association with behaviour in adolescence. Some scattered

evidence suggests that delay of gratification behaviour is stable over time. Mischel, Shoda, and Rodriguez (1992) carried out experiments on a group of four-year-olds' ability to delay gratification and compared the results with the children's achievements more than ten years later. They found that children who could defer gratification longer than others when they were four years old, were later described as being more successful in school and coping better with frustration and stress than those who were not able to wait. Combining the findings from these studies, Mischel et al. (1992) argue that:

> . . .an early family environment in which self-imposed delay is encouraged and modelled also may nurture other types of behavior that facilitate the acquisition of social and cognitive skills, study habits, or attitudes that may be associated with obtaining higher scores on the SAT[2] and more positive ratings by parents. (p. 158)

Similar conclusions were reached by Maital and Maital (1977). They studied children's ability to delay gratification and concluded that socio-economic factors have an important influence on delay-of-gratification behaviour. Their evidence suggests that time preference patterns are firmly established for life by adolescence. They further argue that differences in time preference among individuals play an important role in determining both the distribution of income at a particular point in time and the transmission of economic inequality from one generation to another. Hence, these studies indicate that delay of gratification behaviour is an important aspect of economic socialisation through childhood that will influence economic behaviour and economic status in adulthood.

A more recent study by Bernheim, Garrett, and Maki (2001) suggests that it is the teaching of self-controlling techniques that is important (also for macro-behaviour). They studied the effect of consumer education policies, in particular, household financial decision-making courses in high school and their influence on subsequent asset accumulation in adulthood. The courses covered topics such as budgeting, credit management, balancing chequebooks and compound interest. The study resembled a natural experiment. Some states never adopted the educational programmes, while others adopted them at different times, making it possible to compare subsequent saving across states and over time. Analysing those young enough to have been exposed to the education, they found that asset accumulation was higher in the states that had adopted the educational programme than in those that did not. Moreover, Bernheim et al. (2001) found that people who, as children, have been encouraged to save using a bank account, save more than others in their adult life. Similarly, those who characterised their parents as having saved more than average saved more than others. The effect of the educational programme was largest for those who characterised their parents as saving less than average, indicating a substitution effect between teaching by parents and teaching in school.

[2] The scholastic aptitude test, which is a measure of cognitive academic competencies and school-related achievements.

1.2. The role of parents

Support has been found for parents' influence on the delay of gratification behaviour of children. Mischel (1961) found in a study of Trinidadian children that father absence is closely associated with children's preference for immediate rewards. He attributed this finding to the children's trust that the promised delayed reward indeed will be forthcoming and argued that the trust is absent or weak in households without fathers. Other evidence that suggests that parental modelling is important is that children from the Trinidadian black subculture, in which immediate self-reward was the prevailing gratification pattern, displayed a greater preference for immediate rewards than children of Trinidadian Indians, who more often exhibited self-denying delayed-gratification behaviour (Mischel, 1958). The same conclusions were reached in a more controlled laboratory setting in which children were exposed to live and symbolic models (through written behavioural descriptions). Children exposed to models that showed preferences for delayed rewards, changed their delay-of-gratification behaviour in favour of delay-reward, whilst the children who were exposed to a model showing immediate-reward preferences altered their behaviour in favour of immediate-reward (Bandura & Mischel, 1965). These results were later successfully replicated by Stumphauzer (1972), using a sample of young prison inmates.

More recent studies have shown that mothers who rate themselves as more restrictive and nurturant (that is displayed what Baumrind, 1971, would call an "authorative" parenting style), tend to have six- to eight-year-old children who delay gratification more than those who are restrictive but not nurturant, that is "authoritarian" (Reitman & Gross, 1997). Using a smaller sample of younger children (four-year-olds) and a different delay task, Mauro and Harris (2000) found that mothers of children who do not delay gratification hold child-rearing attitudes and use teaching techniques that are consistent with a permissive parenting style. Seginer, Vermulst, and Shoyer (2004) studied the link between perceived parenting style and adolescents' motivation to engage in future thinking, the cognitive representation of the future, and future-related behaviours. The domains used in their test were work and career and marriage and family. Their model included self-evaluation as a mediating factor. They found that autonomous-accepting parenting is linked to future orientation indirectly via self-evaluation, self-evaluation is linked directly only to the motivational component, and the motivational component is directly linked to the cognitive representation of the future and behavioural components. They also found some gender effects. Whilst there is some evidence that parents shape their children's general approach to time and concern for the future, very little is known about what impact parents have on their children's saving behaviour (Sonuga-Barke & Webley, 1993). Marshall and Magruder (1960) found that children had more knowledge of money if they were given an allowance, but found no evidence that children shared the money attitudes of their parents. One line of research has focussed on the differences in time orientation and social group, but the results from these studies are not conclusive. For example, Schneider and Lysgaard (1953), studying high-school boys, reported that middle-class boys had a higher propensity to defer gratification than lower-class boys, in that they found a slightly higher

likelihood for middle class than lower-class boys to indicate college plans and to say that they would save instead of spend if winning a large cash prize. Brim and Forer (1956) found that there was a weak relationship between the planning horizon of the respondents (349 undergraduate students at Yale) and their father's occupational status ($r = .11$, $p < .05$) and father's education level (.12, $p < .05$). They did not, however, find these relationships when studying a younger sample of high-school students. Finally, Levy (1976) reported lower-class boys to be more likely than middle-class boys to choose a delayed reward. A problem with these studies of differences between social class and delay of gratification is that they imply an assumption about middle-class parents raising their children in a uniform way, which is different from that of the lower-class parents.

The literature suggests then that there are complicated processes involved when children learn how to handle inter-temporal choices – and also that we know relatively little about exactly how this takes place. There are clearly multiple sources of influence on the child's ability to delay gratification and children learn in a variety of ways, through guidance from parents, explicit educational programs and by observing role models. In addition, the dispositions of children themselves play a role: parents and teachers adjust their behaviour in the light of the way particular children react. In this paper, we are necessarily taking a partial view of the overall process, but would emphasise four mechanisms involved in producing the expected results. First there is modelling, of the kind stressed by Bandura and Mischel (1965). So if parents have a bank account, smoke or often impulse buy and have difficulty in controlling their expenditure, they are modelling these behaviours for their children. Second, there is discussion and guidance, and the explication of situations by parents to their children. Thus, we would anticipate that parents who discuss the household's economic decisions with their children will foster future orientation and an ability to control expenditure. Third, is habit formation: children who use bank accounts (usually set up for them by their parents) when young or who manage a regular source of income carefully will be more likely to continue this behaviour as adults. Finally, there is independence. Children who are given responsibility for financial decisions learn economic skills which also encourage saving. As suggested by Seginer et al. (2004), the effect of these sources of influence may depend on the child's self-image: if you do not feel good about yourself why care about one's future self? This assumption is not however something we have been able to test in this study.

This paper has three main aims. First, to see if it is possible to replicate some of the findings reported by others (for example that those who characterised their parents as having saved more than average saved themselves more than others) using a very different kind of sample. Second, to explore the relationships between a number of important economic psychological variables (future orientation, conscientiousness, saving) in late adolescents/young adults, which, as far as we are aware, have never been considered in previous studies. Finally to explore the relative impact of the economic behaviour of grandparents (as reported by parents) and the economic behaviour and attitudes of parents (as reported by themselves) on the behaviour and time orientation of children (as reported by themselves and by their parents). In order to accomplish these aims we use the data from three waves of the DNB

Household Survey (DHS) to extend our understanding of the role of parents and grandparents in the formation of children's economic behaviour and preferences.

2. Methods

2.1. The data

We used the data collected for the DNB Household Survey. This survey includes detailed information on financial behaviour in addition to items designed to tap various psychological concepts.[3] The questionnaires are answered by all household members aged 16 or over. Data are collected from a tele-panel, which is a panel of households who communicate with the fieldwork company by means of modems and computers. Questions are transmitted to the households on a weekly basis. This approach makes it possible to use longer questionnaires than in other types of surveys, as long questionnaires can be split into 30 minute "chunks".

The sample is representative of the Dutch population with respect to certain socio-economic variables (region, political preference, housing, income, degree of urbanisation, and age of the head of the household). The initial sampling for this panel was carried out using telephone directories as the sampling frame. In order to obtain a sample which was representative with respect to region and urbanisation, a four-step stratified sampling procedure was used. Potential participants were telephoned, asked for background information and whether they would be willing to take part in the panel. Those expressing willingness were then interviewed and introduced to the computer-aided interviewing technique used. Those individuals who ultimately decided to participate agreed to complete questionnaires administered by computer in return for the use of a PC (and modem). Note that this sample was not recruited specially for research into financial behaviour but participants had to agree to answer questions on a variety of topics on a regular basis. A full description of the sampling method used in the DNB Household Survey is given in Nyhus (1996).

2.2. Measures

Below we describe how the different variables were measured. The sample statistics can be found in Table 1.

The following measures were collected from both parents and children.

[3] See Nyhus (1996) for further information about the data collection methods and questionnaires (http://center.kub.nl/pub/vsbpr2.html). Other studies based on this data set include Alessie and Kapteyn (2001), Donkers and van Soest (1999), Webley and Nyhus (2001) and Euwals, Eymann, and Börsch-Supan (2004).

2.2.1. Future orientation

Future orientation was measured by a Dutch version of Strathman et al.'s (1994) "Consideration of Future consequences" scale. This is a measure of the extent to which people consider distant versus immediate consequences of possible behaviours. The Dutch scale had 10 items (rather than the 12 of the original) and a different response format. In the original version, respondents had to indicate the extent to which each statement described them on a scale from 1 (extremely characteristic) to 7 (extremely uncharacteristic). In the Dutch version, respondents had to indicate the extent to which they agreed or disagreed with the statements, from 1 (totally disagree) to 7 (totally agree). The items were (these are back-translated from the Dutch) as follows:

(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.

A composite measure was constructed by adding the answers to these 10 questions (questions 3, 4, 8, 9, 10 reversed). We tested the stability of this index by comparing the score obtained by the same respondent across the two waves 1997 and 1998, respectively. For children participating in both waves, the correlation coefficient between the two scores was $r = .509$ ($n = 54$, $p < .000$), whilst for parents it was $r = .564$ ($n = 72$, $p < .000$).

2.2.2. Conscientiousness

The questionnaires include items from the 16PA (16 Personality adjectives – Brandstätter, 1988), a 32-adjective list representing Cattell's 16 personality factors. The 16PA has been found to be sufficiently reliable to substitute for the 16PF (Brandstätter, 1992). Sixteen of these items were included in the questionnaires

distributed to the 1997–1999 waves. Previous analyses (Wärneryd, 1996) identified factors labelled emotional stability, extroversion and conscientiousness. Webley and Nyhus (2001) carried out two separate factor analyses on all 32 items using the 1993/1994 data and the 1995/1996 data separately and using two mutually exclusive data sets. These analyses confirmed the factor structure reported by Wärneryd. Six adjective pairs loaded on the conscientiousness factor (carefree-meticulous; principled – happy-go-lucky; anxious – unconcerned; little self-control – disciplined; not easily hurt – easily hurt; self-possessed – changeable).

Respondents were asked to characterise themselves using 16 personality dimensions, each represented by 2 bipolar scales. They answered the questions by using a 7-point scale. The instructions given to the respondents were as follows: ''Now we would like to know how you would describe your personality. Below we have mentioned a number of personal qualities in pairs. The qualities are not always opposites. Please indicate for each pair of qualities which number would best describe your personality. If you think your personality is equally well characterised by the quality on the left as it is by the quality on the right, please choose number 4. If you really do not know, type 0 (zero)''. For the purpose of this paper, we constructed a composite conscientiousness measure by adding the scores on the three items present in our data set: carefree-meticulous, little self-control – disciplined; not easily hurt – easily hurt.

2.2.3. Bank saving

The DNB Household survey contains questions about twenty different asset components, such as balances on different types of bank accounts, investments in shares, mutual funds, options, obligations, and certificates as well as the value of real estate and valuable items such as cars, caravans, motorbikes and boats. Since only a small fraction of the households in our sample had types of assets other than bank saving, we restricted ourselves to comparing the bank saving (the sum of balances in current accounts, saving accounts and deposit books) of parents and children.

2.2.4. Smoking behaviour

Respondents were asked whether they smoke cigarettes at all, and could reply using three categories: (1) yes, I smoke every now and then, (2) I smoke every day, and (3) No. Respondents replying that they smoke on a daily basis, were asked if they smoked more or less than 20 cigarettes a day. This was converted to a four point scale from does not smoke (0) to smokes more than 20 a day (3). This measure was included as a behavioural indicator of self-control (as in Webley & Nyhus, 2001).

2.2.5. Net income

Net income was measured by adding different sources of incomes (wages, income from letting out rooms, interest, subsidies etc.), wage-replacing transfers (for example retirement and disability pensions/benefits and unemployment benefits) and subtracting mortgage interest payments and calculated income tax.[4] In addition, any

[4] The exact procedures used when calculating net income is described in the documentation for the DNB Household Survey published at http://center-ar.kub.nl/.

scholarships, student loans, parental support for studies and inheritance are added to the measure.

Net income correlated with other measures related to the financial situation of the households in expected ways. Income was positively correlated with the parents' bank saving ($r = .316$, $p < .000$), fathers' net income was positively correlated with fathers' education level ($r = .364$, $p < .000$), mothers' net income was positively correlated with mothers' education level ($r = .193$, $p < .05$).

2.2.6. Education

All respondents are asked to indicate their highest level of education completed using thirteen categories, from primary to University education. Responses were recoded into high, medium and low education. Low education is the omitted dummy variable in the regression analysis.

The following measures were collected only from the parents:

2.2.7. Economic socialisation

Respondents were asked about their experiences in childhood. The following questions were used to construct a composite measure of economic socialisation:

Q1: When you think back to your childhood, were your parents (5) more economical, (4) somewhat more economical, (3) equally economical, (2) somewhat less economical or (1) much less economical than the average?
Q2: When you were growing up, how often did your parents discuss their personal financial decisions with you? (Respondents answered by choosing one of the following alternatives: 1 (never), 2 (rarely), 3 (sometimes), 4 (often), 5 (always)).
Q3: When you were a teenager, did your parents or other relatives regularly give you money? 0 (no), 1 (yes).
Q4: When you were a teenager, did you regularly earn money (by working for it?) 0 (no), 1 (yes).
Q5: Did you have a bank or savings account, a deposit book, shares or bonds when you were under 16 years old? 0 (no), 1 (yes).

These items comprise a formative measurement scale, which means that there is no reason to expect the items to be correlated as would be the case with a reflective scale (see Jarvis, Mackenzie, Podsakoff, Mick, & Bearden, 2003, for a discussion of this distinction). Therefore, the use of factor analysis is inappropriate for data reduction. Instead, we assume that each item taps into different aspects of economic socialisation and each may have different antecedents. The composite measure was constructed by the following formula:

$$\mathrm{Q1} \times \frac{2}{5} + \mathrm{Q2} \times \frac{2}{5} + \mathrm{Q3} + \mathrm{Q4} + \mathrm{Q5}.$$

The three last items are dichotomous variables, while the first two questions are answered using a five-point scale. We have chosen to increase the relative weight of

these first two questions as they reflect more general characterisations of parenting practices, rather than referring to specific behaviours.

2.2.8. Preference for spending

One question was intended to tap into the construct of time preference concerning the household's discretionary income and was developed by Ritzema (1992): Some people spend all their income immediately. Others save some money in order to have something to fall back on. Please indicate what you do with money that is left over after having paid for food, rent and other necessities. Are you the sort of person that likes to spend his/her money immediately, or are you the sort of person that tries to save as much as possible, or are you somewhere in between those two extremes. If you really do not know, type 0 (zero). The respondent answered by using a 7-point scale labelled (1) I like to spend all my money immediately and (7) I want to save as much as possible.

Parents also had to indicate, for each of their first two children "which part (in percentages) of the money your child is given does he or she spend immediately". The average of the estimates of the mother and father was used as a measure of the child's preference for spending (these scores correlated $r = .79$).

2.2.9. Planning horizon

The question used to measure planning horizon was "People use different time horizons when they decide about what part of income to spend and what part to save. Which of the following time horizons is most important with regard to planning expenditures and savings?" The respondent could choose from the following five alternatives: (1) the next couple of months, (2) the next year, (3) the next couple of years, (4) the next 5–10 years, and (5) more than 10 years from now.

2.2.10. Control of expenditure

Control of expenditure was measured by the question: "Many people find it difficult to plan or control their expenditures. Do you find it difficult to control your expenditures? If you really do not know, type 0 (zero)." The respondent answered by using a 7-point scale where 1 meant totally disagree and 7 meant totally agree.

2.2.11. Relationships within the family

The mothers' and fathers' (independent) ratings of their household on a five point scale from "very good relationships between members of the household" (=1) to "very bad relationships between members of the household" (=5) were used as a measure of the relationships within the family. The two ratings correlated (rho = .38).

2.3. Data preparation

When analysing the effect on economic socialization on bank saving later in life, we used data collected in 1997. We used two different samples: one consisting of

couples and one consisting of singles. Households consisting of couples were only used if both the husband and wife had completed the questionnaire.

An analysis was carried out in order to check the pattern of missing data. Separate variance t tests showed that missing values were dependent on household characteristics as well as on some psychological variables. This can be seen when comparing, for example, the mean income of those answering the future orientation questions with mean income of those who did not. A significantly different mean income in one of the groups indicates that missing observations for future orientation depend on income. Such t tests show that the probability of observing the various variables was more probable among respondents with higher incomes, higher education, with a better financial situation, thinking it is important to save for various purposes, and with a higher score on the economic socialisation variable. This means that the values are not missing completely at random (MCAR), which is necessary in order to avoid biased estimates when using listwise or pairwise deletion of data (Little & Rubin, 1987).

When a missing value is not MCAR, listwise or pairwise deletion of cases with missing values for income can produce biased estimates. As such, they are not adequate methods for handling missing values (Arbuckle, 1996). A weaker assumption about the missing observations of income is that they are missing at random (MAR) which means that the missing values depend on other variables than the values of the relevant variables. This means, for example, that for each income level, observations of future orientation are missing at random within that level of income. If this assumption holds, the most efficient way of handling missing data is to replace missing observations by estimates provided by expectation-maximisation (EM) or regression. Unfortunately, there is no test that can reveal whether the data are missing at random or not within the subclasses of variables. It is therefore difficult to assess whether the MAR assumption holds for the missing values in our data. However, Little and Rubin (1987), and Muthen, Kaplan, and Hollis (1987) suggest that the use of EM will reduce bias even when the MAR condition is not strictly satisfied. Therefore, although we cannot test whether missing values of income are MAR, missing values are estimated and imputed by using the EM (expectation maximisation and maximum likelihood) method provided by the software package SPSS 11. Before estimating missing, the data were screened for extreme values, which were set to missing. The estimated means based on EM were close to the means of observed values.

In addition, the dependent variable, household bank saving, was trimmed. The reason for this is that assets data are typically very noisy, and the range of the variable was too large. The upper end of the tale was trimmed by 2.5% and the lower end of the tale was trimmed by 4.2%. The values that were deleted, were either negative or so high that they would influence the results. The difference between the mean of bank saving (24,390 guilders) was so much higher than the median bank saving (13,646 guilders) that the log of bank saving was used in the subsequent analyses. The mean of the log of bank saving was 9.4, while the median was 9.7. Other relevant variables were also screened for outliers and influential observations deleted or variables transformed where appropriate. When analysing singles, households with income above Dfl.300,000 were excluded from the analyses. When analysing

couples, households with bank saving above Dfl.700,000 were excluded as well as household with a net income above Dfl.500,000.

The sample used in the first analysis, the "adult" sample, consisted of 1038 men and women under the age of 50. Their mean age was 39. The cleaned sample of couples, the "couples" sample, consisted of 761 households. The age of the husbands ranged from 22 to 83 (median = 49). The family size ranged from 2–8. The sample of singles consisted of 312 households, 165 of whom were males and 147 females. The number of household members ranged from 1 to 5, age ranged from 21 to 92 years (mean = 52.5).

The sample used for analyses on children, the "family" sample, consisted of households with two parents and children aged 16–21 living in the household. There were 308 children living in such households present in the data files, 164 males and 144 females. When analyzing the data on these children, mothers' and fathers' scores on the different explanatory variables were used as separate variables. We used the data collected in 1997, 1998 and 1999, the waves in which children and their parents were interviewed about their future orientation. We also have data from children older than 21 years of age still living with their parents, but we excluded these children from our sample in order to achieve as high generalisability as possible. The reason for this is that, according to Van Hekken, de Mey, and Schulze (1997), close to half of Dutch children have left home after the age of 21, and the children who choose to live with their parents after this age may have characteristics which may influence our results. For example, van Hekken et al. report that the higher the economic status of the father, the earlier children leave home. If there are 1–2 children they stay longer at home than if there are 3 or more. Moreover, the percentage who stay at home is higher in smaller communities and towns.

Table 1 shows the sample statistics of the variables used in our analyses of the four samples, adults, couples, singles and family, respectively.

3. Results

The results from the different analyses are reported below. First, we report the relationships between the economic socialisation of parents and their scores on various dispositional variables. We also report the results of regression analyses carried out in order to investigate if economic socialisation and dispositions predict household saving. Next, we report results from a comparison of economic socialisation and the dispositions of husbands and wives, respectively. Finally, we report the results from analyses carried out in order to explore the relationship of parents' future orientation with that of their 16–21 year old children.

3.1. Economic socialisation of parents

In this section we report the relationships found between the economic socialisation index, dispositions and socio-economic variables. In this analysis, we only included respondents younger than 50 years, since the period between the time the

Table 1
Sample characteristics

Variable	Range	Sample 1: Adults (<50 years) Mean (Std. Dev.)	Sample 2: Couples Mean (Std. Dev.)		Sample 3: Singles Mean (Std. Dev.)	Sample 4: Families with children in age group 16–21 Mean (Std. Dev.)		
			Husbands	Wives		Husbands	Wives	Children
Saving		11771.1 (21144.9)	27234.3 (30886.2)		20006.2 (30723.2)	26241.4 (39962.1)		2711.2 (4596.4)
Income		35993.0 (25757.2)	74140.7 (27863.7)		40584.4 (21405.1)	82332.9 (42067.4)		1802.6 (3059.8)
Smoking								
Do not (%)		643 (61.9)	529 (69.5)	529 (69.5)	197 (63.1)	131 (68.1)	133 (69.6)	196 (64.0)
Smoke (%)		395 (38.1)	232 (30.5)	232 (30.5)	115 (36.9)	60 (31.9)	58 (30.4)	112 (36.0)
Future orientation	7–70	41.9 (7.9)	42.8 (8.6)	40.2 (8.0)	41.9 (8.7)	42.5 (7.8)	41.1 (7.8)	42.2 (7.8)
Conscientiousness	3–21	14.3 (2.6)	14.1 (2.7)	15.0 (2.4)	14.9 (2.7)	14.3 (2.6)	15.1 (2.4)	13.2 (2.5)
Economic socialisation	0.8–8	4.4 (1.0)	4.2 (1.0)	4.0 (1.1)	4.1 (1.1)	4.3 (1.0)	4.1 (1.0)	
Preference for spending	1–7	4.6 (1.1)	4.7 (1.1)	4.6 (1.1)	4.6 (1.1)	4.6 (1.1)	4.6 (.9)	
Time horizon	1–5	2.2 (1.3)	2.3 (1.2)	2.1 (1.2)	2.2 (1.2)	2.2 (1.2)	2.1 (1.2)	
Control of expenditure	1–7	3.4 (1.5)	3.0 (1.5)	3.3 (1.5)	3.0 (1.6)	3.1 (1.4)	3.7 (1.5)	
Relationships within the family	1–4	1.6 (.6)	1.5 (.6)	1.6 (.6)	1.6 (.6)	1.7 (.7)	1.7 (.6)	
Age		39.1 (6.0)	50 (12.2)	47.3 (12.0)	52.5 (15.3)	47.9 (4.3)	45.3 (4.1)	18.1 (1.5)
High education (*n*)	0–1	269	296	172	116	72	32	2
Middle education (*n*)	0–1	373	218	212	94	47	53	104
Low education (*n*)	0–1	369	238	368	102	47	81	198
Family size	1–8	3.5 (1.4)	3.1 (1.2)		1.3 (1)	4.5 (.9)		
Sex								
Women (*n*)		496		761	147		191	144
Males (*n*)		542	761		165	191		164
N		1038	761 (h'holds)		312	191	191	308

respondent was socialised and the time the data was collected would otherwise be too large. Table 2, using the couple and single samples combined, shows that economic socialisation (being encouraged to have a bank account, having earned or been given money when a teenager, having discussed financial affairs with parents) is associated with future orientation, education level, and a preference for saving rather than spending left-over-money. Economic socialisation is also associated with control over expenditure and bank saving but this finding was not robust across the samples used. The relationships are not very strong, but this was expected due to the fact that the economic socialisation index is based on retrospective reports.

Table 3 shows the relationship between dispositions and the log of the sum of the household bank saving for the couples' sample. It is clear that most of the variables included in the analyses are significantly associated with the bank saving of the household, with problems with controlling expenditure and education level having a reasonably strong association.

Table 4 shows the result of two OLS regression analyses conducted in order to investigate if the economic socialisation index and dispositions can predict economic behaviour in a multi-variate analysis. We have analysed levels of bank saving of couples and singles, respectively. Consistent with previous studies, we find income level to be the most important predictor of levels of bank saving for both types of households. Apart from this, different variables seem to be important for households consisting of couples and singles. For households with couples, a high education level of the husband is important for bank saving. Middle education of husband and the education level of the wives were not found to be significant predictors of bank saving. The lack of significance of the wife's education may reflect the low labour market participation rate among Dutch married women.

Husbands and wives having problems with controlling expenditure have independent negative effects on bank saving. In addition, we find higher bank saving in those households where the husband expresses a preference for saving and where wives have a longer planning horizon. In households with singles, the size of the family is negatively related to saving. Contrary to expectations, education has a negative

Table 2
Correlation coefficients between the economic socialisation index and variables associated with future orientation and delay of gratification behaviour

	Future orientation[a]	Education level[b]	Find it difficult to control expenditure[a]	Prefer to save rather than spend money left over[a]	Bank saving[a]
All respondents[a] ($n = 1038$)	.15*** (.000)	.17*** (.000)	−.10*** (.002)	.10*** (.001)	.07** (.018)
Women[a] ($n = 496$)	.19*** (.000)	.18*** (.000)		.09** (.037)	.11** (.012)
Men[a] ($N = 542$)	.11*** (.008)	.16***	−.13***	.11**	

Note: Only significant coefficients shown. Representative panel 1997, respondents (couples and singles) <50 years old.

* Significant at $p < .10$, **Significant at $p < .05$, ***Significant at $p < .01$.

[a] Pearson correlation coefficients.

[b] Spearman's Rho.

Table 3
Correlation coefficients between the natural log of total household bank savings and variables associated with future orientation and delay of gratification behaviour

	Future orientation[a]	Education level[b]	Find it difficult to control expenditure[a]	Prefer to save rather than spend money left over[a]	Conscient-iousness[a]	Planning horizon[b]	Economic socialisation[a]
Husbands	.13***	.31**	−.28***	.13***	.08**	.13***	.07*
Wives	.07**	.18**	−.27***	.07**	.10**	.18***	
Singles	.11**	.20***	−.24***		.16***		

Note: Only significant coefficients shown. Using "Couples" sample ($n = 752$) and "Singles" sample (312).
* Significant at $p < .10$, **Significant at $p < .05$, ***Significant at $p < .01$.
[a] Pearson correlation coefficients.
[b] Spearman's Rho.

effect on saving in households with singles. If the head of the household has a middle education, the bank saving is lower than if he or she has a low education. The coefficient for the high education dummy is not significant, but the sign is negative, also contrary to expectations. This may be related to student debt, but this needs further exploration. Also for households with singles, reported problems with controlling expenditure has a negative relationship with bank saving. For these households, conscientiousness and economic socialisation have a positive association with bank saving. The reason why economic socialisation effects are not observed for couples may be that they adjust their behaviour in the light of their partner's beliefs and actions, which dilutes the effects of their own upbringing on their saving behaviour.

Combining the results from Tables 2–4, it seems clear that there is a link between economic socialisation, dispositions and saving behaviour. At the univariate level, we see that bank saving is associated with economic socialisation, particularly among women, although the relationship is not strong. However, in the multivariate analyses we see that economic socialisation is not significant in the couple sample. This does not necessarily mean that economic socialisation is unimportant for couples, but it may have an indirect effect on economic behaviour since economic socialisation is correlated with control over expenditure and preference for saving. Learning to control expenditure seems to be particularly important for the households' level of saving. Among singles, we find conscientiousness and economic socialisation to be important predictors of saving, while for couples, the wife's time horizon and the husbands' preferences for spending are important. In both samples, the inclusion of dispositions and the economic socialisation index significantly increased explained variance in bank saving.

3.2. The economic socialisation and future orientation of spouses

Table 5 reveals an interesting pattern of relationships between spouses/partners. For each variable, with the exception of conscientiousness, the behaviour or

Table 4
OLS regression model for predicting the natural log of household bank saving

	Couples			Singles	
	Beta	Sig		Beta	Sig
(Constant)		.011	(Constant)		.000
Number of household members	−.002	.960	Number of household members	**−.188**	.000
Age	−.180	.489	Age	−.025	.942
Age^2	.402	.128	Age^2	.166	.631
Natural log of household net income	**.333**	.000	Natural log of household net inc.	**.417**	.000
Husband has high education = 1	**.194**	.000	Head of househ. high educ. = 1	−.089	.165
Husband has middle education = 1	.009	.815	Head of househ. middle educ.=1	**−.152**	.011
Wife has high education = 1	−.023	.550			
Wife has middle education = 1	−.004	.899			
			Gender (male = 1)	−.010	.849
Husband prefers to save	**.123**	.001	Prefers to save	.044	.414
Wife prefers to save	−.012	.730			
Husband has difficulty controlling expend.	**−.087**	.013	Difficulty control expenditure	**−.127**	.026
Wife has difficulty controlling expend.	**−.176**	.000			
Husband's planning horizon	−.023	.504	Planning horizon	.025	.635
Wife's planning horizon	**.126**	.000			
Husband's future orientation	.005	.895	Future orientation	.050	.365
Wife's future orientation	.026	.456			
Husband's conscientiousness	−.024	.479	Conscientiousness	**.115**	.048
Wife's conscientiousness	.007	.833			
Husband's economic socialisation	.011	.748	Economic socialisation	**.154**	.005
Wife's economic socialisation	.025	.475			
N	698			312	
Adjusted R^2 socio-economic variables	**24.8**	.000		**29.9**	.000
Adjusted R^2 socio-economic + psychological variables	**32.4**	.000		**36.2**	.000

Note: This table reports OLS regressions of the log of bank saving for households including couples and households including singles, respectively, on the set of variables listed in the first and fourth column.

disposition of husbands and wives is significantly correlated. In addition, the reported association between the economic socialisation of husbands and wives,

Table 5
Correlations between husbands' and wives' scores on delay of gratification related variables

Variable	Correlation coefficients between wives' and husbands' scores ($n = 761$)
Economic socialisation[a]	.29***
Preference for saving rather than spending[a]	.28***
Problems with controlling expenditure[a]	.34***
Conscientiousness[a]	.04
Planning horizon[b]	.31***
Future orientation[a]	.33***
Education level[b]	.42***
Smoking behaviour[b]	.38***

* Significant at the $p < .10$ level, **Significant at the $p < .05$ level, ***Significant at the $p < .01$ level.
[a] Pearson correlation coefficients.
[b] Spearman's Rho.

respectively, suggests that these similarities are not only a result of the attitudes and behaviours of partners converging over time, but that their childhood experiences in respect of economic matters were similar. This suggests that similarity with respect to economic behaviour and dispositions may be a trait that matters in the choice of a partner.

3.3. Parents and children

Using data from the "family" sample, Table 6 shows that children who are present oriented are more likely to smoke. Future orientation is also associated with conscientiousness. These results are entirely consistent with those reported by Strathman et al. for their adult sample. Future orientation is also associated with the amount of savings a child has – which is unsurprisingly also related to the child's income.

Table 6
Correlations between the child's dispositions, behaviour and income

	Spending	Smoking	Conscientiousness	Future orientation	Child's bank saving (log)
Smoking	.27***[b] ($n = 169$)				
Conscientiousness		−.15**[b] ($n = 178$)			
Future orientation		−.14*[b] ($n = 163$)	.30***[a] ($n = 160$)		
Child's bank saving (log)			.22**[a] ($n = 123$)	.18*[a] ($n = 113$)	
Child's income (log)					.32***[a] ($n = 96$)

Note: Only significant correlations shown.
* Significant at the $p < .10$ level, **Significant at the $p < .05$ level, ***Significant at the $p < .01$ level.
[a] Pearson correlation coefficients.
[b] Spearman's Rho.

Table 7 substantiates the claim that parents have an impact on their children's approach to economic behaviour. Those families where there are good relationships tend to have children who are future oriented. Father's conscientiousness (but not that of the mother) is associated with conscientiousness in the child, and the parents' future orientation is associated with the future orientation of the child. The amount that a child saves is associated with the amount that parents themselves have saved,

Table 7
Correlations between parent and child dispositions and behaviour and family relationships

	Child's spending[a]	Child's smoking[b]	Child's conscientiousness[a]	Child's future orientation[a]	Child's bank saving (log)	Child's income (log)[a]
Father's preferences for saving						
Mother's preferences for saving	−.15* (169)					
Father's smoking		.21*** (191)				−.18** (139)
Mother's smoking	.18** (169)	.30*** (191)		−.14* (163)		
Father's conscientiousness			.19** (157)	.20** (145)	.18* (115)	
Mother's conscientiousness	.18** (169)			.15* (145)		
Father's future orientation				.28*** (145)		
Mother's future orientation	−.17** (169)			.31*** (145)		
Father's problem with controlling expenditure						
Mother's problem in controlling expenditure	.14* (169)					
Father's planning horizon			.15* (157)	.20** (145)		
Mothers planning horizon						
Father's economic socialisation					.17* (115)	
Mother's economic socialisation					.17* (115)	.22** (125)
Household bank saving				.16* (145)	.26*** (115)	

Table 7 (*continued*)

	Child's spending[a]	Child's smoking[b]	Child's conscientiousness[a]	Child's future orientation[a]	Child's bank saving (log)	Child's income (log)[a]
Household income					.18* (115)	
Father's perception of family relationships[b]	.16** (169)			−.17** (145)		
Mother's perception of family relationships[b]			−.22*** (157)	−.28*** (145)		

Note: Only significant correlations shown.

* Significant at the $p < .10$ level, **Significant at the $p < .05$ level, ***Significant at the $p < .01$ level.

[a] Pearson correlation coefficients.

[b] Spearman's Rho.

father's conscientiousness, household income and the economic socialisation of parents.

The most interesting variable in all of these tables is future orientation. The future orientation of adults is significantly associated with their experience as children. If their parents were more economical than the average, discussed their personal financial decisions with the children and if they received or earned money and had a bank account, adults are subsequently more likely to be future oriented. Future orientation in children is fostered by the parent's own future orientation. It is associated with smoking less and having greater accumulated bank savings. Hence, we can see evidence of an overall economic orientation being passed down through the generations, though the exact mechanisms through which this is achieved remains obscure.

If we examine what predicts future orientation of older children we may get an insight into what is likely to have long-term effects on saving. Table 8 reports the results of an OLS regression (using the stepwise procedure) conducted in order to

Table 8
OLS Regression for child's future orientation

	Beta	Sig
(Constant)		.000
Father's conscientiousness	.169	.022
Father's future orientation	.134	.089
Mother's future orientation	.270	.001
Quality of relationships[a]	−.255	.001
N	155	
Adjusted R^2	.20	

[a] Score combining ratings from both parents, high score equals poor relationships. Excluded variables: planning horizon, preferences for saving, controlling spending, economic socialisation (all four variables with scores from both parents) mother's conscientiousness.

find out which variables that could best predict a child's future orientation. The table shows that a child's future orientation is best predicted by his or her father's conscientiousness, the future orientation of his or her parents and the quality of relationships within the family.

4. Discussion

Though the relationships found in this paper are not strong ones, they do support the argument advanced in the introduction and provide the first evidence of a link between parental approaches to economic matters and that of their children. It is clear that features of economic socialisation (for example, discussing financial matters with one's parents) do have an impact on the future orientation of children, although the size of the effects is very small. It must be borne in mind that the economic socialisation measures involve reporting on childhood experiences that were up to 35 years in the past, and that such retrospective measures will necessarily have a lot of error. So even small effects are worthy of note, although we recognise that it may be appropriate to place more weight on the impact of the other variables investigated.

That the future orientation (and conscientiousness) of parents is correlated with that of their children is evidence that this fundamental approach to economic matters is transmitted from parents to children, though how this takes place is unclear. Of the mechanisms mentioned in the introduction (modelling, discussion and guidance, habit formation, independence), the first two seem likely to be the most relevant. Children of parents who are future oriented will observe a wide variety of behaviours that stem from that orientation, and so will have plenty of opportunities for social learning. Perhaps more significantly, we suspect that the need to take into account the future consequences of actions is something that parents who are future oriented highlight for their children on the many occasions that these issues come up. This may for example, involve the consequences of not brushing one's teeth, of not revising for examinations, of spending pocket money as soon as it is received and putting homework off until the last minute. Proverbs and folk wisdom may also be deployed by parents and teachers to encourage children to think of the future, such as Aesop's fable "the ant and the grasshopper" and the Sesotho proverb "Lepotla-potla le ja poli; lesisitheho le ja khomo" (The "hurry-hurry" person eats goat; the one who takes his or her time eats beef).

Similarity of dispositions and attitudes between children and parents does not, of course, necessarily imply unilateral influence by parents. It is possible (though in our view unlikely in this domain) that there is a reciprocal relationship and that the future orientation of parents and children converge over time (as we know happens with couples, see Daniels & Webley, 1998). A much more plausible alternative explanation is that personality traits (such as conscientiousness) are inherited and that it is the fact that parents and children share these traits that leads to similar approaches to saving and the future. The mechanism for this is clear as there is good evidence that all of the big 5 personality traits are heritable (Plomin, DeFries, McClearn, &

Rutter, 1997) and a few reports have shown a link between personality and saving behaviour (Nyhus & Webley, 2001). Emotional stability and introversion were found to be robust predictors of saving behaviour. It may therefore be the case that only some of a child's approach towards economic behaviour is a result of upbringing and economic socialisation whilst the rest reflects the consequences of inherited personality traits.

The weakness of the associations between a number of the variables is almost certainly the result of poor or inappropriate measurement of some key concepts. Where properly validated scales have been used with both parents and children (e.g., the Consideration of Future Consequences scale), we find strong and robust associations. But in a number of cases we have had to rely upon recollections of experiences from 30 or more years in the past (as in the case of the measures of economic socialisation of the parents) or ratings by parents of the behaviour of their children on simple scales (as in the measure of preference for spending or saving). We know that the former are not that reliable: Webley and Nyhus (2001) report, for example, that only 69% of the panel answer the question about whether they earned money as a teenager in the same way from one year to the next. Ratings by parents are often reliable but it would clearly have been an improvement to have self-ratings by children as well.

It is also important to recognise that the sample used in this study is not representative of children aged 16–21. The children in our sample are, after all, those who have chosen or who have had to stay at home. This does somewhat limit our ability to generalise our findings. But data from the Dutch Bureau of Statistics (CBS, 2001) do suggest that our sample is reasonably representative of those who do stay at home. None of the respondents with two parents and under 21 are taking university degrees, but this would be true of only 6% of this age group, and these would be mostly away from home. The outlying parts of the Netherlands (e.g., Limburg, Friesland) are somewhat over-represented, but again this is to be expected given van Hekken et al.'s finding that the percentage of children who stay at home is higher in smaller communities and towns.

Nonetheless, we are encouraged by the fact that despite these obvious measurement shortcomings and limitations of the samples, there is still clear evidence of a link between the approach of parents' and their children to economic life. The fact that the data was collected for other purposes and that neither parents nor their children had any notion that their data would be combined in this way (which is often not the case in studies of parents and children) also suggests that the evidence we have presented should be taken seriously.

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