Explanations of Effects of Prior Outcomes on Intertemporal Choices

Niklas Karlsson, Tommy Gärling, and Marcus Selart
Department of Psychology
Göteborg University

Karlsson, N., Gärling, T., & Selart, M. Explanations of effects of prior outcomes on intertemporal choices. Göteborg Psychological Report, 1997, 27, No. 4. In two experiments with undergraduates as subjects, explanations were tested of how a prior outcome in the form of a temporary income change influences choices between immediate and deferred consumption. In Experiment 1, predictions from the behavioral life-cycle hypothesis (H. M. Shefrin & R. H. Thaler, 1988), the renewable resources model (P. W. Linville & G. W. Fischer, 1991), and the loss-sensitivity principle (T. Gärling & J. Romanus, 1996) were contrasted. The results were inconsistent with the renewable resources model and the loss-sensitivity principle since the framing of consumption as positive (buying something wanted) or negative (replacing something broken) did not interact with the income change. Congruent with the notion of mental accounts implied by the behavioral life-cycle hypothesis, the propensity to consume was greater when subjects received an income increase than when they received an income decrease with saved money available. This was further supported in Experiment 2, in which four income-change conditions and two types of goods (durables and nondurables) were introduced. However, there was also a tendency that the consumption of durable and nondurable goods were best accounted for by different specifications of how consumption is constrained through the use of mental accounts. For the durable goods, the propensity to consume seemed to follow the amount of current income, while for the nondurable goods the propensity to consume seemed to decrease only when current income was not perceived as sufficient to cover the cost of consumption.

Key words: Decision making, prior outcomes, intertemporal choice.

Author note: This research was financially supported by grant #94-0086:2C to the second author from the Swedish Council for Social Research. The authors thank Rob Ranyard for comments on an earlier draft. An earlier version of the article was presented at the 15th research conference on subjective probability, utility, and decision making (SPUDM15), Jerusalem, Israel, August 20-24, 1995.
It is not unusual in everyday life that decisions or outcomes are dependent of each other. A number of findings have been reported on this topic (for a recent review, see Gärling, Karlsson, Romanus, & Selart, in press), such as effects of prior outcomes on decisions (Laughhunn & Payne, 1984), escalation (Staw & Ross, 1987), and sunk cost effects (Arkes & Blumer, 1985). The primary aim in the present study is to investigate how prior outcomes in the form of temporary income changes influence choices between immediate and deferred consumption. Unless such temporary income changes modify wealth or total assets, according to normative theory (von Neuman & Morgenstern, 1947; Savage, 1954) it should not influence choices. However, since this does not seem to be the case descriptively, we want to test some explanations of how a prior outcome may influence choice.

Shefrin and Thaler’s (1988, 1992) behavioral life-cycle hypothesis offers one explanation. More specifically, Shefrin and Thaler assume that people decompose wealth into different mental accounts for which the propensity to consume differs. Prior outcomes in the form of temporary income changes may result in that money for consumption has to be taken from different mental accounts and thus have an influence on buying decisions. Shefrin and Thaler assume that people categorize assets in three mental accounts: current income, current assets, and future income. Hence, money is not assumed to be exchangable (cf. the principle of fungability, Thaler, 1990) which is in contrast to what is assumed in the life-cycle theory of saving (Modigliani & Brumberg, 1954).

Shefrin and Thaler (1988) obtained empirical support for the influence of mental accounts on students’ expectations of future consumption. They found that subjects expected to consume more during a year if money was coded as current income than if it was coded as current assets, and that they expected to consume least if it was coded as future income. However, in a study by Selart, Karlsson, and Gärling (in press) of a Swedish nationwide sample and a student sample, the results differed from those obtained by Shefrin and Thaler (1988). It was found that subjects expected to consume more from current assets than from current income. This was hypothesized to be due to temporal discounting of future consumption suggested by research on intertemporal choice (Loewenstein & Prelec, 1992). In the present study, the use of mental accounts did not concern expectations about future consumption but its use and influence on specific buying decisions.

The concept of mental account was introduced by Thaler (1980, 1985) and Tversky and Kahneman (1981; Kahneman & Tversky, 1984; see also Henderson & Peterson, 1992). Tversky and Kahneman (1981, p. 456) defined a mental account as "an outcome frame which specifies (i) the set of elementary outcomes that are evaluated jointly and the manner in which they are combined, and (ii) a reference outcome that is considered neutral or normal." In presenting different scenarios to subjects, Tversky and Kahneman (1981) found that a larger percentage of subjects would buy a new theater ticket if they had lost the equivalent amount of money as compared to the percentage of subjects that would replace a lost
theater ticket. As an explanation of these results, they suggested that subjects evaluated the loss of the ticket and the price of a new ticket in the same mental account while the loss of money and the price of a ticket were evaluated separately. This coding of outcomes into mental accounts is specific to the decision to be made. It can be distinguished from the mental accounts referred to by Shefrin and Thaler in their behavioral life-cycle hypothesis (1988, 1992) which instead are a priori held mental accounts that are part of people's financial knowledge. Ranyard (1995) makes a conceptual distinction between the formation of specific mental accounts and on-going mental accounts. He argues that the latter are higher-order and more stable cognitive structures. Although on-going mental accounts have attracted research (Heath, 1995; Hirst, Joyce, & Schadewald, 1994; Selart et al., in press; Shefrin & Thaler, 1988, 1992; Thaler, 1990; Winett & Lewis, 1995), the impact they have on specific decisions have not been investigated.

Another explanation of how a prior outcome affects a subsequent decision is given by Linville and Fischer (1991). They proposed the renewable resources model to account for how people integrate or segregate outcomes for evaluation and choice. Linville and Fischer (1991) investigated people's preferences for temporarily segregating or integrating emotionally significant (social, academic, and economic) events, for example, whether subjects wanted two positive events to occur on the same or different days. Briefly, the model assumes that people have limited but renewable resources to cope with both positive and negative events. Unlike the use of mental accounts proposed by Shefrin and Thaler (1988), the context of a buying decision is expected to be a determining factor in the renewable resources model. Linville and Fischer (1991) received empirical support for their model in showing that subjects segregated two positive events (gain savoring), segregated two negative events (multiple loss aversion), and integrated a positive and a negative event (loss buffering).

Thaler and Johnson (1990) suggested a hedonic editing rule for explaining integration and segregation of prior outcomes. Starting with the value function in prospect theory (Kahneman & Tversky, 1979), people are expected to integrate or segregate in order to maximize value. Since they found only partial support for their theory, Thaler and Johnson replaced it with the descriptively more accurate quasi-hedonic editing hypothesis, the only difference between the two being that people segregate rather than integrate losses. This hypothesis makes essentially the same predictions as the renewable resources model.

Whether consumption is perceived as positive or negative will, according to the renewable resources model, result in different effects of an income increase and an income decrease on the propensity to consume. If consumption is perceived as positive, where buying is assumed to be regarded as a gain, the renewable resources model predicts that subjects will be more likely to defer consumption when receiving an income increase due to their preference to segregate two gains. In contrast, subjects are predicted to be more likely to buy immediately when faced
with an income decrease due to their preference to integrate a gain and a loss. If buying is viewed as a loss, the renewable resources model predicts the reverse: subjects will be more likely to buy immediately when they receive an income increase and to defer consumption when faced with an income decrease.

An alternative explanation of integration and segregation of prior outcomes is the loss-sensitivity principle proposed by Gärling and Romanus (1996). According to this principle, a prior outcome is only integrated with expected losses. The rationale behind this is that people may be more concerned with avoiding the impact of future negative outcomes than with maximizing value (Larrick, 1993), and that losses therefore receive increased attention. Adding prior outcomes may thus reflect a more thorough processing of expected losses (Romanus, Hassing, & Gärling, 1996). The loss-sensitivity principle has received support in a series of experiments in which subjects indicated their satisfaction with outcomes of gambling choices (Gärling & Romanus, 1996; Gärling, Romanus & Selart, 1994; Romanus et al., 1996; Romanus, Karlsson & Gärling, in press). According to the loss-sensitivity principle, an income change will only be integrated and affect the choice to buy when consumption is perceived as negative (i.e., as a loss). Thus, it is expected that for a negative consumption event buying is more likely after an income increase and less likely after an income decrease. Income change is not expected to have an effect when consumption is perceived as positive. Hence, the expected influence of a prior outcome is assumed to be dependent on the context of the buying decision.

In summary, the aim of the present experiments was to investigate how accurately the use of mental accounts, the renewable resources model, or the loss-sensitivity principle explain why people choose to buy immediately or to defer consumption after experiencing a temporary income change. The use of mental accounts in the behavioral life-cycle hypothesis (Shefrin & Thaler, 1988, 1992) suggests that people have a higher propensity to consume when using money from a current income account than when using saved money. In line with this, it is expected that people are more willing to buy immediately if they receive an income increase than if they have to use savings when their income decreases, irrespective of whether consumption is perceived as positive or negative. The renewable resources model predicts that, if consumption is perceived as positive, the propensity to consume immediately will be greater when income decreases than when it increases. On the other hand, if consumption is perceived as negative, the propensity to consume immediately is predicted to be greater for an income increase than for an income decrease. The loss-sensitivity principle also predicts that for negative consumption events, willingness to buy immediately is greater after an income increase than after an income decrease. However, no difference in willingness to buy is expected for the positive consumption event.
Experiment 1

In Experiment 1 subjects were offered hypothetical choices between buying a durable good immediately or deferring consumption after having received a temporary income increase or an income decrease. Income increase and decrease conditions were equivalent with respect to total assets in that the size of the income increase corresponded to that of saved money in the income-decrease condition.

There were also two different consumption events, one positive and one negative. In the positive consumption event subjects were asked to imagine that they owned a product but that they had been planning to buy a new and better model for a long time. In the negative consumption event subjects were told that a product they owned had broken down and that they were thinking of replacing it. In the positive consumption event subjects were also told that the product was on sale (at a discount rate) in order to enhance the perception of buying as positive. In the negative event, buying was expected to be regarded as a loss. In contrast, in the positive event, buying was expected to be perceived as a gain, that is, the positive aspects of buying are salient.

Given these assumptions, the following predictions about how subjects choose in the two different cases derive from the renewable resources model (Linville & Fischer, 1991). If the event is positive and buying is regarded as a gain, the renewable resources model predicts that subjects will wait to buy when they have received an income increase. In contrast, subjects are predicted to buy when faced with an income decrease. In line with this, a greater propensity to consume is expected for a positive event where income decreases than when it increases. In a negative consumption event, the renewable resources model predicts the reverse: subjects buy when faced with an income increase and wait to buy when faced with an income decrease.

For the negative consumption event, the loss-sensitivity principle (Gärling and Romanus, 1996) predicts the same as the renewable resources model but predicts no effect of income change if consumption is perceived as positive.

The predictions from Shefrin and Thaler’s (1988, 1992) behavioral life-cycle hypothesis are partly different. Because the propensity to consume is less when saved money is used, it follows that subjects are more likely to buy when receiving an income increase than when facing an income decrease. This is expected regardless of whether the consumption event is positive or negative.

Method

Subjects
Thirty two undergraduates at Göteborg University were paid $7 for participating in the study. An equal number of men and women were randomly assigned to two different groups with 16 subjects in each.

**Materials**

Subjects were presented with 16 fictitious choices to buy a CD player, a bookcase, an answering machine, and a writing table. Consumption event was varied as a between-subjects factor. Half of the subjects were presented with positive consumption events and the other half with negative. Furthermore, product price was varied such that in half of the choices the CD player was more expensive than the bookcase and the answering machine more expensive than the writing table, and in the other half the prices of these product pairs were reversed. Half of the subjects were given the two parts in one order, the other half in the reversed order.

Changes in income were varied within subjects. In one within-subject condition, subjects were asked to imagine that they had received a temporary income increase which was the equivalent of $205, $273, $342, or $410. No saved money was available. In another within-subject condition, subjects were asked to imagine that they had received an income decrease of $205, $273, $342, or $410, and that they had $410, $546, $684, or $820, respectively, saved in a bank account. In this way, total assets were equal in the income increase and decrease conditions. Prices of the products were always $137 less than the amount of the income change. The situations were displayed and responded to on a computer.

**Procedure**

Subjects served in groups of four or less. All subjects first read the same general instructions on the computer screen. Here subjects were told that they would be presented with fictitious situations and they were asked to imagine and respond to them as if they were real. Subjects were given a practice example before starting.

In the positive consumption events, subjects were asked to imagine that they owned a product (e.g., the CD player) but that they for a long time had been planning to buy a new and better model. They were also told in this condition that the product was on sale at 33% off normal price. Subjects in the negative consumption event condition were told that the product had broken down, and that they therefore were thinking about buying a new one. (See Appendix A for the complete wording of the positive and negative consumption events). In both consumption events,

---

1These amounts were in Swedish Crowns expressed in even hundreds ($1 is approximately equal to SEK 7).
subjects were told that they had found a product that they liked but that they before buying it first wanted to check the monthly salary they had received on the same day. Subjects were then told that they had received a temporary income increase or decrease and how much they had saved in a bank account.

For each situation subjects were asked to make a choice as if it was real between buying the product at once or waiting until later, and to rate how likely they were to choose the way they did. Ratings were made on a continuous scale from 0 to 100, where 0 was defined as not especially likely, 50 as rather likely, and 100 very likely.

The sessions lasted for about 15 minutes after which subjects were debriefed and paid.

Results and Discussion

The ratings of likelihood were given a positive sign if subjects chose to buy and a negative sign if subjects chose to wait until later to buy the product. Thus, the dependent variable ranged from -100 to 100 with a positive value indicating a preference to buy at once and a negative value a preference to wait until later.

As the means given in Table 1 show, the propensity to consume was greater when subjects received an income increase than when they received an income decrease. A 2 (consumption event: positive vs. negative) by 2 (order) by 2 (income change: income increase vs. income decrease) ANOVA with repeated measures on the last factor revealed a main effect of income change, $F(1, 28) = 31.43$, $p<.001$. The mean ratings were positive for an income increase and negative for an income decrease. This result is in line with the behavioral life-cycle hypothesis (Shefrin and Thaler, 1988, 1992). The propensity to consume is greater if money from the current income account can be used than if the current-assets account have to be used.

---

2 All analyses reported below were also performed on choice proportions with almost identical results.
Table 1
Means of Propensity to Consume for Different Consumption Events and Income-change Conditions

<table>
<thead>
<tr>
<th>Income-change condition</th>
<th>Consumption event</th>
<th>Income decrease</th>
<th>Income increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>-25.6</td>
<td>20.6</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>-27.3</td>
<td>41.2</td>
<td></td>
</tr>
</tbody>
</table>

No significant differences were found between positive and negative consumption events. The interaction effect predicted from Linville and Fischer's (1991) renewable resources model between consumption event and income change was not found. The tendency was rather that the propensity to consume was greater for the positive than for the negative consumption event when subjects received an income increase, whereas there was no difference when they received an income decrease. It is possible that the income decrease was perceived as so negative that it dominated any potential effects of consumption event. Separate t-tests for the two income-change conditions did not, however, reveal a significant difference between the consumption events in the income increase condition. Separate t-tests for the negative and positive consumption event showed that the propensity to consume was in both cases significantly higher for income increase than for income decrease. Since income change affected the propensity to consume for the positive as well as for the negative consumption event, the loss-sensitivity principle (Gärling and Romanus, 1996) was not supported.

The mean propensities to consume in the different income-change conditions are given in Table 2 for the different products and price levels. Two separate 2 (income change: income increase vs. income decrease) by 2 (products: either CD player and bookshelf or answering machine and writing table) by 2 (price: either 2000 and 1500, or 1000 and 500) repeated-measures ANOVAs yielded no significant main effects of product. Only in the second ANOVA comparing the lower prices was a reliable main effect of price obtained, $F(1, 30) = 36.02, p < .001$. This effect was modified by a significant interaction with income change, $F(1, 30) = 19.86, p < .001$. As indicated in the table, when the price is low the propensity to consume when receiving an income increase is much higher for the lower priced products. Since the income increase was lower for the lower price, this is in line with the behavioral life-cycle hypothesis (Shefrin & Thaler, 1988, 1992) which proposes that a smaller increase in income is more likely to be coded as current income and is therefore more readily spent. Table 2 further shows that subjects were less inclined to buy a CD player than a bookcase in the income-decrease condition. This
difference was substantiated by a significant interaction between income change and product, \( F(1, 30) = 7.50, p < .01 \).

Table 2
Means of Propensity to Consume for Different Levels of Prices, Income-change Conditions, and Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Price and income-change condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low price</td>
</tr>
<tr>
<td></td>
<td>Income decrease</td>
</tr>
<tr>
<td>Answering machine</td>
<td>-16.7</td>
</tr>
<tr>
<td>Writing table</td>
<td>6.1</td>
</tr>
<tr>
<td>Bookcase</td>
<td>-20.3</td>
</tr>
<tr>
<td>CD player</td>
<td>-46.4</td>
</tr>
</tbody>
</table>

In conclusion, the propensity to consume durable goods is greater when receiving an income increase than when receiving an income decrease where saved money is available. This violates the principle of fungability in economic theory (Thaler, 1990) and supports the behavioral life-cycle hypothesis (Shefrin and Thaler, 1988). It should be noted that the present results extend the results obtained by Shefrin and Thaler (1988) since they validate the use of mental accounts in specific buying decisions and not only in expectations of future consumption. It is however not clear from the results whether it is the use of saved money or the income decrease in itself which has the negative effect on buying.

Experiment 2

The main purpose of Experiment 2 was to settle the issue raised in Experiment 1 concerning whether the income decrease in itself, the reluctance to use saved money, or both, account for the unwillingness to consume when receiving an income decrease. Hence, further specifications of how people may constrain consumption through the use of mental accounts was explored. In Experiment 2, four hypothetical situations were used: an income increase with no savings, a smaller income increase with
savings, an ordinary income with savings, and an income decrease with savings. Introducing two intermediate conditions of income change makes it possible to determine if it is the use of savings (and thus transferring money from a different mental account), the change in income, or a joint effect of the use of savings and change in income, that accounts for the differences in the propensity to consume observed in Experiment 1.

**Figure 1.** Different possible outcomes for the propensity to consume in different income-change conditions.

Different possible outcomes are expected as follows (see Figure 1): (1) *Reluctance to use savings*. If the propensity to consume is less when subjects have to use saved money, then it is expected that there will only be a difference between receiving an income increase covering the expenses of a purchase and the other conditions where subjects have to use at least some saved money; (2) *Effect of income change*. People's propensity to consume may be directly affected by an income increase or an income decrease. An income increase may thus be a dominant reason to buy something wanted and an income decrease a dominant reason not to buy. Accordingly, the propensity to consume for no income change would lie in between; (3) *Ordinary income sufficient*. A third possible outcome is that something wanted is purchased as long as the ordinary income is perceived as sufficient. It is possible that subjects perceive part of their ordinary income as discretionary income (Katona, 1975), that is, as a part of the income that is possible to choose to spend or save. In the case of an income decrease, it is likely that no such discretionary income
is perceived. If subjects plan to buy something wanted and preferred, it may be expected that the propensity to consume is greater if a discretionary income is perceived to be available.

These three possible outcomes can be seen as different reasons for violations of the principle of fungability. The effect of an income change is, in contrast to the other predictions, not necessarily an indication of the use of mental accounts. However, both reluctance to use savings and ordinary income sufficient are based on the assumption that the propensity to consume is different for different mental accounts. For reluctance to use savings, the expectation is that the propensity to consume is less if subjects have to use savings as well as discretionary income, while for ordinary income sufficient the expectation is that the propensity to consume is less if subjects have to use savings but not a discretionary income.

Another objective of Experiment 2 was to investigate if an income change and the use of saved money have the same effect on the propensity to consume nondurable goods, such as a short vacation trip or buying dinner for friends, as they have on the propensity to consume durable goods. Interestingly, Hirst et al. (1994) found that people prefer to borrow money (i.e., use a future income) for something with long durability than for something with short durability. In line with this, it is expected that the use of savings is more preferred for buying durable than for buying nondurable goods.

Method

Subjects

Another 32 undergraduates (16 men and 16 women) at Göteborg University participated as subjects and were randomly assigned to two equally large groups. Subject received the equivalent of $7 in payment for their participation.

Materials and Procedure

Only the positive consumption event was used in Experiment 2 (see Appendix A). Subjects were asked to make a choice between buying at once or waiting until later. They also rated the likelihood of this choice. There were 16 different situations in which product, price, change in income, and amount of saved money were varied. Type of good was varied between subjects. Half of the subjects were presented with durable goods and the other half with nondurable goods. All subjects were presented with the four different income change situations: income increase with no savings, smaller income increase with savings, ordinary income with
savings, and income decrease with savings. These situations were constructed so that the total assets were equal.

In the income increase/no savings situation, subjects were asked to imagine that they had received a temporary income increase of $270 or $410, and that no savings were available. In the income increase/savings situation, the amounts of the income increase were $68 or $137 and savings were $205 or $273, respectively. In the ordinary income/savings situation, the subjects were told that they had received their ordinary income and that they had $273 or $410 in savings. In the income decrease/savings situation, the income decrease was $273 or $410 and the savings were $546 or $820, respectively. Two price levels for the durable or nondurable goods were used: the price was $273 when income change plus savings totalled $410, and it was $137 when income change plus savings totalled $273.

In the durable-goods condition the products were a CD-player, a bookcase, an answering machine, or a writing table. The nondurable-good conditions consisted of choices of a vacation trip for four days, arranging a party, a vacation trip for two days, or buying dinner for friends.

In all other respects the materials and procedures were the same as in Experiment 1. Subjects were told that they had found a product that they liked but that they first wanted to check their monthly salary that they had received the same day. After the subjects had been informed about the income change and how much they had in savings, they were asked if they would buy at once or wait until a later date. They were also asked to rate the likelihood of this choice on a continuous scale from 0 to 100, where 0 was defined as not especially likely, 50 as rather likely, and 100 as very likely.

The task took about 15 minutes to complete. After completing the task subjects were debriefed and paid for their participation.

Results and Discussion

A 2 (good: durable vs. nondurable) by 4 (income change: income increase/no savings vs. income increase/savings vs. ordinary income vs. income decrease) ANOVA with repeated measures on the last factor was performed on the ratings of propensity to buy. These were assigned a positive sign if subjects chose to buy immediately and a negative sign if they chose to defer consumption. A significant main effect was found of income change, $F(2.39, 71.81) = 9.58, p < .001$, after Greenhouse-Geisser correction of the degrees of freedom. Figure 2 displays the means for the propensity to consume for the different income changes. Across type of goods, the largest difference is between ordinary income and income decrease. Bonferroni corrected $t$-tests at $p = .05$ revealed that only the means for the income-decrease condition differed reliably from the other means. Since there was a clear and reliable difference between income increase and income decrease, the results were consistent with the results
of Experiment 1. Furthermore, of the three expected outcomes depicted in Figure 1, the pattern of results shown in Figure 2 was most similar to that of "ordinary income sufficient". The fact that subjects did not buy when they received an income decrease also indicated that they were unwilling to use saved money.

![Figure 2: Mean propensity to consume in different income-change conditions.](image)

Although not statistically significant, the effect of income change tended to differ for durable versus nondurable goods (see Figure 3). For nondurable goods the results were most similar to the "ordinary income sufficient" outcome. For the durable goods, on the other hand, the pattern of results was not consistent with any of the expected outcomes. It is possible that both reluctance to use saved money and income change influenced the choice to buy durable goods. More precisely, it seems that the propensity to consume follows the income of the specific month, increasing with an increase in income and decreasing with a decrease in income. Thus, the propensity to consume durable goods may follow the budget provided by the income of the month, while the propensity to consume nondurable goods may be sensitive to a reluctance to use savings rather than the month’s income. Furthermore, this result suggests that there is some correspondence between type of mental account and type of spending. It may be suggested that there is a difference between a discretionary income and money which has been saved. One may be more
willing to spend the former than the latter on nondurables. However, although the main effect of type of goods did not quite reach significance at $p = .05$, the results suggested that subjects overall tended to be more willing to buy the nondurable goods. Another possibility is therefore that a discretionary income is used for more attractive goods.

![Figure 3. Mean propensity to consume for different income-change conditions and type of good.](image)

### General Discussion

The aim of the present experiments was to shed light on how people are influenced by a prior outcome in the form of temporary income changes when making choices between immediate and deferred consumption. According to the behavioral life-cycle hypothesis (Shefrin & Thaler, 1988, 1992), people are reluctant to use saved money. Therefore, they will consume less if they receive an income decrease even though they have money saved. In contrast, the renewable resources model (Linville & Fischer, 1991) predicts differences in propensity to consume depending on whether the consumption event is perceived as positive or negative. In the case of an income decrease, people will increase consumption if it is perceived as positive but decrease consumption if it is perceived as negative. The reverse is predicted for an income increase. The loss-sensitivity principle (Gärling and Romanus, 1996) predicts a higher
propensity to consume for an income increase and a lower propensity to consume for an income decrease if consumption is perceived as negative. If consumption is perceived as positive, no effect of income change is expected on the propensity to buy.

The results of both experiments supported the behavioral life-cycle hypothesis. In Experiment 1, neither the pattern of results predicted from the renewable resources model nor the pattern of results predicted from the loss-sensitivity principle was observed. Contrary to what was predicted, propensity to consume increased for an income increase when the consumption event was positive. For an income decrease, the propensity to consume was always low. The question arises why these explanations do not seem to be valid in the present study, although they accurately predicted previous results (Linville & Fischer, 1991; Thaler & Johnson, 1990; Romanus et al., 1996; Romanus et al., in press). In the present study the choices concerned immediate or deferred consumption. It is possible that issues about self-control, implemented in the use of mental accounts, is more important in such choices than the affective control of events to occur on the same or different days investigated by Linville and Fischer (1991). The loss-sensitivity hypothesis may be limited to risky decisions. That is, uncertainty of outcomes may be a crucial factor in the studies supporting this hypothesis. In the present study, no such uncertainty was involved.

In all income-change conditions, subjects knew that they had access to the same amount of money. In accordance with the concept of a mental account, the changes in propensity to consume thus reflected unwillingness to use saved money. However, in Experiment 1 it was not possible to rule out the possibility that income change itself affected propensity to consume. This possibility was ruled out by the results of Experiment 2.

In Experiment 2 two possible specifications of how consumption may be constrained through the use of mental accounts were tested. In one specification, subjects never used any saved money; in the other, a difference was introduced between saved money and discretionary income (a part of the income which may be spent or saved). The results showed that subjects were not reluctant to use discretionary income for consumption. An implication is that the concept of a mental account may need to be further refined (Shefrin & Thaler, 1988, 1992).

The results of Experiment 2 did not reveal an expected difference between durable and nondurable goods. It was expected that subjects would be more inclined to use saved money for buying durable goods than for buying nondurable goods. However, the largest difference in propensity to consume between nondurables and durables was found for the condition where there was no income change. Furthermore, the decrease in propensity to consume between an unchanged income and an income decrease was greater for nondurables than for durables. Subjects tended to be more willing to use a discretionary income for buying nondurable than durable goods.
However, it is possible that the differences found between durable and nondurable goods may have resulted from differences in attractiveness of the goods. Further experiments are needed to disentangle the effects of durability and attractiveness. Further research is also needed to examine the validity of the suggestion that the propensity to consume durables may follow the income of the month, while the propensity to consume nondurables may be governed by a reluctance to use savings.

References


Appendix A

Positive Consumption Event
Imagine that you have a CD player but that you have been thinking about buying a new and better one for a long time. Today, after looking in different stores, you found a CD player that you think is great. Normally the price of the CD player is 3000 SEK, but right now it costs 2000 SEK, which is a 33% discount. Before you decide to buy it you want to check your monthly salary that you have received today. Imagine that you have received a temporary income increase (decrease) of 3000 SEK after taxes. You have 0 (6000) SEK saved in a bank account. Would you buy a new CD player now or wait until a later occasion?

Negative Consumption Event
Imagine that your CD player have broken down and that you therefore are thinking about buying a new one. Today, after looking in different stores, you found a CD player that you think is a good replacement. The price of the CD player is 2000 SEK. Before you decide to buy you want to check your monthly salary that you have received today. Imagine that you have received a temporary income increase (decrease) of 3000 SEK after taxes. You have 0 (6000) SEK saved in a bank account. Would you buy a new CD player now, or wait until a later occasion?