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2002

Online at <https://mpra.ub.uni-muenchen.de/38447/>

MPRA Paper No. 38447, posted 30 Apr 2012 02:07 UTC



## **Altruistic bequests with inherited tastes”**

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*International Journal of Business and Economics*

Submitted October 2001, Revised March 2001

*Abstract:* This paper examines the altruistic model of bequest when a child inherits life standard aspirations from his parents. We prove that the impact of the aspiration effect on transfers can be positive or negative, depending on both the strength of inherited tastes and the coefficients of risk aversion for the parent and the child. However, numerical illustrations indicate that the case for a negative effect is rather weak. Using a French data set on transfers within the family, we investigate how transmission habits affect the level of private assistance. We show that parents are more likely to help their children when they have themselves received money from their own parents. Hence, any public program that affects current transfers also influences family transfers in the future.

*Keywords:* Altruism, bequest, inherited tastes, risk aversion

*JEL Classification:* D64, J2

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# We are indebted to two anonymous referees and Jong-Shin Wei for their comments and suggestions on a previous draft. The usual disclaimer applies.

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## 1. Introduction

It is now well known that bequests within the family are potentially important from the viewpoint of public policy, both on equality and efficiency grounds. For example, the effectiveness of fiscal policy is related to the motives for income transfers within the family. While bequests may arise accidentally given an uncertain life span, economists have mainly focused on models with voluntary bequests, which may be either relevant from altruism or from exchange (Masson and Pestieau, 1997). When altruistic bequests are operative, the Ricardian equivalence holds and attempts by the government to redistribute income between generations are fully neutralized (see Barro, 1974). Conversely, with exchange considerations, a public redistribution of income may have sizable effects.

Knowing whether family motives are relevant from altruism or from exchange is an empirical question. To discriminate between the two hypotheses, one has to examine the impact of the recipient's income on the gift value received from parent (Cox, 1987). A negative effect holds under altruism, while a positive relationship is only consistent with exchange. While some studies have shown that more money was given to richer children, recent empirical findings rather argue in favor of altruism (see the discussion in Laferrère and Wolff, 2002). However, the strong neutrality prediction of the altruism hypothesis is never supported by the data (Altonji et alii, 1997). Parents imperfectly adjust their financial help when the intrafamily distribution of income is changed.

Since empirical evidence for transfers casts doubt both on altruism and exchange motives, several authors have recently suggested expanding the analysis of family behavior from two generations to three generations (Arrondel and Masson, 2001, Cox and Stark, 1996). This leads to the definition of indirect reciprocities within the family, upward or downward, forward-looking or backward-looking, such that one generation makes a transfer to another generation and is paid back later by a third generation. For instance, according to the demonstration effect theory of transfer, parents shape the preferences of their children by setting an example (Cox and Stark, 1996, Jellal and Wolff, 2000). Parents care for their own parents in order to be helped in the future by their own children.

In the numerous studies dealing with the intergenerational transmission mechanism (see Behrman et alii, 1995), the role of the parents in the formation of their children's income capacity has mainly concentrated i) on human capital transmission and ii) on wealth transfers. However, with recent developments on preference formation, economists are now convinced that the parental influence on the status of children cannot be limited to educational investments and inheritances.

Another channel of parental transmission relates to the connection between childhood experiences and future behavior, a question dealing with habits, cultural transmission and endogenous preferences (Becker, 1992, 1996, Bisin and Verdier, 2001). Using detailed illustrations, Becker (1996) shows that parents influence the experiences of their children during the formative early years. Thus, adult behaviors are expected to be strongly correlated with childhood experiences. From an empirical viewpoint, drawing on cultural transmission of altruistic values, Jellal and Wolff (2002) note that elders who have care for their own parents in the past are more likely to be helped in return by their own children.

With very few exceptions (de la Croix, 1996, de la Croix and Michel, 1999), the role of these childhood-acquired habits has been widely neglected in economic analyses. For example, if one examines the standard altruistic model of transfer made famous by Becker (1991), the utility of an adult depends only on his own level of consumption and on the well-being of his child, but it is not affected by his own parents' past consumption. While this assumption of independence over time simplifies the study of many economic problems, accounting for the influence of past experiences and social forces on current behaviors is an insightful research.

Accounting for links between the past and the present has profound implications for the analysis of both microeconomic and macroeconomic problems. On the one hand, including the different ways the past influences present preferences may explain why parents attempt to influence the formation of their children's preferences (Becker, 1993). From a public policy perspective, it follows that policy redistribution may have long term effects on family assistance in the future, given the dynamic process of socialization. On the other hand, incorporating past experiences provides helpful explanations of why there exist fluctuations in both output and employment and long-term oscillations (de la Croix, 2001).

Thus, in this paper, we investigate the role of inherited habits on family transfer behavior using a simple approach. In a very stimulating paper, Frank (1989) argues that one has to find an appropriate frame of reference within which to evaluate personal levels of consumption. In order to account for the presence of inherited habits, the solution suggested by de la Croix (1996) and de la Croix and Michel (1999) is to use an extended utility function, in which standard-of-living aspirations are transmitted from one generation to the next. The influence of parents is introduced in a simple way in the model, by assuming that the utility function of an adult also depends on the past level of consumption of his own parents.

The purpose of our paper is to examine the implications and relevance of the assumption of extended preferences on the

choices of intergenerational transfers within the family when motives for private income redistribution are driven by purely altruistic feelings. When analyzing how such aspiration levels affect the pattern of benevolent transfers from parents to children, we prove that inherited aspiration effect does not necessarily increase parental transfers. However, numerical illustrations indicate that the case for a negative effect is rather weak. The relevance of the model is then tested using a French data set on transfers within families. In particular, we investigate how transmission habits affect the level of private assistance. We show that inherited habits play a central role in the decisions of family transfers.

The remainder of the paper is organized as follows. In section 2, we present a model of bequests in which parents are purely altruistic towards their children and each generation inherits life standard aspirations from parents. In section 3, we present the data and the econometric analysis reveals that parents are more likely to help their children when they have themselves received money from their own parents. Concluding comments dealing with public policy are in section 4.

## 2. Altruism with inherited habits

### 2.1. The standard altruism model

Let us consider a model of altruistic transfers defined over two periods, with two generations and one composite good. The first generation consists of one parent, who is only present in the first period. At the end of this period, the parent leaves a bequest to his unique child. Let subscripts  $p$  and  $k$  denote the parent and the child, respectively. Only financial transfers are included in the analysis, and we rule out the possibility that the parent both invests in the child's human capital through education and leaves a bequest.

When the motive for family transfer is altruistic (Becker, 1991), the parent's utility  $U$  is an increasing function of his consumption  $C_p$  and of the child's utility  $V$ . Conversely, the child is selfish and his utility function is an increasing function of his consumption  $C_k$ . Then, the parent attempts to maximize  $U(C_p, V(C_k))$ . Without loss of generality, we restrict our attention to the case of a separable parental utility, so that the parental utility is :

$$U(C_p) + \beta_p V(C_k) \tag{1}$$

where  $\beta_p$  is the caring parameter ( $\beta_p \in ]0; 1[$ ). Furthermore, we assume that  $U$  and  $V$  are continuous, three-time differentiable and strictly concave, i.e.  $U' > 0$ ,  $U'' < 0$ ,  $V' > 0$ ,  $V'' < 0$ .

Each generation receives an exogenous income, respectively  $Y_p$  and  $Y_k$ . We admit that family assistance is directed from the parent to the child. The budget constraints are as follows.

First, the parental income  $Y_p$  is devoted to the consumption  $C_p$  and to the altruistic bequest  $T$ , so that  $C_p=Y_p-T$ . Second, the child's consumption  $C_k$  is the sum of his income  $Y_k$  and the transfer  $T$  received from the parent, invested in the financial market at the interest rate  $r$  and yielding an amount  $(1+r)T$ . Then, the child's budget constraint is  $C_k=Y_k+(1+r)T$ . A last constraint deals with the non-negativity of the bequest, such that  $T \geq 0$ . The two generations pool their resources for an interior transfer  $T > 0$  since  $C_k+(1+r)C_p=Y_k+(1+r)Y_p$ .

The problem for the parent is to choose the transfer  $T \geq 0$  to maximize  $U(Y_p-T)+\beta_p V(Y_k+(1+r)T)$ . The first-order condition is  $U_c=(1+r)\beta_p V_c$  (with  $U_c=\partial U/\partial C_p$  and  $V_c=\partial V/\partial C_k$ ), which means that the parent's marginal utility of consumption is equalized with the child's marginal utility of consumption as it is perceived by the parent. Thus, the gift value is compensatory. It is an increasing function of the parent's income, but it decreases with the child's income. Besides, the difference in transfer-income derivatives is  $\partial T/\partial Y_p-\partial T/\partial Y_k=1$  (Altonji et alii, 1997). A shift of the parent's income towards the child (assuming a fixed family income) leads to a perfect adjustment of the gift value, just equal to the former variation in incomes between generations. Altruism corresponds to a perfect insurance system between parent and child against any positive or negative event leaving total family income unchanged.

## 2.2. Altruism and aspiration levels

To account for the influence on past consumption on present choices, we extend the model in the following way. We introduce the idea that each generation inherits life standard aspirations from the previous generation. This hypothesis that the child becomes habituated to a certain standard-of-living when he is living with his parent is highly realistic. Let  $h \in ]0;1[$  be a parameter that measures the intensity of the effect of the intergenerational spillover. The bequeathed tastes provide a frame of reference against which both the parent's and the child's utility functions are judged. Given these extended preferences, the parent's utility is now :

$$U(C_p-hC_g)+\beta_p V(C_k-hC_p) \quad (2)$$

where  $C_g$  is the consumption of the grandparent. We assume that the strength of the aspiration effect given by  $h$  remains constant across each succeeding generation.

The fact that  $h$  is a fixed parameter over time may be seen as a strong assumption. For instance, one could rather argue that there are in fact two values for the habit effect, one for grandparent-to-parent transmission and one for parent-to-child transmission. But these two parameters are not independent, since  $h$  is the result of a preference shaping

process within the family. In this paper, we follow the approach developed by de la Croix (1996) with a fixed  $h$ . A more general approach is when the parameter  $h_t$  for the generation  $t$  is a function of the aspiration level  $h_{t-1}$  of the previous generation  $t-1$ , such that  $h_t=f(h_{t-1})$ . The conclusions of our model are not affected when the inequality  $f'>0$  holds, which is the essence of the preference formation theory.

The budget constraints of the standard altruism model still hold in this extended framework. Using  $C_p=Y_p-T$  and  $C_k=Y_k+(1+r)T$ , the parental utility becomes :

$$U(Y_p-T-hC_g)+\beta_p V(Y_k+(1+r+h)T-hY_p) \quad (3)$$

While our presentation focuses on family transfers in the form of bequest, another interpretation is to consider the inheritance amount  $T$  as an educational investment. In this setting,  $r$  would be seen as the rate of return on human capital,  $Y_k$  as the child's human capital endowment resulting from native ability and public environmental influences, and  $T$  as the private expenditure made of the child's education.

Let us now characterize the optimal transfer solution when the second-period consumption of the child is certain. The parent has perfect information on his child's level of income, which is more likely when the two generations share the same household or when they live close to each other.

With an interior solution, the parent chooses a positive amount of bequest  $T$  that maximizes (3). It follows that the optimal level of transfer  $T^*$  is given by :

$$-U_c(Y_p-T^*-hC_g)+\beta_p(1+r+h)V_c(Y_k+(1+r+h)T^*-hY_p)=0 \quad (4)$$

So, at the equilibrium, the marginal cost  $U_c$  of transferring resources to the child is equalized with the weighted child's marginal consumption  $\beta_p(1+r+h)V_c$ . We can now explore the consequences of these inherited aspiration levels on the optimal amount of bequest to the child.

### 2.3. The effect of aspiration levels

How does the intergenerational externality  $h$  affect the structure of bequests ? As noted by de la Croix and Michel (1999), the aspiration effect induces a desire of catching-up and the new generation is expected to consume more than the parent did. Intuitively, one would expect that the parameter  $h$  exert a positive effect on the amount transferred. While this result is more likely to hold, we demonstrate that the intensity of bequeathed tastes may sometimes decrease the level of private transfer bestowed to the child.

**Proposition 1.** *The intensity of bequeathed tastes positively affects the bequest value, unless the taste externality is important and the parent has a strong risk aversion.*

*Proof.* By differentiating (4), we get :

$$dT^*/dh = -(U_{cc}C_g + \beta_p V_c + (1+r+h) \beta_p (T^* - Y_p) V_{cc}) / (U_{cc} + \beta_p (1+r+h)^2 V_{cc})$$

Given the assumption of concavity and using  $C_p = Y_p - T$ , we have:

$$\text{sgn } dT^*/dh = \text{sgn } C_g U_{cc} / V_c + \beta_p - \beta_p (1+r+h) C_p V_{cc} / V_c$$

Using the first-order condition  $V_c = U_c / \beta_p (1+r+h)$ , the sign of the derivative  $dT^*/dh$  is now :

$$\text{sgn } dT^*/dh = \text{sgn } 1/(1+r+h) + C_p \sigma_k - C_g \sigma_p$$

where  $\sigma_p = -U_{cc}/U_c$  and  $\sigma_k = -V_{cc}/V_c$  are the coefficients of risk aversion respectively for the parent and the child.

Thus, we need to study the two following cases. When  $C_p \sigma_k \geq C_g \sigma_p$ , the sign of  $dT^*/dh$  is always positive since  $1/(1+r+h) > 0$ . But when  $C_p \sigma_k < C_g \sigma_p$ , the sign of  $dT^*/dh$  depends on the value of  $h$ . Let  $h_0$  be the value of the spillover such that :

$$h_0 = 1 / (C_g \sigma_p - C_p \sigma_k) - (1+r)$$

Thus, the degree of aspiration effect positively affects the amount of bequest to the child when  $h < h_0$  ( $dT^*/dh > 0$ ), while the converse holds for  $h > h_0$ . When the parent is characterized by a low level of consumption and a strong risk aversion, the intensity of the taste externality is expected to decrease the value of the bequest for  $h > h_0$ . *QED*

Let us interpret this proposition. The parent's consumption is like a negative externality, which is internalized through transfers inside the family. Thus, proposition 1 seems to some extent surprising, since standard economic reasoning leads to the expectation that transfers should be strictly increasing in  $h$ . The stronger the externality, the larger the transfer necessary to compensate the affected. There are in fact two types of aspiration effects. From the parent's viewpoint, one has to distinguish between an inherited effect via the grandparental consumption and a transmitted effect via the parental consumption.

The transmitted effect deals with the negative externality interpretation mentioned above. A parent characterized by a high level of consumption is expected to make more transfers to the child in order to compensate this negative externality. When the aspiration effect is high, there is a greater weight attached to the transmission of social status and the parent increases the optimal amount of gift, so that the child can hold a similar standard of living. Conversely, the inherited aspiration effect exerts a negative impact since it lessens the parent's level of satisfaction. For a given income  $Y_p$ , a high value for the externality  $C_g$  leads to a decrease in the parental utility. Thus, the parent is expected to reduce the bequest to the child in order to maintain his social position in comparison with his own parent.

So, there is a trade-off for the parent between inherited and transmitted social status. When the inherited aspiration effect exceeds the transmitted aspiration effect ( $C_g > C_p \sigma_k / \sigma_p$ ), the bequest value is likely to decrease in response to a higher value of the spillover  $h$ .

To provide an illustration, we consider that the parent's utility is given by  $\ln(C_p - hC_g) + \beta_p \ln(C_k - hC_p)$ . Then, we obtain the following amount of transfer (with  $r=0$ ) :

$$T = [(\beta_p(1+h) + h)Y_p - \beta_p h(1+h)C_g - Y_k] / [(1 + \beta_p)(1+h)] \quad (5)$$

The key parameters here are the aspiration level  $h$  and the grandparent's consumption  $C_g$ . To get numerical values, we set  $Y_p=10$ ,  $Y_k=5$  and  $\beta_p=0.8$ . In Figure 1, we present the optimal bequest values in accordance with both  $h$  and  $C_g$ .

Basically, for a low value of  $C_g$ , the optimal financial amount is strictly increasing in the parameter  $h$ . But as one considers higher values for  $C_g$ , we remark progressively the presence of an inverted U-shaped relationship between the spillover  $h$  and the transfer  $T$  for a given grandparental consumption. In Figure 2, we represent the relative magnitude of the two aspiration effects. The inherited aspiration effect dominates the transmitted aspiration effect when both the grandparental consumption and the parameter  $h$  are set to important values, so that  $dT^*/dh < 0$ . But such a situation is unlikely to hold. When  $C_g$  is not greater than the parent's exogenous income  $Y_p$ , we note that the transmitted aspiration effect is usually stronger than the inherited one. Thus, under reasonable conditions, one expects a positive impact of life standard aspirations on family transfers made to children.

#### 2.4. Risk aversion versus prudence : the role of uncertainty

In the real world, the assumption that the child's level of income is known with certainty is questionable, especially after the child leaves the parental home. When the child lives far away from his parent, there is presumably not enough intergenerational contact and visits for the parent to have complete information on the economic situation of his progeny. Therefore, we relax the prevalent assumption of perfect observability and the child's income is now a random variable denoted by  $\tilde{Y}_k = Y_k + \varepsilon$ , where  $\varepsilon$  is an additive random term defined on the state space  $\Omega = [-\Delta; \Delta]$  and characterized by the density function  $f(\varepsilon)$  and the distribution function  $F(\varepsilon)$ . We also make the assumptions that  $E(\varepsilon) = 0$  and  $V(\varepsilon) \geq 0$ .

Given the uncertainty about  $\tilde{Y}_k$ , the utility function for the parent is now :

$$U(Y_p - T - hC_g) + \int_{\Omega} \beta_p V(\tilde{Y}_k + (1+r+h)T - hY_p) dF(\varepsilon) \quad (6)$$

Hence, the necessary condition for an interior maximum is :

$$-U_c(Y_p - T^u - hC_g) + \beta_p(1+r+h) \int_{\Omega} V_c(\tilde{Y}_k + (1+r+h)T^u - hY_p) dF(\varepsilon) = 0 \quad (7)$$

where  $T^u$  indicates the optimal amount transferred to the child under uncertainty. In this framework, we question whether the randomness of the child's income increases or decreases the pattern of family transfer.

**Proposition 2.** *Given the uncertainty about the child's income, a prudent child is expected to receive a higher amount of bequest from his parent.*

*Proof.* To compare  $T^*$  and  $T^u$ , let us define the function  $\Psi(\varepsilon)$  :

$$\Psi(\varepsilon) = -U_c(Y_p - T - hC_g) + \beta_p(1+r+h) V_c(\tilde{Y}_k + (1+r+h)T - hY_p)$$

Hence, the optimal level of bequest under uncertainty is :

$$\int_{\Omega} \Psi(\varepsilon) \big|_{T=T^u} dF(\varepsilon) = 0$$

so that a necessary and sufficient condition to evaluate the effect of uncertainty on the bequest amount is to study the sign of  $\int_{\Omega} \Psi(\varepsilon) \big|_{T=T^*} dF(\varepsilon)$ . Thus, the value  $T^*$  is greater (respectively lower) than  $T^u$  if the integral  $\int_{\Omega} \Psi(\varepsilon) \big|_{T=T^u} dF(\varepsilon)$  is negative (respectively positive). From the definition of  $\Psi(\varepsilon)$ , the amount of bequest to the child in a certain environment satisfies the following condition :

$$\Psi(E(\varepsilon)=0) = -U_c(Y_p - T^* - hC_g) + \beta_p(1+r+h) V_c(\tilde{Y}_k + (1+r+h)T^* - hY_p) = 0$$

Therefore, in virtue of the Jensen equality, we deduce that  $T^* > T^u$  if and only if the condition  $\int_{\Omega} \Psi(\varepsilon) \big|_{T=T^u} dF(\varepsilon) < \Psi(E(\varepsilon))$  holds (the converse holds for  $T^u > T^*$ ). We can note that the comparison between the two values  $T^*$  and  $T^u$  depends on the convexity of the function  $\Psi(\varepsilon)$ . In particular, we have  $T^u < T^*$  when  $\Psi(\varepsilon)$  is a concave function of  $\varepsilon$ , a condition satisfied for  $\Psi'(\varepsilon) = \beta_p(1+r+h) V_{cc} < 0$  and  $\Psi''(\varepsilon) = \beta_p(1+r+h) V_{ccc} < 0$ , i.e.  $V'' < 0$ . Conversely, the inequality  $T^* < T^u$  holds when  $\Psi(\varepsilon)$  is a convex function of  $(\varepsilon)$ , which requires  $\Psi''(\varepsilon) > 0$ , i.e.  $V'' > 0$ . QED

So, the concept of risk aversion remains insufficient to explain changes in bequest behavior induced by the uncertain child's income. The assumption of imperfect information leads to a precautionary motive for transferring resources at death to one's child. The strength of this precautionary motive is measured through the concept of absolute prudence, expressed by the coefficient  $P(w) = -U_{ccc}(w) / U_{cc}(w)$  for any initial wealth  $w$  (Kimball, 1990). A positive value for  $P$ , which corresponds to a prudent behavior for the child, gives rise to a higher level of amount transferred by the parent.

Finally, even in an uncertain environment, the aspiration effect can either positively or negatively affect the optimal transfer made to the child. Thus, we now turn to an empirical analysis of the role of inherited habits on family decisions.

### **3. Empirical evidence**

#### **3.1. The data**

We use a trigenerational study conducted in 1992 in France which focuses on the forms and dynamics of familial relations (Attias-Donfut and Wolff, 2000). The sample comprises families with at least three generations of adults. The design of the survey was to focus first on the intermediate generation and then to move on to the parents and adult children.

A sample of middle-aged adults born between 1939 and 1943 chosen at random from this cohort using the French census was selected. These persons were contacted by telephone in order to know whether they were still having surviving parents and adult children. Then, a random sample of 1958 people was constructed from among respondents meeting the conditions of the survey. During face-to-face interviews, respondent were asked to indicate the address of one parent and of one adult child. Among the parent generation, 1217 interviews were completed; 1493 children were carried out among the children. Thus, the full sample includes 4668 persons belonging to 995 families. For the presentation, individuals are respectively termed as elders, pivots and children.

The same questionnaires were administered to the three generations. For each individual, the survey provides detailed information on the recipient's social and economic status and on forms of family transfers. In particular, questions concerning both financial and time transfers, either from parent-to-child or from child-to-parent, are included in the data set. This survey is thus especially useful for the purpose at hand, since we can study the transmission of transfers' behaviors over succeeding generations.

The key issue of our paper is to know whether transmission effects affect family decisions. Given the complex structure of the survey, we conduct two types of analyses. On the one hand, we examine the determinants of transfers given by a generation to one's children. On the other hand, we focus on help decisions from the recipient's viewpoint. In both cases, we run separate estimations for elders-pivots and pivots-children transfers and restrict our attention to discrete choices of transferring resources. This methodology allows us to study the potential role of aspiration effects through the receipt in the past on both inter vivos gifts and bequests.

In the former situation (donor's viewpoint), we are forced to include in the regression only the characteristics of the donor including the receipt of transfer, since it is often impossible in the survey to know which child among siblings benefits from parental help. However, such an approach may give misleading estimates (Altonji et alii, 1997). Indeed, the optimal transfer value is a function of both the donor and

recipient's levels of resources. Fortunately, the bias does no longer occur in the second case (recipient's viewpoint). A specific person (pivot or child) can always be matched with one's parents, so that we are able to control for covariates of the two generations including their levels of income.

Both in France and in Italy, there exist previous studies that have examined the effects of transfer receipt on help decisions (Arrondel and Laferrère, 2001, Arrondel and Wolff, 1998, Cigno et alii, 1998). A common result of these analyses is that the receipt of a transfer from parents in the past increases the probability to help one's children. Clearly, this argues in favor of inherited habits effects, but the previous studies never control for income and wealth of the two generations concerned by the transfer. So, our econometric analysis allows us to obtain more robust conclusions.

### **3.2. Evidence on retrospective effects**

For the presentation, we first focus on transfer decisions from elders to pivots. We find a positive impact of aspiration effect. Then, we turn to the help decisions from pivots to children and compare the results for both middle-aged and old generations. By including specific cohorts in the empirical analysis, we avoid the problems linked to the changing economic conditions and also to generation effects.

In table 1, we examine the provision of money from elders to the pivots. Since elders do not indicate the different recipients, we include only the donor's characteristics in the regression. The frequency of gift is estimated using a Probit model. The sample contains 1217 observations and there are 486 donors (39.9%). Transfers are more likely for women and for old donors. The probability of gift decreases with the number of children. Variables associated with the economic position strongly affect gifts decisions. Elders are more likely to help their children when they are well educated and have high levels of both income and wealth. The wealth effect is really important and significant at the one percent level.

We now introduce in the regression an additional variable which is equal to one when elders have themselves received a bequest or a gift from their parents in the past. According to the data, the receipt of a transfer significantly increases the probability of gift. This retrospective effect shows the role of inherited habits. Besides, the marginal effect of this variable is of high magnitude. The probability of transfer estimated at the means of the sample is equal to 39.2 percentage points, and the receipt of inheritance from parents increases this probability of 22.4 points. We can also note that the effects of the other variables are affected by inherited transfers. In particular, the impact for the level

of parental wealth is no longer significant, certainly because we do not control for the amount of inheritance received.

So far, we did not separate gift and financial help made by the elders. As shown by Arrondel and Wolff (1998), the receipt of a specific form of transfer may favor the transmission of the same type of transfer. This result also holds according to the data (Table 1). We estimate the joint probabilities that elders make a gift or a financial help to pivots using a bivariate Probit model. We observe that the receipt of bequest or gift in the past significantly increases the frequencies of transferring resources, either in the form of gift or help. However, a F-test indicates that the marginal impacts of inheritances on the two types of assistance are different. The receipt of past transfers implies a rise of 20.6 points of probability for gifts (the mean probability is 18.1%), but of 7.8 points for financial help (the mean probability is 24.3%).

A problem with the previous discussion is that we do not control for the characteristics of the recipients. To obtain robust results without econometric bias, we turn to the study of transfers received by the interviewed pivot from his parents. In so doing, we include the covariates of both the recipient and the donor in the regression, in particular their incomes. Among the 1217 observations, 343 pivots (28.2%) have received money from the elders. The data shows that transfers decisions are strongly affected by the economic position of the recipient. Education and wealth exerts a positive effect on the probability that a pivot receives money from parents, while the frequency is a decreasing function of the pivot's income. This compensatory effect is consistent with the altruistic hypothesis, and also with the exchange model.

Including the levels of income and wealth for the two generations does not affect the previous results. Indeed, the dummy variable which is equal to one when the pivot's parents have received money from their own parents exerts a positive effect on the transfer decision (at the 1 percent level). Again, the marginal impact of transfer's receipt is important, with a rise of 14.4 points of probability on gifts (the mean probability is 26.3 points). This role of inherited habits is not consistent with the standard altruism and exchange motives where past transfers do not affect family decisions. Finally, when one distinguishes gift and help, a bivariate Probit model indicates that the inheritance effect is positive and significant at the one percent level for gift, but the same variable has no significant impact for help.

Our analysis shows that the inheritance effect is observed even with only the donor's characteristics. It is known that not controlling for the child's income may affect the conclusions of empirical studies on family motives (Altonji et alii, 1997), but this is not the case for aspiration effects.

Another source of bias is due to family heterogeneity. For instance, parental altruism is unobservable. Since unobserved parental generosity is different among families, this may bias the econometric results. With observations on transfers from elders to each of their children, we can control for unobserved heterogeneity within the family by using panel data methods. For that purpose, we focus on gifts made by elders to their various children and we construct a new sample where each parent-child pair is counted as one observation. There are now 4519 observations corresponding to 1214 families. The proportion of recipients is about 17.5%.

The corresponding estimates are reported in Table 3. We first estimate a Probit model on the parent-child sample and introduce only the donor's characteristics. According to the data, the inheritance effect is strongly significant, and this is the most important factor when one attempts to explain gifts decisions. However, unobserved heterogeneity due to multiple recipients per family is likely to bias the results, so that we also estimate a random-effects Probit model. Again, the receipt of bequests or gifts from parents exerts a positive and important impact on the decision of transferring resources to pivots. In both cases, accounting for the pivot's characteristics does not affect this conclusion, with a high marginal impact. Thus, aspiration effects are important in the context of intergenerational family behavior.

A question worth is to know whether the role of inherited habits is also relevant for younger generations. Therefore, we estimate similar regression for transfers between pivots and their adult children. We adopt the same presentation as before for the results, by focusing first on transfers given by pivots and then on help receipt for children. For a sample of 1958 pivots, the proportion of donors is about 47.5%. This high value is due to the needy position of the children, who enters their adult life. The data shows that the probability of helping a child is an increasing function of the pivot's education, income, and wealth (Table 4). With altruism, richer parents are more likely to care for their children and thus redistribute resources. To evaluate the role of inherited habits, we add two additional dummies in the regression concerning the receipt of transfer for pivots, one for financial help and one for bequests and gifts.

We make a distinction between these two types of help since some studies have shown that financial help are linked to investment in human capital, while bequests and gifts mainly correspond to a transmission of parental wealth (Arrondel and Wolff, 1998). The family motive is really different for these two forms of transfers. For instance, there are very few gifts at young age. The fact that donations are made later in the life course is less consistent with altruism, since parents should devote more resources to the children when the latter

are liquidity constrained. According to the trigenerational survey, the two dummies play a positive and significant role in the regression (at the one percent level).

Nevertheless, one can observe that the marginal effect is higher for help than for bequests or gifts. The rise of the estimated probability of transfer (about 47.8% at the sample means) is equal to 21.6 points for the receipt of help and to 8.9 points for the receipt of bequest or gift. The hypothesis that these two coefficients are equal is definitely rejected at the 1 percent level. Again, this result favors the idea that aspirations effects also concern the nature of the family transmission. When one estimates a bivariate Probit for help and gift, we observe that a donor who has been helped by his parents in the past is more likely to help his children. But the same covariate exerts a negative and insignificant effect on the gift decision. While a test rejects the equality of help receipt for gift and help transfer, the same hypothesis cannot be rejected for bequests or gifts receipt.

Finally, we focus on the child's viewpoint and include the pivot and child's characteristics. Transfers are more likely to occur when the parents is rich and the child is poor (Table 5). For a sample of 1336 children, the receipt of transfers in the past still increases the frequency of making a transfer. However, the marginal impacts are lower for young generations. The probability of help is increased by 5.5 points when the pivot has received bequests or gifts from parents and by 9.6 points when the receipt concerns financial help. In addition, the two coefficients are not significantly different. We reach similar conclusions when we only estimate the occurrence of financial help for a child or when we make a difference between money and loan received by donors in the past.

So, our empirical analysis points out the role of inherited habits for family transfers. A child is more likely to be helped by his parents when the latter have themselves been financially helped by their own parents. In addition, the inherited effect leads to an increased transmission of the form of transfer itself. A final result is that the role of inherited habits is stronger for older generations. The reason is that for younger generations, the level of transfer from parents is more sensitive to the needs of the children.

#### **4. Conclusion**

In this paper, we have analyzed predictions of an altruistic model of bequest resulting from the introduction of extended preferences. New theoretical results are derived with respect to the previous literature, suggesting that one has to pay close attention to attitudes towards risk within families when looking at the determinants of inheritances and

intergenerational transfers. The strength of inherited habits is expected to exert of positive effect on transfer decisions and there may exist a precautionary motive for transferring resources to children under uncertainty. So, variables dealing with risk attitudes and transfer receipt in the past have to be included in empirical tests to better explain the transfer decisions within the family.

From an empirical perspective, we believe that the higher levels of intergenerational assistance observed during the two last decades in developed countries may be due to the growing role of inherited habits over the succeeding generations. Another plausible factor is the response that parents give to the risk that prudent children are faced with an environment of increased uncertainty, in particular because of the rising risk of unemployment and unstable family structures.

A final comment deals with the policy issues raised by this altruistic model with inherited tastes. Any program that currently affects the level of public subsidies will have a long-term impact on the provision of family transfers given the role of inherited habits. When receiving money, parents will redistribute more resources because they are richer. In addition, by making private transfers, parents shape the preferences of their children, who are in turn expected to make more gifts to their own children. At the same time, a public policy is likely to decrease the level of environmental risk. This impact can significantly contribute to a decline in the family redistribution to the young generations, by lessening the precautionary motive for transferring income.

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Figure 1. Optimal bequest values

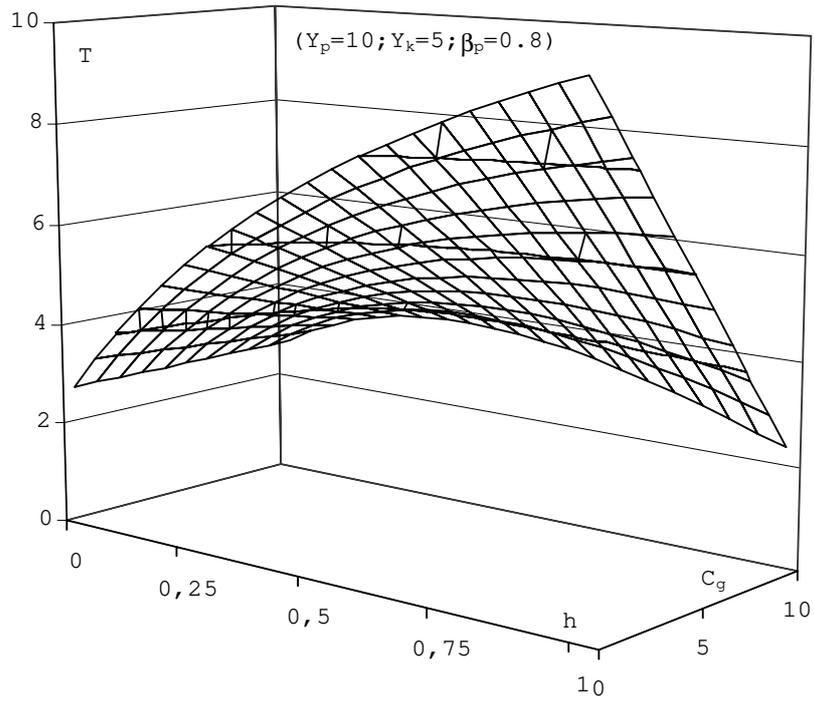


Figure 2. Inherited versus transmitted aspiration levels

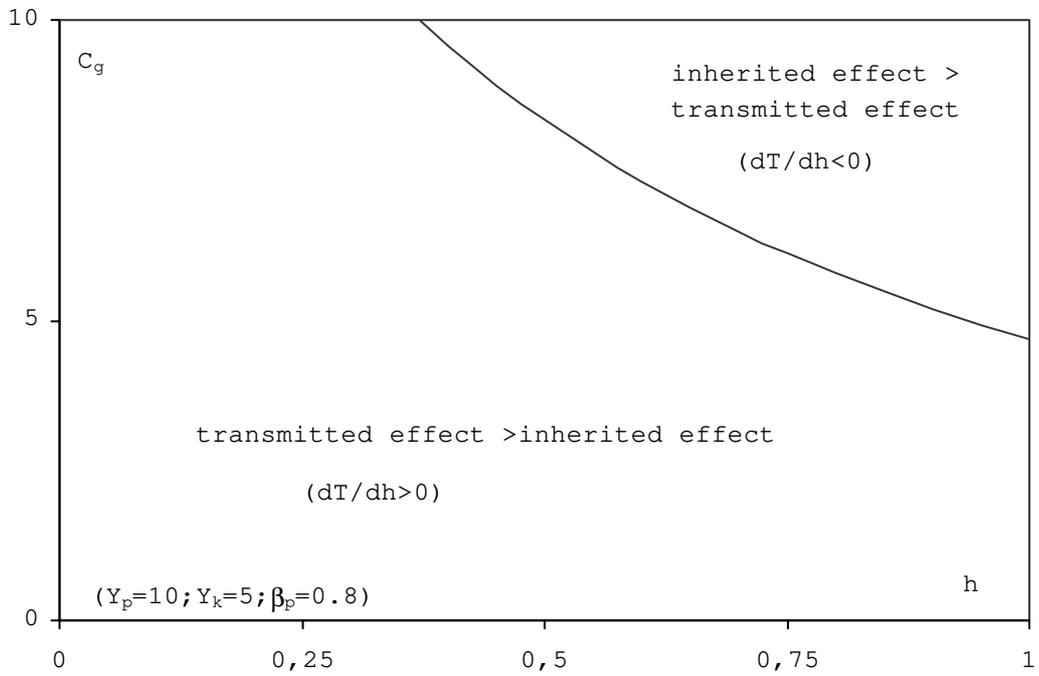


Table 1. Transfers given by the elders to the pivots.

Variables	(1)		(2)		(3)			
	Gift/Help		Gift/Help		Gift		Help	
	coef	t-test	coef	t-test	coef	t-test	coef	t-test
Constant	-1.836	-3.09	-1.821	-3.01	-4.086	-5.77	0.284	0.44
<i>Elder's characteristics</i>								
Female	-0.319	-3.36	-0.326	-3.38	-0.115	-1.02	-0.309	-3.09
Widow	0.140	1.58	0.173	1.93	0.120	1.15	0.106	1.12
Age	0.017	2.45	0.015	2.09	0.038	4.55	-0.017	-2.16
Number of children	-0.022	-1.45	-0.024	-1.53	-0.040	-2.12	-0.002	-0.12
Education	0.019	1.63	0.007	0.58	0.008	0.54	0.001	0.07
Income (10e-4)	0.161	1.48	0.247	2.19	-0.131	-0.96	0.390	2.96
Wealth (10e-6)	0.262	3.13	0.126	1.48	-0.059	-0.60	0.285	3.01
Bequests/gifts from parents			0.593	7.57	0.790	8.72	0.250	2.98
Transfer receipt: gift=help								
Chi2 (d.f., prob)					20.13 (1,0.00)			
Number of recipients	486		486		251		311	
Number of observations	1217		1217		1217			
Log likelihood	-785.3		-756.2		-1200.5			
Chi2	59.9		116.2		196.4			
(d.f., prob)	(7,0.00)		(8,0.00)		(16,0.00)			

Source: Survey Cnav Trois Générations 1992.

Note: (1) and (2) are estimated using Probit models with robust standard errors, (3) is estimated using a Bivariate Probit model with robust standard errors ( $\rho=0.096, t=1.61$ ).

Table 2. Transfers received by pivots from elders.

Variables	(1)		(2)		(3)			
	Gift/Help		Gift/Help		Gift		Help	
	coef	t-test	coef	t-test	coef	t-test	coef	t-test
Constant	-3.041	-4.59	-3.097	-4.59	-4.121	-5.58	-2.029	-2.40
<i>Elder's characteristics</i>								
Female	-0.102	-0.99	-0.088	-0.85	-0.110	-0.98	-0.003	-0.02
Widow	0.052	0.55	0.063	0.65	0.021	0.20	0.092	0.77
Age	0.026	3.36	0.024	3.12	0.037	4.40	-0.003	-0.35
Number of children	-0.066	-3.95	-0.067	-4.02	-0.048	-2.66	-0.066	-2.92
Education	0.023	1.82	0.016	1.24	0.025	1.77	-0.003	-0.19
Income (10e-4)	-0.046	-0.40	0.001	0.01	-0.196	-1.38	0.254	2.02
Wealth (10e-6)	0.074	0.89	-0.024	-0.28	-0.003	-0.04	0.089	0.89
Bequests/gifts from parents			0.444	5.34	0.632	6.75	-0.015	-0.14
<i>Pivot's characteristics</i>								
Female	-0.088	-1.10	-0.105	-1.30	-0.090	-1.01	-0.026	-0.26
Widow	0.116	0.88	0.121	0.91	-0.081	-0.56	0.186	1.16
Number of children	-0.030	-0.84	-0.021	-0.56	-0.055	-1.49	0.022	0.51
Education	0.035	2.43	0.035	2.34	0.012	0.70	0.067	3.93
Income (10e-4)	-0.164	-3.26	-0.139	-2.76	-0.166	-2.93	-0.062	-1.04
Wealth (10e-6)	0.252	4.28	0.230	4.00	0.329	5.23	-0.027	-0.38
Transfer receipt: gift=help								
Chi2 (d.f., prob)					22.57 (1,0.00)			
Number of recipients	343		343		241		136	
Number of observations	1217		1217		1217			
Log likelihood	-680.0		-665.8		-932.5			
Chi2	83.5		108.0		191.1			
(d.f., prob)	(13,0.00)		(14,0.00)		(28,0.00)			

Source: Survey Cnav Trois Générations 1992.

Note: (1) and (2) are estimated using Probit models with robust standard errors, (3) is estimated using a Bivariate Probit model with robust standard errors ( $\rho=0.079, t=1.11$ ).

Table 3. Distribution of transfers from elders to pivots.

Variables	(1)		(2)		(3)		(4)	
	Gift		Gift		Gift		Gift	
	coef	t-test	coef	t-test	coef	t-test	coef	t-test
Constant	-4.112	-10.71	-21.911	-8.54	-4.388	-11.02	-22.487	-7.96
<i>Elder's characteristics</i>								
Female	-0.197	-3.06	-0.575	-1.25	-0.195	-3.00	-1.487	-3.61
Age	0.037	8.14	0.155	6.24	0.039	7.47	0.235	7.15
Widow	0.159	2.71	0.840	2.65	0.162	2.77	0.364	1.27
Number of children	-0.067	-6.74	-0.388	-6.29	-0.068	-6.78	-0.441	-7.31
Education	0.016	0.47	1.115	4.53	0.016	0.47	-1.820	-7.14
Farmer	0.651	7.97	1.436	2.19	0.638	7.70	1.467	2.56
Independent	0.091	0.86	1.206	1.77	0.090	0.85	1.786	3.28
Executive/intermediary	-0.353	-2.96	-5.294	-4.62	-0.364	-3.04	-0.536	-0.72
Employee/worker	-0.217	-2.71	-3.775	-4.62	-0.229	-2.84	-3.034	-5.26
Income (10e-4)	0.241	3.36	-0.465	-1.24	0.242	3.37	0.569	1.42
Wealth (10e-6)	-0.086	-1.42	0.307	0.91	-0.082	-1.35	0.738	2.46
Bequests/gifts from parents	0.656	12.61	4.155	9.81	0.659	12.62	5.330	10.04
<i>Pivot's characteristics</i>								
Female					0.060	1.24	-0.250	-1.34
Married					0.263	3.41	0.184	0.64
Age					-0.003	-0.64	0.009	0.56
Number of children					0.072	0.75	-0.155	-0.39
Education					-0.007	-0.25	0.027	0.21
Number of recipients	792		792		792		792	
Number of observations	4519		4519		4519		4519	
Number of families	1214		1214		1214		1214	
Log likelihood	-1768.2		-687.7		-1761.1		-691.0	
Chi2	621.7		187.63		624.0		202.7	
(d.f., prob)	(12,0.00)		(12,0.00)		(17,0.00)		(17,0.00)	

Source: Survey Cnav Trois Générations 1992.

Note: (1) and (3) are estimated using Probit models with robust standard errors, (2) and (4) are estimated using random-effects Probit models.

Table 4. Transfers given by the pivots to the children.

Variables	(1)		(2)		(3)			
	Gift/Help		Gift/Help		Help		Gift	
	coef	t-test	coef	t-test	coef	t-test	coef	t-test
Constant	-0.761	-3.91	-0.705	-3.56	-0.777	-3.94	-1.780	-4.52
<i>Pivot's characteristics</i>								
Female	0.020	0.35	0.018	0.30	-0.009	-0.15	0.030	0.27
Married	-0.112	-1.38	-0.137	-1.67	-0.139	-1.70	0.118	0.69
Number of children	0.009	0.40	0.006	0.28	0.012	0.55	-0.054	-0.98
Education	0.020	1.97	0.008	0.77	0.012	1.19	-0.014	-0.71
Income (10e-4)	0.202	4.91	0.222	5.30	0.218	5.12	-0.067	-0.91
Wealth (10e-6)	0.136	2.99	0.104	2.23	0.075	1.63	0.191	3.11
Help from parents			0.555	5.82	0.595	6.25	-0.024	-0.14
Bequests/gifts from parents			0.223	3.73	0.196	3.26	0.223	1.98
Receipt: help=bequest/gift								
Chi2 (d.f., prob)			8.50 (1,0.00)		12.31 (1,0.00)		1.24 (1,0.27)	
Help receipt: gift=help								
Chi2 (d.f., prob)					10.68 (1,0.00)			
Bequest/gift receipt:gift=help								
Chi2 (d.f., prob)					0.05 (1,0.82)			
Number of recipients	931		931		902		65	
Number of observations	1958		1958		1958			
Log likelihood	-1303.9		-1278.7		-1552.8			
Chi2	90.1		136.2		157.3			
(d.f., prob)	(6,0.00)		(8,0.00)		(16,0.00)			

Source: Survey Cnav Trois Générations 1992.

Note: (1) and (2) are estimated using Probit models with robust standard errors, (3) is estimated using a Bivariate Probit model with robust standard errors ( $\rho=0.097, t=1.39$ ).

Table 5. Transfers received by children from pivots.

Variables	(1) Gift/Help		(2) Gift/Help		(3) Help		(4) Help	
	coef	t-test	coef	t-test	coef	t-test	coef	t-test
Constant	-0.294	-0.57	-0.223	-0.43	-0.527	-1.00	-0.556	-1.06
<i>Pivot's characteristics</i>								
Female	-0.026	-0.35	-0.032	-0.43	-0.055	-0.73	-0.059	-0.78
Married	-0.282	-2.71	-0.301	-2.88	-0.187	-1.77	-0.184	-1.74
Number of children	-0.141	-4.36	-0.145	-4.48	-0.130	-3.90	-0.126	-3.79
Education	0.021	1.42	0.015	0.96	0.011	0.72	0.012	0.80
Income (10e-4)	0.088	1.83	0.099	2.05	0.138	2.80	0.139	2.83
Wealth (10e-6)	0.208	3.57	0.185	3.11	0.165	2.75	0.161	2.66
Bequests/gifts from parents			0.144	1.94	0.075	1.00	0.076	1.00
Help (money/loan) from parents			0.247	2.17	0.272	2.35		
Money from parents							0.452	1.80
Loan from parents							-0.220	-0.84
<i>Child's characteristics</i>								
Female	0.143	1.94	0.153	2.07	0.159	2.11	0.156	2.07
Age	-0.014	-0.90	-0.014	-0.93	-0.015	-0.96	-0.015	-0.95
Married	-0.251	-2.80	-0.243	-2.70	-0.240	-2.63	-0.238	-2.61
Number of children	0.080	1.58	0.083	1.62	0.094	1.80	0.091	1.75
Education	0.032	1.97	0.030	1.87	0.038	2.32	0.038	2.33
Income (10e-4)	-0.256	-3.67	-0.248	-3.51	-0.239	-3.37	-0.241	-3.37
Wealth (10e-6)	-0.152	-1.14	-0.165	-1.25	-0.348	-2.50	-0.337	-2.39
Receipt: help=bequest/gift								
Chi2 (d.f., prob)			0.58 (1,0.45)		2.07 (1,0.15)			
Receipt: money=loan								
Chi2 (d.f., prob)							1.83 (1,0.18)	
Number of recipients	511		511		463		463	
Number of observations	1336		1336		1336		1336	
Log likelihood	-821.0		-817.0		-787.9		-787.7	
Chi2	123.3		130.4		132.2		133.4	
(d.f., prob)	(13,0.00)		(15,0.00)		(15,0.00)		(16,0.00)	

Source: Survey Cnav Trois Générations 1992.

Note: (1), (2), (3) and (4) are estimated using Probit models with robust standard errors.