Status Quo Bias versus Variety Seeking
An Experimental Investigation into Situational and Individual Moderators

by Katrin Burmeister and Christian Schade

With many consumer decisions, two opposed behavioral tendencies are observed: status quo bias and variety-seeking behavior. In this paper, we identify individual-specific and situation-specific moderators of the relative strength of these phenomena via an experimental study. As expected, we find differences between decision scenarios regarding variety-seeking behavior and status quo bias but the effects are more complex than expected. Making an alternative the status quo, often leads to the result that an alternative similar to the status quo is chosen rather than the status quo itself. Furthermore, the moderators risk propensity, sensation-seeking tendency, and competence each have a selective impact on the relative strength of variety-seeking behavior and status quo bias in the decision situations. These findings are discussed and implications for marketing and future research are outlined.

Keywords
Status quo bias, variety seeking, experiment, consumer behavior, individual differences

1. Introduction

In the literature, a behavior where individuals decide for the status quo disproportionately often, irrespective of habits formed by multiple repeat purchases, is known as the status quo bias. Two economists, Samuelson/Zeckhauser (1988), described this phenomenon first. Meanwhile, the status quo bias is accepted by many economists as an individual behavior that does not go along with any normative, rational decision model. As it is the case with habits, a status quo bias occurring is opposed by variety-seeking behavior. The latter relationship has not been investigated in the literature, although the phenomenon is of central relevance for consumer behavior as we are going to show. In this paper, we investigate both opposed effects in a joint experimental study. Furthermore, we identify characteristics of individuals and decision situations that amplify or diminish the status quo bias and/or its antagonist variety-seeking behavior.

With the help of an experiment that we conducted in a laboratory with 180 participants, we examine possible moderator variables that influence the occurrence and the extent of status quo bias and variety-seeking behavior [1]. We based our experimental design on the work of Samuelson/Zeckhauser (1988) and additionally used both individual trait variables and the decision situation’s attributes (e.g., product category) as moderators. For our work we assume that variety seeking and status quo bias are behavioral tendencies that result in opposite behavior on a single dimension, i.e. a tendency (not) to change. The latter is the main effect we investigate. In all decisions either one phenomenon dominates or they cancel each other out (see the lower part of Table 1).

By varying decision scenarios, we manipulate situational attributes that may lead to a dominance of either status quo bias or variety-seeking behavior. In total, behavior in four usable decision scenarios was elicited to examine the relative strength of the two behavioral tendencies [2]. These scenarios can be assigned to two relatively extreme groups. The first group consists of two decision scenarios and is characterized by low-stakes consequences and a relatively high frequency of occurrence. Furthermore, these two situations are sensual decision scenarios. With this term we refer to alternatives where the utility is mainly derived from sensual experiences (SENS scenarios). The second group includes two other decision scenarios and can be described by high-stakes consequences and a relatively low frequency of occurrence. These decisions are about alternatives where the
utility is mainly derived from cognitively evaluable characteristics (COG scenarios). With the help of these four decision scenarios, we are able to measure the relative strength of the two drivers of the main effect: status quo bias vs. variety-seeking behavior, via the selection of the status quo or a different alternative.

Besides the main effect, we experimentally test the following characteristics of individuals that proved to be relevant based on the literature: perceived competence (as the individual’s perception of the match of her own abilities or experiences regarding a respective decision situation and its requirements), risk propensity, and sensation seeking in the sense of Zuckerman (1974). These individual-specific attributes of the participants serve as interaction terms in our econometric models.

Concerning the main effect, our experimental results confirm the general direction indicated by our hypotheses in direct pairwise comparisons of the scenarios. As expected, we find a tendency toward variety-seeking behavior in the SENS scenarios. Behavior in the COG scenarios is characterized by a more pronounced tendency toward a status quo bias than in the SENS scenarios. However, a separate analysis of each scenario reveals more complex and challenging results. Regarding the moderators, we find the predicted influence of sensation seeking and risk propensity in some scenarios. The moderating influence of competence is significant in the scenarios where it is expected but in one case in the opposite than the expected direction.

We contribute to the consumer behavior literature by introducing the concept of status quo bias adapted from behavioral economics. We also confront this phenomenon with an effect known from consumer behavior, i.e. variety seeking. We offer a more pragmatic definition of variety seeking than usual and test this phenomenon in an experimental setup. Furthermore, we present both behaviors on one dimension, namely the dimension of ‘changing a decision’. Whereas some moderators of variety-seeking behavior were already identified in the literature, we experimentally test whether the same and other variables influence the joint effect of status quo bias and variety seeking according to our simplified definition.

In the next section of this paper, we shed light on the theoretical underpinnings of the status quo bias and variety-seeking behavior. Afterward, we look at how situation characteristics may impact the two opposed drivers of the main effect. This part is followed by the introduction of individual-specific moderators of status quo bias and variety-seeking behavior. Thereafter, we describe the experimental design and our results. We also discuss the results and identify limitations of our study as well as interesting aspects for further research. The last part deals with marketing implications.

2. Status Quo Bias in the Literature

Many decisions include a status quo option, i.e. doing nothing or maintaining a current or previous decision. The status quo bias has been observed both in field experiments and in the laboratory. To our knowledge, Samuelson/Zeckhauser (1988) were the first who used an experimental setup in order to test for a status quo bias occurring in consumer decisions. They proved a significant status quo bias in 31 of 54 cases. In the literature, the status quo bias is often connected to similar phenomena such as the discrepancy between the selling and the buying price of a good (willingness to accept, WTA; willingness to pay, WTP; for an overview see Horowitz/McConnell 2002). Furthermore, Thaler (1980) speaks of an endowment effect when the value of a good depends on whether it is already possessed or not. Besides the WTA-WTP discrepancy and the endowment effect, anchoring is another more loosely related effect (Samuelson/Zeckhauser 1988, p. 36). Although the emphasis of this contribution is on the identification of situational and individual-specific moderators of the status quo bias and variety seeking, it is important to stress that loss aversion and regret avoidance are possible explanations for both phenomena. With loss aversion we refer to a behavior that individuals weight losses heavier than gains when making decisions (Kahneman/Tversky 1979, 1984). Following this theory, a loss of the status quo option can be avoided when this alternative will be chosen again. People do not only try to avoid losses but also regret resulting from outcomes of past decisions (Bell 1982). As Kahneman/Tversky (1984) state, people feel stronger regret for bad outcomes than similar bad consequences from inaction. Like feelings of regret, counterfactual thinking is also dealing with past or present decisions. Counterfactual thinking is associated with if-only-thoughts, is considered the cognitive pendant of regret (Roese/Olson 1995), and may also cause a bias towards the status quo. Kahneman/Knetsch/Thaler (1991, p. 25) state that “after more than a decade of research on this topic we have become convinced that the endowment effect, status quo bias, and aversion to losses are both robust and important.”

In the consumer behavior literature, the phenomenon of repeating one’s decision is dealt with under the heading of habitual behavior. However, whereas habitual behavior requires multiple repetitions of a decision to become a habit, the status quo bias neither requires more than one previous action nor the fact that this action had been carried out by the respective decision maker herself. The mere existence of the difference between these two phenomena makes the status quo bias relevant for consumer behavior research. In other words, consumer behavior research should be interested in decision situations where another individual has set the status quo preceding my decision and/or where only one previous action is relevant. As an example, a person that inherited a Mercedes Benz from her father may buy another Mercedes after the
old one broke down (after many years). This could be considered a decision influenced by the status quo but may not easily be subsumed under the heading of habitual buying behavior.

3. Variety-Seeking Behavior in the Literature

Variety seeking can be described as a switching behavior between product variants or between service alternatives only for the sake of switching (McAlister/Pessnier 1982). Likewise, the status quo bias could be characterized as a non-switching behavior between product variants or between service alternatives only for the sake of keeping. Consequently, variety seeking may be perceived as a phenomenon directly counteracting a status quo bias. According to Holbrook/Hirschman (1982), variety seeking can be explained by experiential or hedonic motives rather than by utilitarian aspects of consumption. Kahn (1994) finds that variety seeking is an individual's tendency to look for changes in the medium and in the long run. Hoyer/Ridgway (1984) differentiate between subjective and objective characteristics that describe products relevant for variety seeking. Buying frequency and the number of available alternatives are objective characteristics. Subjective characteristics are, e.g., perceived risk and the stimulation of the human senses. These features show that not all situations may lead to variety seeking. As Hoyer/Ridgway (1984) state, variety-seeking behavior is a phenomenon that depends both on individual characteristics like the need for variety and on product category-specific characteristics [3].

Another important aspect when dealing with variety-seeking behavior is the role of the optimum stimulation level (OSL) (e.g., Steenkamp/Baumgartner 1992). According to McReynolds (1971), people tend to prefer intermediate levels of stimulation – referred to as the OSL. Furthermore, there exist reliable individual differences in the amount of stimulation considered by an individual decision maker. A suboptimal level of stimulation leads to a situation of boredom (Steenkamp/Baumgartner 1992) that can be dissolved by complicating the buying process with variety-seeking behavior (Howard/Sheth 1969). Variety seeking results in a behavior opposite to a bias toward the status quo. For a theoretical and empirical match of the two phenomena, we redefine variety-seeking behavior in a pragmatic way: Variety seeking is defined to occur as soon as a subsequent decision differs from the status quo. Regardless of any further drivers of such changing behavior, e.g., preferences against the pre-selected status quo alternative, and independent of any switching tendency, we hence treat variety seeking and status quo bias as the sole antagonistic drivers of switching behavior (see the graphical part of Table 1).

4. Deriving the Experimental Hypotheses

4.1 Main Effect

In this phase of research we concentrate on four situations characterizing two extremes. The two decisions belonging to the SENS scenarios are preparing a main course for guests and buying a cosmetic product. The COG scenarios include two other decisions, namely deciding on security measures for policemen, and making a private investment.

Although we call these two groups SENS and COG scenarios, both are characterized by further attributes. While the SENS scenarios can also be described by low stakes and a high frequency of occurrence, the COG scenarios include high-stakes decisions with a low frequency of occurrence. All these situational characteristics can be tested separately, as stated in the theoretical hypotheses A-C below. However, our way of selecting scenarios – and merging effects – enables us to state clear-cut directional hypotheses without requiring a large number of decision scenarios that would have resulted in a quite time-consuming experiment. As a consequence, hypotheses A-C are later merged into the experimental hypothesis 1.

We define the stake of a decision as how large the consequences of the respective decision are for the decision maker. High-stakes decisions imply large consequences and low-stakes decisions imply small consequences. Decisions with large consequences involve a higher risk than decisions with small consequences. Such a risk can be seen as additional cost. Thus, the costs of trying something new only for the sake of variation are large in high-stake decisions. Making a “wrong” or non-satisfying decision is not very costly when the consequences are small. Kunreuther et al. (2002) define high-stakes decisions as choice problems that include large financial and/or emotional prospective loss outcomes and high cost to reverse a decision once it is made. Theoretical hypothesis A follows from these considerations.

HA: Variety seeking can be observed more often in low-stakes rather than in high-stakes scenarios.

Hoyer/Ridgway (1984), Kahn/Lehmann (1991) as well as other researchers state that products that are associated with affective sensations (e.g., food, drinks, restaurants) should induce more variety-seeking behavior than those that have more cognitive attributes. A repeated decision for the same sensual-attribute product will probably lead to boredom or satiation. The following hypothesis summarizes these thoughts.

HB: Variety seeking can be observed more often in sensual rather than in cognitive decision situations.

According to Howard/Sheth (1969) and van Trijp/Hoyer/Inman (1996), a high purchase frequency can result in boredom with the choice task, thus stimulating variety-seeking behavior. Therefore we derive the following theoretical hypothesis:
HC: Variety seeking can be observed more often with high rather than with low purchase frequency goods.

For the combination of characteristics reflected in our SENS and COG scenarios, all theoretical hypotheses imply the same behavioral predictions for these two groups of situations. Hence, we merge them into our first experimental hypothesis.

H1: For decisions in SENS scenarios we expect the variety-seeking tendency to be relatively stronger than the status quo bias and we assume the status quo bias to be relatively stronger than the variety-seeking tendency for decisions in COG scenarios.

4.2. Interaction Effects

In the following section, we introduce selected individual-specific moderators of status quo bias and variety-seeking behavior. Assuming that all moderators have an influence, we discuss why and what kind of influence we expect on the decision-making processes. These expectations are formulated as hypotheses. Since these variables are measured separately for all respondents, all theoretical hypotheses are, at the same time, experimental hypotheses.

Gysler/K ruse/Schubert (2002) describe competence as the perception of being knowledgeable. We also operationalize competence via self perceptions. Individuals’ perceived competence depends on the situational context of the decision task. Eellsberg (1961) observed that individuals prefer alternatives with exact rather than ambiguous probabilities. However, Heath/Tversky (1991) found that individuals might also prefer decisions under ambiguity when they feel knowledgeable in the respective field of decision. Since decision makers may perceive the status quo alternative as being the high information and low ambiguity alternative, an individual perceiving herself as being incompetent in a certain decision situation may select the status quo alternative more frequently.

Although competence is an individual-specific variable, it also depends on the decision context. The influence of knowledge on a specific decision task may be expected to be most relevant in COG scenarios. Many researchers found that knowledge plays an important role in investment decisions (Weber 1989). As there is no evidence for an influence of knowledge and competence in decisions when sensual attributes play a role, we base our hypothesis 2 only on the COG scenarios.

H2: The more competent a decision maker perceives herself in a COG scenario, the less probable it is that she will choose the status quo option.

Like Heath/Tversky (1991) and Keppe/Weber (1995), we measured the self perception of competence via direct, situation-specific questions. Individuals had to state the percentile that best mirrored their competence relative to the German population. For example, "Zero percent" reflected the respondent’s judgment that everybody in the German population was perceived as being more knowledgeable in this domain than herself.

In most decision situations dealt with in this contribution, the objective degree of uncertainty is relatively small. However, only few consumer decisions are completely free of risk since the alternatives cannot be evaluated exhaustively. In addition to the objective risk, the decision maker has a subjective perception of the situation's risk. This means that one decision maker may perceive the risk of choosing a product larger than others. An overestimation of risk may even be a general tendency whenever the objective risk is very small; at the same time, some respondents may fully neglect such a very small risk (e.g., Kahneman/Tversky 1979; Schade/K unreuther/K aas 2004) [4]. As Weber/M i lliman (1997) demonstrate, risk propensity and risk taking behavior may largely deviate from each other due to differences in risk perception. Individuals seem to apply their risk propensity to perceived risks. This concept is called perceived risk attitudes by these authors. Whereas perceived risks depend on the decision situation and on the decision maker, risk propensity is considered a relatively constant trait variable. Following from these considerations we think that the individual risk propensity has a moderating influence on decision making. Since trying something new may just be perceived as risky per se, irrespective of the objective risk, and since the advantage of selecting the status quo option is that all consequences are certain and known (see, for a similar rationale, Lévesque/Schade 2005), hypothesis 3 follows.

H3: The more risk averse a decision maker is, the more likely she is to choose a status quo option, and the less likely she is to engage in variety seeking.

The risk propensity was operationalized as usual in decision theory and measured via lottery comparisons (M C ord/Neufville 1986). The individual risk propensity measure was calculated using a method introduced by L évesque/Schade (2005). See the Appendix for a derivation of this method.

Sensation-seeking behavior is an individual’s tendency to make varying, complex, and intense experiences, and the readiness to accept physical, social, legal, and financial risks for these experiences (Zuckerman 1974). In order to measure an individual’s tendency to engage in variety seeking, McAllister/P essemier (1982) suggest the well-established Sensation Seeking Scale by Zuckerman (1974). We use the same measurement. The scale consists of 40 items within four subscales. Two examples of such items are I(a) “I like some of the earthy body odors” or I(b) “I don’t like body odors respectively,” and II(a) “I like wild ‘uninhibited’ parties” or II(b) “I prefer quiet parties with conversation.” As these examples show, there is a sensation seeking and a non-sensation seeking answer for each item. For each sensation seeking answer, the respondent gets one point. Hence, the total score varies between zero and 40, with 40 representing an extreme sensation seeker. These considerations lead to hypothesis 4.
H4: Individuals with a pronounced tendency to seek sensations have a higher tendency to behave in a variety-seeking manner.

4.3. Summarizing the Hypotheses

Table 1 depicts our main hypotheses together with the decision scenarios we are going to use in our experiment.

Finally, we summarize all expected interaction effects in Table 2.

5. Experimental Design

Our experiment was designed to test the above hypotheses. The experimental setup consisted of two parts. In the first part of the experiment, we used four (originally six, see [2]) different situations in order to test for the main effect, i.e. the occurrence of a status quo bias vs. variety-seeking behavior. The basic idea of the experimental design stems from Samuelson/Zeckhauser (1988) who tested several decisions for and against the status quo. In the second part of the experiment, we interrogated the participants with respect to selected moderators like situation-specific competence, risk propensity, and tendency for sensation-seeking behavior.

The basis of testing for a status quo bias vs. variety-seeking behavior was a between-subjects manipulation. We used three treatments, i.e. a neutral and two status quo treatments. In the neutral treatment, the decision maker faces a task with four options where none of the alternatives is emphasized. In the status quo treatments one of these four options is the status quo option that was reported as already been chosen once by the decision maker herself or by someone else. The status quo was manipulated as a prior experience (with cooking), as a prior purchase (with a cosmetic product), as a predetermined portfolio choice (with a private investment), and as a decision previously made by other people (with the decision about security measures). Thus, we report on results of a 3x4 between-within-subjects experimental design with three indicating the number of treatments and four representing the number of decision situations. Participants were randomly (re-)assigned to one of the three treatments from situation to situation. Hence, respondents may have faced different treatments in each decision scenario.

We decided for 30 male and 30 female respondents in each treatment group (see Table 3) in order to account for any potential gender differences in behavior (not analyzed in this paper). A total of 180 students attended the experiment in the experimental laboratory of the Institute for Entrepreneurial Studies and Innovation Management of Humboldt-Universität zu Berlin. The experiment was programmed with dynamic web pages on the basis of PHP and SQL.

Variety seeking versus status quo effects were operationalized via a manipulation of characteristics of different decision situations (i.e. stakes of the decision, frequency of purchase, and sensual versus cognitive decisions). These manipulations were expected to invoke differences in the relative strength of these effects. Interaction effects depended on the relative strength of the main effect, switching or keeping a prior choice, and three individual-specific variables: sensation seeking, risk propensity, and competence. Each of the latter was measured using scales or questions adapted from the literature. Furthermore, we tested the prediction power of the treatment as well as the interaction effects between treatment and individual-specific variables in a regression model. We apply a multinomial logit regression for each decision situation separately in order to control for situational variables.

The experiment was conducted in 24 groups with 7–9 participants in each of them. On average, the participants

<table>
<thead>
<tr>
<th>Situations</th>
<th>Attributes</th>
<th>SENS scenarios</th>
<th>COG scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying a cosmetic product</td>
<td>Low stakes</td>
<td>Private investment</td>
<td>High stakes</td>
</tr>
<tr>
<td>Preparing a main course</td>
<td>Sensual</td>
<td>Police security</td>
<td>Cognitive</td>
</tr>
<tr>
<td>High frequency of occurrence</td>
<td>Status quo bias</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Relative strengths of the two drivers of the main effect in the two different groups of decision situations

Table 2: Summarizing the expected directions of the interaction effects in our experimental study; where “+” means an amplifying and “−” a diminishing effect.
were 24.1 years old and attended university in their third year. 60% of the students were enrolled in business and economics, whereas others studied law, social sciences, computer sciences and cultural studies. Besides receiving a fixed compensation of €6, each participant had the chance to win one out of eight vouchers for a movie theatre in a final lottery (independent of their decisions). The chance to win a voucher at the end of the experiment was used in order to raise the expected income for the time students participated in the experiment.

6. Results

6.1. Testing for the Main Effect

H1 stated that for decisions in SENS scenarios we expect the variety-seeking tendency to be relatively stronger than the status quo bias and that we assume the status quo bias to be relatively stronger than the variety-seeking tendency for decisions in COG scenarios. H1 can be tested in two ways. Before analyzing each decision situation separately (see Table 5) we compared the variety-seeking effect versus the status quo bias in the two COG scenarios with the respective effects in the two SENS scenarios in pairs. This leads to four comparisons: COG1-SENS1; COG1-SENS2; COG2-SENS1; COG2-SENS2. This is an illustrative way of looking at the data but weakens experimental control over, e.g., differences in general preference levels toward the alternatives because we have to exclude the neutral treatments and reduce the number of respondents to 120. The upper part of Table 4 shows as expected that the two SENS scenarios lead to a higher percentage of variety-seeking responses than the COG scenarios. While, e.g., 103 out of 120 responses indicated a change away from the status quo alternative in the cooking scenario, only 76 responses indicated such a change in the security measures scenario. To analyze statistical significance, we used a non-parametric within-subjects test for pairwise comparisons (Sign-Test) between SENS and COG situations. According to the lower part of Table 4, differences between the two SENS and the security measures scenario reach statistical significance. The investment scenario is located in a middle position between the extremes and does not differ significantly from the SENS scenarios.

<table>
<thead>
<tr>
<th>Preparing a main course</th>
<th>Neutral Treatment</th>
<th>Status quo Treatment 1</th>
<th>Status quo Treatment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmetic product</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Private investment</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Security measures for policemen</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 3: 3 x 4-between-within-subjects design with 60 as the number of decisions (30 females & 30 males) in each cell

<table>
<thead>
<tr>
<th>Preparing a main course</th>
<th>Status quo bias vs. variety seeking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SQB</td>
</tr>
<tr>
<td>Count</td>
<td>17</td>
</tr>
<tr>
<td>Expected Count</td>
<td>25.8</td>
</tr>
<tr>
<td>Count</td>
<td>18</td>
</tr>
<tr>
<td>Expected Count</td>
<td>25.8</td>
</tr>
<tr>
<td>Count</td>
<td>24</td>
</tr>
<tr>
<td>Expected Count</td>
<td>25.8</td>
</tr>
<tr>
<td>Count</td>
<td>44</td>
</tr>
<tr>
<td>Expected count</td>
<td>25.8</td>
</tr>
<tr>
<td>Count</td>
<td>103</td>
</tr>
<tr>
<td>Expected count</td>
<td>103</td>
</tr>
</tbody>
</table>

Table 4: Distribution of decision behavior in four situations and within-subjects tests
in each category, multi-collinearity, and auto-correlation separately for each decision situation. We get (at least marginally [5]) significant model fittings as well as high values for Nagelkerke’s R-Square for all four regressions. The fit and Nagelkerke’s R-Square statistics, as well as the significance levels of the explanatory variables are reported in Table 5 for each decision situation separately. Table 5 also indicates whether or not the directions of the effects were as expected. We analyzed the parameter estimates for providing this information [6].

In order to test H1 for each scenario, we report on the results for the main effect variables. In the regressions, a main effect becomes (marginally) significant in the two COG scenarios (p-levels: .089 for the private investment scenario and .025 for the security measures scenario). Investigating significant parameter estimates for the main effect in detail, we are able to find the direction of the effects. For the private investment decision, we find three significant parameter estimates indicating a variety-seeking effect and one indicating a status quo bias. These contradicting effects are not surprising given the results reported in Table 4 where private investment decisions exhibited a relatively “balanced” picture. The strongest effects of the status quo manipulations were exhibited in the security measures situation. However, the significant parameter estimates reveal that only one out of four parameter estimates confirms a flawless status quo bias, whereas the other parameter estimates show a tendency to shift the entire distributions towards the status quo option. This interesting finding will be explored in more detail in the discussion section. Although Table 4 indicates a strong variety-seeking behavior in the SENS scenarios (relative to the COG scenarios), the main effect of the treatment manipulations does not become significant in the separate regressions for these decision situations. To our surprise, we even find two significant parameter estimates indicating a status quo bias in the cooking scenario. Only one significant parameter estimate for the cosmetic product situation indicating variety seeking is consistent with our expectations.

6.2. Testing the Interaction Effects

H2 stated that the more competent a decision maker perceives herself in a COG scenario, the less likely she will choose the status quo option. According to Table 5, a marginally significant interaction effect with competence in the expected direction occurred in the security measures scenario (p-level: .080). Looking at the parameter estimates for this scenario, we find one significant estimate that indeed confirms that a high competence goes along with a variety-seeking behavior. A statistically significant but surprisingly reverse interaction effect was observed in the private investment decision (p-level: .034). A corollary to a significant parameter estimate in this scenario, high competence goes along with a higher preference for treasury bonds when they are the status quo rather than in a neutral scenario. As expected, competence plays no role in the SENS scenarios.

H3 stated that the more risk averse a decision maker is, the more likely she is to choose a status quo option, and the less likely she is to engage in variety seeking. Table 5 reveals significant interaction effects in the cosmetic-buying decision (p-level: .031) and in the security measures choice (p-level: .035). The moderating impact of individuals’ risk propensity in these two decision situations confirms our predicted direction. In our experiment, risk averse respondents decided significantly more often for a status quo alternative than risk prone participants. In the security measures scenario, one significant parameter estimate supports hypothesis 3 since the alternative ‘30 % for active security measures and 70 % for passive security measures’ is chosen more often when it is the status quo option than in the neutral framing. In the cosmetic scenario we find two significant parameter estimates that prove a higher preference for status quo options with risk averse individuals. In the other two decision situations, namely the cooking scenario and the private investment scenario, risk propensity has no significant moderating influence on individuals’ response behavior.

H4 stated that individuals with a pronounced tendency to seek sensations have a higher tendency to behave in a variety-seeking manner. Looking once again at Table 5, we can confirm hypothesis 4 in the cooking scenario (p-level: .040). In a treatment with a manipulated status quo, high sensation seekers decided more often for a new alternative than for the repetition of a former choice. In this scenario, we furthermore find three significant parameter estimates for the interaction effect between sensation seeking and treatment. When pasta represented the status quo alternative, respondents especially preferred both meat to pasta and fish to pasta. Sensation seeking plays no role in the other three decision situations.

<table>
<thead>
<tr>
<th>Model fitting of the multinomial regression</th>
<th>Buying a cosmetic product</th>
<th>Preparing a main course</th>
<th>Private investment</th>
<th>Police security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nagelkerke’s R-Square</td>
<td>.085</td>
<td>.044</td>
<td>.070</td>
<td>.000</td>
</tr>
<tr>
<td>H1: Variety seeking vs. Status quo bias</td>
<td>.277</td>
<td>.296</td>
<td>.286</td>
<td>.425</td>
</tr>
<tr>
<td>H2: Competence</td>
<td>.381</td>
<td>.237</td>
<td>.089</td>
<td>o [7]; .025</td>
</tr>
<tr>
<td>H3: Risk propensity</td>
<td>.242</td>
<td>.408</td>
<td>.034</td>
<td>+- ; .080</td>
</tr>
<tr>
<td>H4: Sensation seeking</td>
<td>.031</td>
<td>.184</td>
<td>.200</td>
<td>+- ; .035</td>
</tr>
<tr>
<td></td>
<td>.936</td>
<td>+- ; .040</td>
<td>+- ; 1.11</td>
<td>.242</td>
</tr>
</tbody>
</table>

Table 5: Summarizing all results; two-sided significance levels are based on likelihood-ratio tests; “+” means that the direction of the effect confirms our hypothesis, “-” means that the direction of the effect is contrary to our hypothesis, “o” implies a mixed evidence, bold numbers indicate at least marginally significant effects.

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7. Discussion, Limitations, and Further Research

Our experimental study demonstrates the existence of effects of past decisions on current decisions, and the dependence of their direction and strength on situation and person. Our findings do offer partial support for our theory-based hypotheses with COG scenarios exhibiting a somewhat larger basic tendency toward status quo effects than SENS scenarios in a direct comparison, and individuals’ characteristics such as risk propensity, sensation seeking, and competence being moderators of the relative strength of status quo effects versus variety seeking in some of the scenarios. However, the set of our findings in their entirety is not fully supportive of our considerations as a general theory of the emergence of status quo bias, variety seeking, and interaction effects. While our study does not provide enough experimental evidence to develop a complete, modified theoretical framework that is able to account for all previously unexpected effects, detailed situation-specific analyses are helpful to put together parts of the puzzle and to define avenues for further research.

Behavior in the security measures and in the private investment scenarios turns out to be especially challenging. As already reported, only one out of four significant parameter estimates in the security measures scenario confirmed a standard status quo bias, whereas three indicated a shift of the entire distribution toward the extreme status quo alternatives. Table 6 helps to clarify what happened.

The neutral treatment exhibits non-manipulated preferences. Here, ‘30 % for active security and 70 % for passive security measures’ was the most popular alternative. When this already popular alternative also becomes the status quo, the standard status quo effect occurs: this alternative is chosen more often than in the neutral treatment (by 38 instead of 30 respondents). When the status quo is the other extreme (70 % for active and 30 % for passive measures), we are successful in convincing some decision makers to pick this alternative (6 instead of 3 respondents). However, a more striking effect is observed with the slightly less extreme alternative that is most similar to the respective status quo option (60 % active and 40 % passive measures). 24 instead of 7 individuals selected the alternative ‘60 % for active security and 40 % for passive security measures’. The status quo alternative has an effect comparable with a gravitation point that attracts other masses depending on their distance. This phenomenon may also be understood in a combination of status quo and extremeness aversion biases (Simonson/Tversky 1992). The individuals move toward the status quo option but avoid the extreme at the same time.

The results for the private investment scenario may partially be explained by the same phenomenon. Without observing any obvious status quo bias or variety-seeking effect in Table 4, we receive a marginally significant main effect for the treatment variable in the MLR. The analysis of significant parameter estimates is the first step toward solving this puzzle. Depending on the specific combinations between manipulated status quo and comparison alternatives, either a tendency to a status quo bias or a tendency to variety-seeking behavior can be observed. The MLR obviously reports these effects as significant, but at the aggregate level exhibited in Table 4, they cancel each other out. Table 7 shows that part of what is happening is indeed similar to what could be observed in the police security scenario. Looking at the neutral and status quo 2 treatments, it again seems to be a combination of status quo bias and extremeness aversion effects that takes place. Surprisingly, the other extreme status quo option, treasury bonds, yields almost the same distribution! But given the different status quo, behavior is now consistent with variety seeking. Within the theoretical framework of this contribution, only one explanation seems to be at hand for the effect of the status quo 1 treatment. Although private investments are clearly a non-sensical decision, emotions may still play a – somewhat limited – role. If this were the case, one could argue that treasury bonds are the ‘least exciting’ alternative because usually not much ‘happens’ with this kind of investment (the main reason why many people buy them). If they are already the status quo – why not try something new?

Although the SENS scenarios were more on the variety seeking side than the COG scenarios in a direct compari-

![Table 6](https://example.com/table6.png)

<table>
<thead>
<tr>
<th>Security measures for police men</th>
<th>Neutral treatment</th>
<th>Status quo 1 (30 % active / 70 % passive)</th>
<th>Status quo 2 (70 % active / 30 % passive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 % active / 70 % passive</td>
<td>30</td>
<td>38</td>
<td>14</td>
</tr>
<tr>
<td>50 % active / 50 % passive</td>
<td>20</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>60 % active / 40 % passive</td>
<td>7</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>70 % active / 30 % passive</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

![Table 7](https://example.com/table7.png)

<table>
<thead>
<tr>
<th>Private investment decision</th>
<th>Neutral treatment</th>
<th>Status quo 1 (Treasury bonds)</th>
<th>Status quo 2 (High-risk company)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-risk company</td>
<td>19</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Moderate-risk company</td>
<td>13</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>High-risk company</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>
son, we do not receive significant results for the treatment effect in the regressions. Even though the model fitting of the MLR is significant in both decision situations, no clear evidence for variety-seeking behavior or status quo bias can be found in the separate analyses of the SENS scenarios. However, both scenarios were basically gift giving situations. As Belk (1979) states, when consumers make gifts, they are giving not only the physical product, but also a symbolic message with it [9]. In a gift-giving situation, a decision maker faces a social risk when the present is wrong or embarrassing. This clearly applies to a situation where a meal is prepared for guests as well as for a situation where cosmetics are bought as a present. Both are sensual scenarios in which we would expect variety-seeking behavior, but in a decision situation involving a social risk, a status quo bias would not be a surprise. If indeed both status quo and variety-seeking effects play a role, they may cancel out.

Some of the interaction effects are even more puzzling. Continuing with hypothesis 2, the influence of competence in the private investment scenario is contrary to our predictions. Although the fact that more competent individuals decided more often for a status quo alternative than incompetent subjects requires further discussion, we would like to offer the following tentative explanation for this phenomenon. As the two extreme alternatives, the alternatives with the lowest and the highest risk, respectively, were used as the status quo options, the decision against the status quo was at the same time a choice for a moderate risk-return combination. Individuals with a low competence regarding private investments may have been in a conflict. They may have tended to a moderate choice, partially because of regret aversion. If they had picked the low risk alternative, they may have regretted the low return later, and if they had picked the high risk alternative, they may have regretted their choice after a major loss. This explanation goes along with Bell (1982) and Paterson/Diekmann (1988). A competent individual may not have been in this conflict and, ironically, may have fallen prey to the status quo manipulation more easily.

The third hypothesis we tested in our experimental study regards risk propensity as a moderator variable of status quo bias and variety-seeking behavior. The interaction effect between treatment and risk propensity occurred as expected and became our most straightforward finding. Out of four decision situations risk propensity became clearly significant in two of them, and the results also supported the expected direction in both cases. Summing up, in many decision situations risk aversion decision makers may be less apt to abandon the status quo alternative.

As stated in hypothesis 4, we found a significant relationship between sensation seeking and a variety-seeking behavior in one of the four decisions, namely in the cooking scenario. Furthermore, in the private investment scenario this effect approaches significance at a marginal level. In both decision situations behavior was consistent with our hypothesis stating that a tendency for sensation seeking goes along with a tendency for variety-seeking behavior. As the decision for a cosmetic product was mainly driven by risk propensity, a possible influence of the sensation seeking scale may have been overruled. Moreover, this scenario is a gift-giving situation where the relevance of sensual stimulation decreases as the product will not be consumed by the decision maker herself.

Summing up, most findings that are unsupportive of our theory may be explained by the following phenomena that open the field for further research. We have evidence that a status quo bias may only be understood in conjunction with extremeness aversion and that a variety-seeking effect may not play out in gift-giving situations even with highly sensual products. The first phenomenon may be analyzed in further experiments where the extremeness of the status quo alternatives is purposely manipulated. The second phenomenon can be analyzed via a comparison of decisions with the same products but compared between gift-giving and regular buying situations. Although we do get some expected and some unexpected but nevertheless interesting interaction effects between the individual-specific moderators and status quo bias as well as variety seeking, the only relatively stable effect is with risk propensity. The latter finding is important and new to descriptive decision theory. Further research is necessary to find out the pervasiveness of risk propensity for the strength of the status quo bias. Further research may also try to find out situational determinants for the relevance of sensation-seeking tendencies and competence. Since we analyzed decision situations with a fixed combination of potential effects on variety seeking and status quo bias, the next step in research should analyze scenarios using other combinations such as sensual, high-stakes decisions, etc.

A potential limitation of this study is that the experiment was about hypothetical decisions, i.e. the decisions had no (monetary) consequences. In the terminology of experimental economics (e.g., Smith 1976), our experiment was not incentive compatible. Four aspects were relevant for our decision against an incentive-compatible experiment:

1. Incentive-compatible experimentation may be viewed as more or less important, depending on the type of research question (Schade 2005). An example for a set of research questions where incentive-compatible experimentation is especially important is strategic interaction (competition, coordination, etc.). In the simple selection tasks respondents were facing in our study, however, we felt that incentive compatibility would not have changed much.

2. The status quo bias has already been demonstrated not only to occur in questionnaires but also in reality. Samuelson/Zeckhauser (1988) refer to decisions about health plans and retirement funds. Hartman/Doane/Woo (1991) studied the behavior of electric power consumers, and Hershey et al. (1990) investi-
gated the influence of a legislative framing manipulation toward types of automobile insurance in two US states. All these studies are characterized by a status quo bias occurring.

3. Our study replicated and modified the study of Samuelson/Zeckhauser (1988) with the intention to be close enough to be comparable. These authors also conducted a questionnaire experiment.

4. We wanted to deal with vivid decision situations. The cooking and police equipment scenarios are difficult to implement in an incentive-compatible laboratory experiment.

Reasons one, two, and four are also responsible for why we judge our experiment as externally valid. Incentive-compatible studies on the effects of manipulated status quo alternatives would probably deal with less realistic choices but would be complementary and important.

8. Marketing Implications

In principle, becoming aware of moderator variables of the status quo bias and variety-seeking behavior should be of interest for the marketing of innovations as well as brand and customer relationship management. Whether firms should encourage consumers to switch brands using their drive toward variety or to stay with the same product depends on the competitive position of the firm. If the firm is established in a market or even a market leader, it may want to try to encourage consumers to retain the status quo choice. This could perhaps be done by using advertisement that acts as a reminder of the brand or product.

The opposite marketing strategy, i.e. to encourage variety seeking, should be applied when a product is an innovation and/or if the brand is new. Especially weak brands benefit from a variety-seeking tendency (Feinberg/Kahn/ McAllister 1992). A successful strategy could emphasize a new or different taste and could be accompanied by free samples and special deals. Thus, consumers could try new products and get a wider experience. Given our findings, we expect innovating firms to have an easier task to convince customers to try something new in a sensual, low stakes, and high purchase frequency product category, whereas firms may have a hard time with cognitive, high stakes, and low purchase frequency products. Knowing this may, e.g., become a valuable part of the communication planning and budgeting process.

As stated by Samuelson/Zeckhauser (1988), the status quo bias does not only have implications for marketing. The impact of this phenomenon goes much further. E.g., fundraisers may use the status quo bias in order to maximize revenues. Once a continuous year-by-year donation is established, it becomes the status quo and will not be changed so easily. Therefore an emphasis on donation frequency rather than on size seems to be more effective. Back to marketing, another application of the status quo bias is the trial purchase without any obligation (Thaler 1980). That the purchased item may be returned for the full refund appears to be a “no lose” proposition to the buyer. But for the duration of the purchase, consumers stop searching for better alternatives while the psychological investment in the purchased item increases.

Although marketers cannot influence the sensation-seeking score and the individuals’ risk propensity, these variables may be important for customer segmentation. Given the result that risk-averse consumers more often retain a status quo option, brand policy and customer relationship management should concentrate on these risk-averse individuals if possible. With private investments, the consumers’ knowledge and hence their objective as well as perceived competence may be increased via all sorts of communication in order to avoid inflexibility and potentially inefficient decisions for status quo options.

Sensual versus cognitive products, high-stakes versus low-stakes products, and high versus low purchase frequency goods; these are already well-known categories. One new insight from our study is that these dimensions might have a strong impact on the tendency to repurchase a good or to change (for the purpose of staying or leaving, respectively).

Appendix

Example for a SENS scenario: Preparing a main course for friends (status quo: beef)

For next Saturday, you have invited a couple of new colleagues to your house. You would like to surprise them with a homemade dish. Therefore, you looked into your cookbook and after considering a number of alternatives, only four dishes are appealing to you. Last time you had guests, you prepared beef. What are you going to prepare for next Saturday?

– Beef in sauce Madeira
– Salmon on leek
– Risotto with yellow boletuses
– Pasta Aribiata

Example for a COG scenario: Deciding on policemen’s security equipment (status quo: 70% active security measures and 30% passive security measures)

Imagine you are a member of a commission that recommends the assignment of a budget for policemen’s security equipment. The budget for each policeman can be used for active security measures (e.g. guns and riot sticks) and for passive security measures (e.g. safety vests and security helmets). Your recommendation is relevant for young policemen that finish their education this year and will start their professional career. Last year, the commission recommended using 70% for active security measures and 30% for passive security measures. This year one can vote for the following suggestions:

– 70% for active security measures and 30% for passive security measures
– 30% for active security measures and 70% for passive security measures
– 50% for active security measures and 50% for passive security measures
– 60% for active security measures and 40% for passive security measures

Lévesque and Schade’s (2005) method to calculate an individual’s risk propensity based on lottery comparisons

It is assumed that decision makers are rational in the sense of Hammond (1998). His system of axioms contains conditions of ordering, independence, and continuity, and represents the weakest requirements on rationality as compared to other approaches.
Following his findings (Lemma 4.3, p. 159), it is possible to derive a simple lottery comparison method for two lotteries \( L_A = (\{X_{mn} \}, \alpha I_{X_{mn}} + \alpha (X_{mn} - X_{mn}^-), 1 - \beta, X_{mn}^+\) and \( L_B = (\{\alpha X_{mn} \}, \alpha (1 - \beta) I_{\alpha X_{mn}} + \alpha (X_{mn}^+ - X_{mn}^-), 1 - \beta, X_{mn}^-\) where individuals must report a probability \( p_A \) for two given risky outcomes \( X_{mn}^- < X_{mn}^+\), a given parameter \( a \in (0,1)\), and a probability \( p_B \) so that they are indifferent between the lotteries \( L_A \) and \( L_B \). This indifference condition leads to the equation:

\[
p_A \cdot u(X_{mn}^- + \alpha I_{X_{mn}} - X_{mn}^-) + (1 - p_A) \cdot u(X_{mn}^-) = \\
p_B \cdot u(X_{mn}^- + \alpha (1 - \beta) I_{\alpha X_{mn}} - X_{mn}^-) + (1 - p_B) \cdot u(X_{mn}^-)
\]

and for an exponential risk averse utility function \( u(x) = -e^{-\alpha x} \) one has to compute the (unique) solution \( \alpha \) of

\[
\begin{aligned}
-p_A \cdot u(x_{mn}^- + \alpha I_{x_{mn}} - x_{mn}^-) + (1 - p_A) \cdot u(x_{mn}^-) = \\
-p_B \cdot u(x_{mn}^- + \alpha (1 - \beta) I_{\alpha x_{mn}} - x_{mn}^-) + (1 - p_B) \cdot u(x_{mn}^-)
\end{aligned}
\]

Compared to other forms of eliciting risk preferences such as certainty-equivalent-based methods, lottery comparisons are advantageous (McCord/de Neufville 1986) in that no certainty effect distorts the findings since none of the alternatives included in the questionnaire is certain (the certainty effect has already been demonstrated in Allais’ (1953) paradox and has also been treated in prospect theory (Kahneman/Tversky 1979)).

Notes

[1] For our study, we use the definition of moderators in the sense of Baron/Kenny (1986, p. 1173) who state that “in general terms, a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable.”

[2] The two excluded scenarios laptop computers and car insurance as answering behavior in these situations were characterized by a very strong preference for one of the four alternatives leading to an insensitivity to any manipulation.

[3] In the literature, authors like van Trijp/Hoyer/Inman (1996) distinguish between true variety-seeking behavior (i.e. intrinsically motivated) and derived varied behavior (i.e. extrinsically motivated). Helmig (1997) recommends to distinguish between variety-seeking behavior and variation-in-behavior and to reserve the former for the intrinsically motivated part of observed switching behavior. We do not make this distinction. Within our experimental setup, we manipulate the motivational component via different situations. The sensual situations were supposed to induce intrinsic motivation, and the cognitive scenarios were not expected to do so. Since variation-in-behavior for non-intrinsic reasons could occur in all situations, the differences we find may in fact be attributed to the intrinsic part, at least in direct comparisons between the situations.

[4] Simplifying, risk is used synonymously with probability of occurrence, here.

[5] As it is common in the experimental literature, we label a significance level between 5% and 10% as a marginally significant result.

[6] Given our model specification, the MLR produces a very large number of such parameter estimates. We hence concentrated on the subset of parameter estimates that were at least marginally significant. The tables reporting on parameter estimates, their significance levels, and the interpretation of directions of the significant estimates are available from the authors upon request.

[7] Variety-seeking behavior was found in three out of four significant parameter estimates. A status quo bias can be confirmed for one significant parameter estimate.

[8] A status quo bias occurring was clearly confirmed in one out of four significant parameter estimates and a behavior comparable with a status quo bias, i.e. respondents chose an alternative similar to the status quo, occurred with two other significant estimates.

[9] Consequently, consumers need more time choosing products for gifts than when selecting products for themselves (Bek 1979).

References


