

A Puzzle for Adaptive Theory

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[P]eople modify their behavior not only in response to changing external (market) conditions, but also in response to what they have done and to what has happened to them in the past.

Richard H. Day (1986, p. 155)

Among the many contributions that Dick Day has made to understanding the way that real economic systems work is his insight that decision-making cannot be understood without recognizing that preferences depend on past experience. Once allowance is made for this, the result is to overturn many conclusions that mainstream economic theory is able to reach only by setting aside this seemingly self-evident proposition (Benhabib and Day 1981; Day 1982, 1983).

This brief note is an empirical study of the effect of past experience in shaping preferences. I first present evidence that in the pecuniary domain, aspirations for goods seemingly change to the same extent as the acquisition of goods. I then turn to nonpecuniary desires, specifically those regarding marriage and family formation, and present evidence that in this domain, aspirations appear to be considerably less affected by experience. This differential in adaptation between the pecuniary and nonpecuniary domains poses the puzzle that is the basis for the title of this paper.

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Problem, data, and methods

In the economics literature, the central proposition to which this paper is addressed was stated as long ago as 1958, not surprisingly, by James March and Herbert Simon:

[O]ver time, the aspiration level tends to adjust to the level of achievement. That is to say, the level of satisfactory performance is likely to be very close to the actually achieved level of recent performance. (pp. 182-183)

March and Simon are, of course, talking about individuals operating within business organizations, but, as they note, the principle they state derives from psychology, where such adaptation is viewed as characteristic generally of humans. One may reasonably assume, therefore, that it should apply to the circumstances of households. Indeed, the principle has been formalized in contemporary psychological theory in the form of the setpoint model that sees individuals exposed to a variety of life-changing events such as marriage, loss of a job, or serious injury as adapting fully in the course of time to their new circumstances (Costa et al, 1987, Cummins et al., 2003, Lykken and Tellegen, 1996, Myers 1992).¹ Put simply, the proposition implies that as one's pecuniary and nonpecuniary circumstances change over the life span, for better or for worse, one's goals or aspirations will be adjusted in the same direction and to the same extent as the change in actual circumstances.

The biggest difficulty with testing this proposition empirically is that data on people's aspirations are rarely available. In what follows, I draw on largely unused Roper surveys that include questions that tap people's aspirations as well as the attainment of their aspirations in two domains – “big-ticket” consumer goods and family

¹ A good critical overview of the setpoint model is given in Lucas et al. 2002.

formation.² In these surveys the questioning procedure is as follows (see Appendix for the full survey question):

1. We often hear people talk about what they want out of life. Here are a number of different things. [The respondent is handed a card with a list of 24 items.] When you think of the good life – the life you'd like to have, which of the things on this list, if any, are part of that good life as far as you personally are concerned?
2. Now would you go down that list and call off all the things you now have?

The answers to question 1 tell us about desires for certain goods and also for marriage and a family; those to question 2 tell us where the respondents stand in relation to these desires, to what extent they are fulfilled.

I take the 1978 responses to these questions for persons ages 18-29 and compare them with the 1994 responses of persons ages 30-44, to approximate roughly the experience of a cohort as it passes through the early years of the adult life cycle. I repeat this for persons 30-44 in 1978 and 45-59 in 1994 to approximate the midlife segment of the life course, and, finally, for persons 45-59 in 1978 and 60 years and over in 1994 for the late life cycle segment. By following each of these three cohorts' aspirations and attainments over the sixteen years between 1978 and 1994, we can find out to what extent aspirations change as a cohort's actual circumstances change. Although we do not have observations on the same individual at both dates, we do have a representative sample of essentially the same group of individuals, so we can generalize about people's life course experience, on average. Needless to say, the circumstances of any single individual may deviate significantly from the average.

² See Roper-Starch Organization 1979, 1995. These surveys are used in Schorr (1998, p. 16).

Results

Let me start with the responses for ten big-ticket consumer goods that are included in the 24-item “good life” list. These goods range from a home, car, and television set to travel abroad, a swimming pool, and a vacation home. Over each stage of the life cycle (early, midlife, and older years) persons typically acquire more of these big-ticket items (Table 1, line 1 of panels A-C), but their aspirations for these goods, what they view as part of the good life, also rises (line 2 of panels A-C). Moreover, the increase in the number of goods desired is, on average, roughly equal in magnitude to that in the average number owned (panel D, column 3).

What is happening is that as people acquire those goods for which aspirations were fairly high to start with (a home, a car, a TV), their aspirations increase for goods that were initially much less likely to be viewed as part of the good life. Thus, in each segment of the life cycle, travel abroad, a swimming pool, and a vacation home are increasingly named as part of the good life, reaching values approaching 40 percent or more of respondents (Table 2, cols. 1 and 2). The proportion that ever actually has any of these items, however, is typically less than 10 percent (col. 3). There is clearly a suggestion in these data that new material aspirations arise as previous goals are reached. Moreover, to judge from the mean number of goods desired, aspirations change to about the same extent as actual circumstances; that is, adaptation is, on average, complete.

This inference of complete adaptation in the economic domain is further supported if we divide the cohort by level of education and consider the first two segments of the life cycle, those in which income is increasing. In each segment the increase in the number of goods owned is greater for those with more education, as one

would expect based on their greater income growth (Table 3, panel A). The increase in number of goods desired is also greater for those with more education (panel B).

Moreover, for each educational group, the increase in desires is of the same order of magnitude as the increase in the number of goods owned (col. 3, compare line A-1 with B-1, and line A-2 with B-2). Thus, on average, material aspirations are increasing commensurately with material possessions, and the greater the increase in possessions, the greater the increase in desires.

The responses cited so far are for specific goods. Is there evidence suggesting that income aspirations in general rise in proportion to income? The answer is yes. Consider the answers from a different survey that asks people how much income is needed by a family of four to get along. Over a 36-year period “get along” income increases, on average, to the same degree as actual income. This result was obtained by sociologist Lee Rainwater (1994) who concluded that the elasticity of “get along” to actual income is one. The pioneering empirical work on the change in income norms in relation to actual income is that of the Leyden School, founded by Bernard van Praag (1968). Cross-sectional estimates of the relationship of norms to actual income, termed “preference drift” by van Praag, typically yield values of 0.6 (van Praag and Frijters, 1999). However, a study by members of this school using longitudinal data and a model taking account of both adaptation and social comparison finds, consistently with Rainwater, a preference drift of 1.0 (van de Stadt et al. 1985, Kapteyn 2002).

The tendency for income aspirations to expand commensurately with actual income is also suggested by one of the “good life” questions: whether the respondent has “a lot of money.” The striking feature of the responses is that hardly anyone ever thinks

he or she has a lot (Table 4), although real per capita income increases by around 25 percent in both the early and midlife stages of the adult life cycle.

Let me turn from the economic to the family domain. The desire for a happy marriage is a common one; at every point in the life cycle, three-quarters or more of respondents say that a happy marriage is part of the good life (Table 5, line 1 of panels A-C). The proportion that actually has a happy marriage increases in the early life cycle and declines thereafter as divorce, separation, and widowhood take their toll (line 2 of panels A-C). There is a shortfall of actual circumstances relative to aspirations for a happy marriage among a fifth or more of the population throughout the life cycle.

If aspirations adjusted fully to actual circumstances, then one would expect that those who are not in a happy marriage would, in time, abandon their aspirations for such a marriage, but desires for a happy marriage exist among more than half of those who do not, in fact, have one (Table 6, column 1). Especially noteworthy is the fact that among persons who have been *single* their entire lives and are ages 45 and over, more than four in ten cite a happy marriage as part of the good life as far as they specifically are concerned (column 3). If these respondents had typically adjusted their marital aspirations to accord with their actual status, one would hardly expect such a sizeable proportion still to consider a happy marriage to be desirable for them personally. Similarly, among women for whom the prospect of *remarriage* is quite low (those widowed, divorced, and separated and 45 years and older) almost six in ten say that they view a happy marriage as part of the good life (column 3). In marked contrast to the economic domain, adaptation seems to occur only to a limited extent with regard to marriage aspirations.

What about aspirations for children? Economists like to draw an analogy between the demand for children and the demand for consumer durables. We have seen that as more big-ticket consumer goods are acquired, desires for such goods tend to grow to about the same extent. Is this true of children; as people have more children, do their family size desires increase commensurately? The answer is no. In the two stages of the life cycle in which family formation occurs, the number of children desired is virtually constant, whether measured by the percentage of adults who want children or the average number of children wanted (Table 7, line 1 in panels A and B). Although actual family size changes, especially in the early life cycle (line 2), family size aspirations change hardly at all.

Is it possible that aspirations for the “quality,” if not quantity, of children increase over the life cycle? Perhaps, but there is not much sign of increasing aspirations for a highly expensive dimension of child quality, a college education for one’s children. The proportion who consider such an education to be part of the good life rises mildly in the early life cycle, from 56 to 65 percent; thereafter, it changes hardly at all (Table 8, cols. 1 and 2). While income growth over the life cycle is accompanied by persistent growth in aspirations for big ticket consumer goods, income growth is seemingly not associated with growth in desires for either the number or quality of children.

Concluding observations

The evidence I have presented suggests that pecuniary or living level aspirations tend to change, on average, to about the same extent as actual circumstances. In contrast, aspirations with regard to marriage and number and quality of children appear to be more

stable and vary less as actual circumstances change. Clearly there is need for more comprehensive study of how much people's aspirations change in different domains in response to what has happened to them in the past. I think, for example, that there is evidence of less than complete adaptation to changing circumstances in regard to formation of friendships, loss of a job, and retirement (Argyle 1999, Clark and Oswald, 1994, Easterlin 2003, Gallie and Russell, 1998, Myers 1992, Oswald 1997, Winkelman and Winkelman, 1998).

If differential adaptation occurs across various life domains, then we are left with the problem of explaining these differences in the extent of adaptation. Perhaps, as Frederick and Loewenstein (1999, p. 314) suggest in regard to other types of experience, it is due to our evolutionary heritage. One might speculate, for example, that the persistence of aspirations for a happy marriage among those who are in broken unions may reflect the importance to group survival of mating and reproduction. Correspondingly, the disproportionate importance of adaptation in the economic domain may be because those whose material aspirations were never satisfied were more likely to survive, and, as a result, we have inherited their genes (Buss 1996, Kasser 2002). Whether such speculation is correct remains to be seen.

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Appendix
Good Life Questions from Roper Surveys 79-1, 95-1

77. We often hear people talk about what they want out of life. Here are a number of different things. (HAND RESPONDENT CARD) When you think of the good life – the life you'd like to have, which of the things on this list, if any, are part of that good life as far as you personally are concerned?
78. Now would you go down that list and call off all the things you now have? Just call off the letter of the items. (RECORD BELOW)

	77. PART OF THE GOOD LIFE	78. NOW HAVE
a. A home you own.....		
b. A yard and lawn.....		
c. A car.....		
d. A second car.....		
e. A vacation home.....		
f. A swimming pool.....		
g. A happy marriage.....		
h. No children.....		
i. One child.....		
j. Two children.....		
k. Three children.....		
l. Four or more children.....		
m. A job that pays much more than average.....		
n. A job that is interesting.....		
o. A job that contributes to the welfare of society....		
p. A college education for myself.....		
q. A college education for my children.....		
r. Travel abroad.....		
s. A color TV set.....		
t. A second color TV set.....		
u. A five day work week.....		
v. A four day work week.....		
w. Really nice clothes.....		
x. A lot of money.....		

Table 1
Ownership of and Desires for Ten Big-Ticket Consumer Goods
Over Three 16-Year Segments of the Adult Life Cycle^a

	(1)	(2)	(3)
	Stage of life cycle segment		Change over life cycle segment
	Start	End	
<u>A. Early life cycle</u>			
1. Mean number of goods owned	1.7	3.1	+1.4
2. Mean number of goods desired	4.4	5.6	+1.2
<u>B. Mid life cycle</u>			
1. Mean number of goods owned	2.5	3.2	+0.7
2. Mean number of goods desired	4.3	5.4	+1.1
<u>C. Late life cycle</u>			
1. Mean number of goods owned	3.0	3.2	+0.2
2. Mean number of goods desired	4.4	5.0	+0.6
<u>D. Average for all three segments</u>			
1. Change in mean number of goods owned	--	--	+0.8
2. Change in mean number of goods desired	--	--	+1.0

a. Early life cycle is from ages 18-29 in 1978 to 30-44 in 1994. Mid life cycle is from ages 30-44 in 1978 to 45-59 in 1994. Late life cycle is from ages 45-59 in 1978 to 60 and over in 1994.

Source: For Tables 1-8: Roper-Starch Organization, 1979, 1995.

Table 2
 Desires for Specified Big-Ticket Consumer Goods
 And Attainment of Desires over Three 16-Year Segments
 Of Adult Life Cycle^a

	(1)	(2)	(3)
	Desires over life cycle: percent who want <u>good at</u>		Attainment: percent who have <u>good at end</u>
	Start	End	
<u>A. Early life cycle</u>			
1. Travel abroad	39	46	7
2. Swimming pool	28	41	5
3. Vacation home	26	47	3
<u>B. Mid life cycle</u>			
1. Travel abroad	33	45	12
2. Swimming pool	22	38	6
3. Vacation home	28	45	6
<u>C. Late life cycle</u>			
1. Travel abroad	33	37	8
2. Swimming pool	14	23	2
3. Vacation home	26	33	3

a. For life cycle stages see Table 1.

Table 3
Change in Ownership of and Desires for Ten Big-Ticket Consumer Goods in Specified
Life Cycle Stage, by Level of Education^a

	(1) Early <u>life cycle</u>	(2) Mid <u>life cycle</u>	(3) Mean of <u>cols. 1 and 2</u>
A. <u>Change in mean number of goods owned</u>			
1. Education greater than 12 years	1.6	1.0	1.3
2. Education 12 years or less	1.1	0.4	0.8
B. <u>Change in mean number of goods desired</u>			
1. Education greater than 12 years	1.4	1.3	1.4
2. Education 12 years or less	1.0	0.9	1.0

a. For life cycle stages see Table 1.

Table 4
 Percent of Cohort that Has “a Lot of Money” at Beginning and End of
 Three 16-Year Segments of the Adult Life Cycle^a

	(1)	(2)
	Stage of	
	<u>life cycle segment</u>	
	Start	End
1. Early life cycle	2	4
2. Mid life cycle	1	7
3. Late life cycle	4	3

a. For life cycle stages see Table 1.

Table 5
 Desires for a Happy Marriage and Attainment of Desires
 Over Three 16-Year Segments of the Adult Life Cycle^a

	(1)	(2)
	Stage of life cycle segment	
	Start	End
<u>A. Early life cycle</u>		
1. Percent wanting a happy marriage	83	79
2. Percent who have a happy marriage	44	51
<u>B. Mid life cycle</u>		
1. Percent wanting a happy marriage	84	76
2. Percent who have a happy marriage	62	51
<u>C. Late life cycle</u>		
1. Percent wanting a happy marriage	85	75
2. Percent who have a happy marriage	66	46

a. For life cycle stages see Table 1.

Table 6
 Percent of Persons Wanting a Happy Marriage Among Those Who Do Not Have One,
 By Marital Status and Age, 1994

Marital status	(1)	(2)	(3)
	<u>Percent wanting happy marriage</u>		
	All ages	Ages 18-44	Ages 45 and over
Married, not in happy marriage	56	58	55
Divorced or separated	63	73	55
Widowed	62	^a	62
Never-married	65	68	43

a. Sample size less than 20.

Table 7
Desires for Children and Attainment of Desires Over
Two 16-Year Segments of the Adult Life Cycle^a

	(1)	(2)	(3)
	Stage of life cycle segment		Change over life cycle segment
	Start	End	
<u>A. Early life cycle</u>			
1. Desires: (a) Percent who want one or more children	71	69	--
(b) Mean number wanted	2.3	2.4	0.1
2. Attainment: Mean number have	1.0	2.0	1.0
<u>B. Mid life cycle</u>			
1. Desires: (a) Percent who want one or more children	72	66	--
(b) Mean number wanted	2.6	2.7	0.1
2. Attainment: Mean number have	2.0	2.2	0.2

a. For life cycle stages, see Table 1. Mean number of children “wanted” and “have” is for persons who want children.

Table 8
 Desires for “a College Education for My Children”
 And Attainment of Desires over Three 16-Year Segments
 Of the Adult Life Cycle^a

	(1) Desires over life cycle: percent who <u>want good at</u> Start	(2) End	(3) Attainment: percent who have <u>good at end</u>
<u>A. Early life cycle</u>			
Percent wanting children’s college education	56	65	7
<u>B. Mid life cycle</u>			
Percent wanting children’s college education	65	65	24
<u>C. Late life cycle</u>			
Percent wanting children’s college education	56	59	30

a. For life cycle stages, see Table 1.