



Are entrepreneurs' decisions more biased? An experimental investigation of the susceptibility to status quo bias

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Abstract

Entrepreneurship research has demonstrated that entrepreneurs are more susceptible to certain cognitive biases than are selected other individuals. We investigate whether this finding holds for the status quo bias not yet investigated in the entrepreneurship literature. The status quo bias is defined as the tendency to select a previously chosen alternative disproportionately often. We compare entrepreneurs' decisions with those of students and bankers in an experimental study. We find that entrepreneurs are as affected by the status quo as students but less affected than bankers. Accounting for differences in experience and types of decision scenarios, we have indirect evidence for a consistency of entrepreneurs' decisions with what would be expected from a stereotypical Schumpeterian entrepreneur: being more open to new options than other individuals are. However, since entrepreneurs are frequently influenced by the status quo, we discuss the pros and cons of such behavior.

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1. Executive summary

Studies on decision making have repeatedly demonstrated that entrepreneurs make extensive use of simplifying heuristics and thus often exhibit cognitive biases. Two of these studies have shown that entrepreneurs are more affected by certain cognitive

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biases than other individuals (Busenitz and Barney, 1997; Parlich and Bagby, 1995). The findings are consistent with econometric studies demonstrating that entrepreneurship is an investment inferior to capital market investments if one only looks at monetary revenues and risks (Moskowitz and Vissing-Jørgensen, 2002; Hamilton, 2000).

The objective of our study is to examine whether the empirical finding that entrepreneurs are more biased than other individuals is generally valid. In fact, we purposely look for counterevidence. Entrepreneurs are often associated with the Schumpeterian innovator implying an openness to new options. Therefore, the well-known status quo bias, i.e. an individual's tendency to repeat a previous choice, is a promising candidate to falsify the statement that entrepreneurs are more biased than others.

In order to measure the strength of a status quo bias in entrepreneurs' decision making and to compare it with the behavior of non-entrepreneurs, we conducted two experimental studies. Altogether, the comparison groups consisted of 427 students and 135 bankers specialized in start-up financing; 240 entrepreneurs participated in our experiments. We controlled for differences in experience by confronting individuals with both business and consumer contexts. In their decisions, participants had to make decisions in scenarios such as buying a digital camera, purchasing an MP3 player, renting new office space, determining the margin in a tender offer, buying business software, and deciding on which new market to enter. Different respondents across all groups of individuals faced different versions of the above scenarios. Whereas the basic features of the scenario descriptions were kept identical, different options were presented as the status quo, except for the neutral version where no status quo existed.

Regarding the different scenarios, a status quo bias was very frequently observed across all groups in the tender scenario and with purchasing a digital camera. With the remaining scenarios, the status quo bias was only observed sometimes. The overall frequency of occurrence of the status quo bias is consistent with previous findings by Samuelson and Zeckhauser (1988). However, the status quo bias appeared to be stronger in consumer than business scenarios. Overall, entrepreneurs are as biased as students but less biased than bankers.

Based on the literature on experience effects, we argue that more experience will most probably lead to a higher susceptibility to the status quo bias because thoughts may become increasingly channeled by past experience (Shepherd et al., 2003). Given the significantly higher level of experience that entrepreneurs have compared to bankers in business contexts in our samples, the 'tie' between bankers and entrepreneurs observed in our business scenarios seems to indicate a higher basic affectedness by the status quo of bankers. This result is underlined by the decisions in the consumer scenarios where differences in experience should not exist and bankers are more biased than entrepreneurs. Thus, we have indirect evidence for the fact that entrepreneurs have more similarities with the stereotypical Schumpeterian entrepreneur than bankers.

Our findings imply that a general rule such as "entrepreneurs are more biased than others" may not hold. Instead, our study generated evidence that group differences

depend on the investigated bias. This opens the field for future research on differences between entrepreneurs and others regarding the affectedness with all those cognitive biases judged as important for decision situations typically faced by entrepreneurs. Further studies may also want to more explicitly control for differences in experience with business decisions by, e.g., comparing nascent entrepreneurs or those who just started their business with non-experienced bankers. They should also compare entrepreneurs' affectedness in biases in different countries. Finally, entrepreneurship researchers may want to analyze the empirical relevance of other characteristics that are ascribed to the stereotypical Schumpeterian entrepreneur such as making decisions in an intuitive manner.

The lessons to be learnt for entrepreneurs depend on the decision situation in focus. With decisions where economic consequences do not differ much between the options, keeping the status quo might not hurt much and could also be time-efficient. On the contrary, even if this is sometimes difficult to accomplish, entrepreneurs should try to steer against their tendency of keeping a status quo where changes in competition or demand, new production technologies, product innovations, etc., are concerned.

2. Introduction

“The essence of the entrepreneur’s function lies in the identification and implementation of new opportunities. ... [For example, the] ... production and implementation of new products or new product qualities ... [and the] ... development of new markets.”¹ Joseph Schumpeter (1928, p. 483).

According to Joseph Schumpeter (1928), entrepreneurs are revolutionary individuals that are responsible for the implementation of innovations in our society. They are the active element that combines present resources in a new manner; they have the abilities to discover new opportunities and to break through routines. Many politicians, researchers, and practitioners share this view of the entrepreneur. However, does it reflect reality? In general, individuals are known to be strongly biased by the status quo, but keeping or repeating previous decisions is a behavior not to be expected of a stereotypical Schumpeterian entrepreneur. The research question that necessarily arises is whether entrepreneurs are *as susceptible* to the status quo bias as other individuals. If this were the case, such a tendency would hamper the speed of adopting innovations by entrepreneurs. Answering this question is exciting because for those types of simplifying heuristics and resulting cognitive biases that have been investigated in entrepreneurship research,² it has been demonstrated that entrepreneurs make extensive

¹ This is a translation of the following original citation in German language: “Im Erkennen und Durchsetzen neuer Möglichkeiten auf wirtschaftlichen Gebiet liegt das Wesen der Unternehmerfunktion. ... [Dazu gehören beispielsweise die] ... Erzeugung und Durchsetzung neuer Produkte oder neuer Qualitäten von Produkten ... [und] die Erschließung neuer Absatzmärkte.”

² A seminal analysis of heuristics was presented by Tversky and Kahneman (1974) where heuristics are defined as simplifying rules of thumb leading to cognitive biases. Forbes (2005) defines cognitive biases as thought processes that involve erroneous inferences or assumptions.

use of heuristics, and that they are heavily biased or *more biased* than others. We are interested in whether this is a general tendency or whether the status quo bias is an exception where entrepreneurs are less biased than others.

A number of studies from entrepreneurship research have direct relevance to our work. Manimala (1992) demonstrated the extensive use of heuristics by entrepreneurs. Entrepreneurs also have been shown to exhibit an overconfidence bias (Olson, 1986; Forbes, 2005; Koellinger et al., 2005) and to be overly optimistic about their own chances of success (Cooper et al., 1988). Busenitz and Lau (1996) summarize all types of cognitive biases exhibited by entrepreneurs as “entrepreneurial cognition.” A closely related stream of entrepreneurship research compares the behavior of entrepreneurs and others (Kaish and Gilad, 1991; Parlich and Bagby, 1995; Busenitz and Barney, 1997). Only two of these studies compare the affectedness by biases and the use of heuristics. Parlich and Bagby (1995) use entrepreneurs and non-entrepreneurs such as bankers, managers, and venture capitalists as comparison groups. They showed that entrepreneurs have the tendency to interpret equivocal business scenarios more optimistically than others do. In their seminal study, Busenitz and Barney (1997) demonstrated that entrepreneurs are more overconfident and use the representativeness bias more frequently than do managers in large organizations. While some heuristics and cognitive biases have been studied in the entrepreneurship literature, we are not aware of any contribution concerning the status quo bias.

Hence, our contribution may be summarized as follows. We fill a gap in the entrepreneurship literature by conducting two experimental³ studies on the status quo bias. The susceptibility to the status quo bias is compared between entrepreneurs, students, and bankers. By comparing consumer with business scenarios, we investigate whether scenario-specific factors play a role. The article is organized as follows. The next section summarizes the literature on the status quo bias. In the subsequent section, we describe the experimental design and the course of our two studies. Thereafter, we statistically analyze the results of the experiments. We continue with a discussion of our empirical findings and their implications for the decision making of entrepreneurs. Our article concludes with a section on limitations and future research.

3. Literature on the status quo bias

The status quo bias has received attention from economic psychology, marketing, and public health literature. This bias describes a behavioral tendency to decide for a status quo option disproportionately often (Samuelson and Zeckhauser, 1988). Instead of considering all available information in the decision making process, people tend to

³ Our studies are experimental regarding the manipulations of the status quo bias. According to the classification proposed by Campbell and Stanley (1963), however, our studies are also quasi-experimental because individuals are not randomly assigned to groups but purposely selected based on their occupation.

rely on what they have chosen before, on what represents the current state, or even what someone else has chosen for them and consequently is the status quo. To our knowledge, Samuelson and Zeckhauser (1988) were the first economists to use an experimental setup in order to test students for a status quo bias occurring in a variety of decision scenarios. They showed a significant status quo bias in 31 out of 54 cases.

The status quo bias is not an isolated phenomenon but related to other solid effects known from behavioral economics: the endowment effect (Thaler, 1980) or the finding that willingness-to-pay (WTP) for a good is systematically lower than willingness-to-accept (WTA) for the same good possessed by an individual (so-called WTP–WTA disparity) (Kahneman et al., 1991). Status quo bias, endowment effect, and WTP–WTA disparity are consistent with reference dependence together with loss aversion according to prospect theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1991).

A status quo bias has been demonstrated in experiments as well as in field studies. Porter and McIntyre (1984) found a status quo bias when investigating why pregnant women prefer the care they receive compared to other methods of care. The researchers argued that patients assume that whatever service was offered had been carefully considered by experts and was therefore likely to be the best for them. In other words, “what is must be best.” In their paper, Porter and McIntyre (1984) conclude that such a behavior results in *aversion to innovations*. Roca et al. (2005) recently demonstrated the ubiquity and strength of the status quo bias in an experimental study. They showed that the status quo bias might even reduce most individuals’ aversion to ambiguity when the ambiguous option is the status quo.

Furthermore, when discussing the external validity of their experimental work, Samuelson and Zeckhauser (1988) report on real-market examples for status quo biased decisions such as those on health plans and retirement funds. Hartman et al. (1991) studied the decision behavior of electric power consumers and found them to be status quo biased. Johnson et al. (1993) experimentally supported the expected influence of status quo manipulations on the choice of an insurance policy. They also report on an interesting “legislative framing manipulation” that took place with automobile insurance in the two U.S. states New Jersey and Pennsylvania. The choice of an insurance policy appeared to be heavily dependent on what used to be the legislative status quo, even after the law was changed. A status quo bias is also observed with organ donation. Here, the legislative conditions in a country are crucial for the willingness to donate. The willingness is low when individuals need to agree with organ donation explicitly (this is the case in the U.S., Germany, Japan, etc.) and it is high when individuals need to refuse the donation of their organs contrary to the legislative default (such legislation is existing in Italy, Austria, Poland, etc.). Given all this evidence, Kahneman et al. (1991, p. 25) state that “(.) we have become convinced that (.) status quo bias (.) [is] both robust and important.”⁴

⁴ In Burmeister and Schade (2005), we argue that there are two conflicting forces resulting in behavioral effects on one dimension. These are the following two disproportional tendencies to deviate from or keep a previous decision: variety seeking and status quo bias. However, for decision scenarios invoking a rather *cognitive* decision process, we expect and find a dominance of the status quo bias. We consider the decisions underlying our current contribution as cognitive and therefore appropriate for a test of a status quo bias.

4. Experimental design

In order to measure the strength of the status quo bias in entrepreneurs' and others' decisions, we conducted two experimental studies that are jointly analyzed below. In the first study, we analyzed differences between *entrepreneurs'* decisions and *students'* decisions. The student respondents stem from the fields of business and economics as well as the humanities and social sciences. Taking into account that different decision behaviors may result from differences in experience and knowledge, we conducted a second study. In this study, we investigated *bankers* responsible for start-up financing and entrepreneurs, since both groups of individuals should have similar experiences and knowledge. In our samples, however, with a mean of approximately 22 years, entrepreneurs had on average more job experience than bankers did (17 years). This difference is statistically significant (Mann–Whitney Test: $p < .01$). We refer to the different subject pools as *groups*. When analyzing gender differences within the group of entrepreneurs, male and female entrepreneurs are referred to as *subgroups*.

In study 1, the status quo bias was investigated in six decision *scenarios* (buying a digital camera, purchasing an MP3 player, renting new office space, determining the margin in a tender offer, buying business software, and deciding on which new market to enter). To reduce the time needed to answer the questionnaire, only three scenarios (determining the margin in a tender offer, buying a digital camera, and deciding on which new market to enter) were used in study 2.

With each scenario, the status quo was experimentally manipulated via a between-subject design. Different respondents across all groups of individuals faced different versions of the scenarios, i.e., *experimental treatments*. With each scenario, in the neutral treatments individuals had to choose from three *options*, “all on an equal footing” (Samuelson and Zeckhauser, 1988). In the three status quo treatments for each scenario, each option occupied the position of the status quo once. The basic features of a scenario were kept identical across all treatments. After randomly receiving a neutral or one of the three status quo treatments, each individual made one choice per scenario. No individual dealt with different treatments from the same scenario. In other words, we tested four different treatments of a decision scenario between subjects: three status quo treatments and one neutral, each assigning a different option or none to the status quo position.

Across the four treatments of a decision scenario, a particular option occupied three possible positions: as a neutral (NEUT) option (in one treatment), as the status quo (SQ) option (in one treatment), or as an alternative to the status quo (ASQ) option (in two treatments). With our experimental design, we followed the lead of the work of Samuelson and Zeckhauser (1988). An example for a neutral and one of the status quo treatments can be found below for the tender offer scenario. For other scenarios, the respective neutral treatment and one example of a status quo treatment are included in Appendix B.

Determining the margin in a tender offer (neutral version)

An international research center has presented the contract for setting up its technical equipment for tender. As an entrepreneur, you would like to take part in the tendering procedure. Therefore, you would like to hand in an offer. The committee responsible for awarding the contracts will favor the company with the most attractive offer. Completing the order (if you get it) will cost your company 100,000 EUR. You are aware that there are numerous competitors who will hand in offers for the same project. From your experiences with other tendering procedures you can derive probabilities for you to be awarded the contract. Which offer are you going to make?

- You submit a proposal at a price of 115,000 EUR. The chances that you will be awarded the contract are around 70%.
- You submit a proposal at a price of 120,000 EUR. The chances that you will be awarded the contract are around 60%.
- You submit a proposal at a price of 125,000 EUR. The chances that you will be awarded the contract are around 50%.

The treatment where 115,000 EUR was the status quo, differs from the neutral treatment by the sentence printed in bold fonts. Note that this sentence was not printed in bold fonts in the original scenario description.

Determining the margin in a tender offer (status quo treatment: 15%)

An international research center has presented the contract for setting up its technical equipment for tender. As an entrepreneur, you would like to take part in the tendering procedure. Therefore, you would like to hand in an offer. The committee responsible for awarding the contracts will favor the company with the most attractive offer. Completing the order (if you get it) will cost your company 100,000 EUR. You are aware that there are numerous competitors who will hand in offers for this same project. From your experiences with other tendering procedures you can derive probabilities for you to be awarded the contract. **For former offers you always calculated a margin of 15 % above your cost.** Which offer will you make?

- You submit a proposal at a price of 115,000 EUR. The chances that you will be awarded the contract are around 70%.
- You submit a proposal at a price of 120,000 EUR. The chances that you will be awarded the contract are around 60%.
- You submit a proposal at a price of 125,000 EUR. The chances that you will be awarded the contract are around 50%.

Altogether, we employed a 4×6 experimental design, with four indicating the number of between-subjects treatments and six representing the number of within-subjects

Table 1
Distribution of respondents across treatments and scenarios (EN – entrepreneurs, STU – students, BAN – bankers)

	Tender offer	Digital camera	Market entry	MP3 player	Software	Office space
Neutral	55 EN	61 EN	58 EN	30 EN	30 EN	30 EN
	108 STU	103 STU	104 STU	104 STU	108 STU	108 STU
	37 BAN	30 BAN	35 BAN			
SQ 1	60 EN	61 EN	58 EN	31 EN	30 EN	31 EN
	105 STU	105 STU	101 STU	104 STU	104 STU	103 STU
	30 BAN	37 BAN	33 BAN			
SQ 2	59 EN	58 EN	60 EN	33 EN	31 EN	32 EN
	108 STU	106 STU	96 STU	101 STU	104 STU	102 STU
	35 BAN	33 BAN	37 BAN			
SQ 3	57 EN	60 EN	58 EN	30 EN	33 EN	30 EN
	106 STU	108 STU	104 STU	109 STU	103 STU	108 STU
	33 BAN	35 BAN	30 BAN			

Differences between the total number of respondents and the figures in the table result from missing values which are excluded from the analysis.

decision scenarios in study 1. In study 2, we used a 4×3 experimental design with three instead of six decision scenarios. Table 1 depicts our experimental design and the respective number of usable responses (non-usable responses are referred to as missing values).

5. Results

5.1. Sample and overview

We compare the behavior of three groups of individuals: 427 students, 240 entrepreneurs (124 from study 1 and 116 from study 2), and 135 bankers. The student sample consists of 297 business and economics students attending an undergraduate marketing course and 130 students in a basic statistical methods course obligatory for students of the humanities and social sciences. All students attended courses at Humboldt-Universität zu Berlin. Entrepreneurs are located in all parts of Germany but with a local focus on the region Berlin/Brandenburg. They stem from a variety of industries such as medicine, biotechnology, and business services. Bank employees are specialized in entrepreneurial finance and all banks are located in Berlin. To accommodate entrepreneurs' and bankers' busy time schedule, they were allowed to answer our questionnaire in their preferred manner (personal interview, via email, or via fax). Although we conducted the two studies sequentially, we analyze and present the results jointly. We merged the data for the three scenarios that were included in both studies (digital camera, tender offer, and market entry).

The presentation of the findings is structured in the following way: First, basic distribution information is provided and analyzed via Chi-squared statistics. Second, we compare the affectedness of different groups by the status quo bias with different choices via binary logistic regressions including interaction effects. Finally, we use the aggregated

Table 2

Relative frequencies and asymptotic significance levels of the Chi-squared statistics for students (Significant p -levels ($p \leq .10$) are indicated by using bold fonts; directions in accordance with a status quo bias: one-sided test; others: two-sided.)

Scenario	Options	SQ	Neutral	ASQ	p -level _{SQ-ASQ}	p -level _{SQ-NEUT}
Tender	15%	68/105=0.65	65/108=0.60	89/214=0.42	< 0.01	0.25
	20%	54/108=0.50	33/108=0.31	66/211=0.31	< 0.01	< 0.01
	25%	26/106=0.25	10/108=0.09	16/213=0.08	< 0.01	< 0.01
Digital camera	A	50/105=0.48	16/103=0.16	33/214=0.15	< 0.01	< 0.01
	B	67/106=0.63	49/103=0.48	65/213=0.31	< 0.01	0.01
	C	57/108=0.53	38/103=0.37	47/211=0.22	< 0.01	0.01
Market entry	Argentina	32/101=0.32	40/104=0.39	54/200=0.27	0.20	0.31
	USA	53/96=0.55	50/104=0.48	107/205=0.52	0.31	0.16
	Belgium	20/104=0.19	14/104=0.14	35/197=0.18	0.38	0.13
MP3 player	Panasonic	62/104=0.60	42/104=0.40	92/210=0.44	< 0.01	< 0.01
	Philips	41/101=0.41	40/104=0.39	51/213=0.24	< 0.01	0.38
	iRiver	38/109=0.35	22/104=0.21	30/205=0.15	< 0.01	0.01
Software	A	71/104=0.68	69/108=0.64	137/207=0.66	0.36	0.25
	B	34/104=0.33	37/108=0.34	59/207=0.29	0.22	0.81
	C	1/103=0.01	2/108=0.02	9/208=0.04	0.11	0.59
Office space	A	14/103=0.14	16/108=0.15	22/210=0.11	0.21	0.80
	B	32/102=0.31	29/108=0.27	56/211=0.27	0.19	0.24
	C	74/108=0.69	63/108=0.58	115/205=0.56	0.02	0.06

distribution information to calculate ANOVAs for main effects and interaction effects over all groups and scenarios.

5.2. Basic frequencies

To verify a status quo bias, we compare the frequency of choice of a status quo option with (1) the frequency of choice of this option in the neutral version (NEUT) and (2) with the option's frequency when it is an alternative to the status quo (ASQ). Samuelson and Zeckhauser (1988) only used the second comparison. We complement their procedure with the first. Since for each option, two comparisons are carried out (SQ vs. ASQ and SQ vs. NEUT) and individuals faced three options for each decision scenario, this procedure results in six Pearson's Chi-squared values for each decision scenario. The one-sided significance levels⁵ indicate whether an option's relative frequency is higher when it is the status quo option rather than (1) appearing in the neutral treatment (first Chi-squared measure) or (2) when it is an alternative to the status quo (second Chi-squared measure).

Tables 2, 3 and 4 show the frequencies and asymptotic significance levels of the Chi-squared statistics for students, entrepreneurs, and bankers. Tables for the subgroups of female and male entrepreneurs can be found in Appendix A. In Table 2, the relative frequencies for the students are presented. For example, the option "115,000 EUR" in the

⁵ A one-sided test is appropriate since the hypothesis is directional: An option is selected more frequently if it is the status quo. The few differences with a reversed direction are tested two-sided.

Table 3

Relative frequencies and asymptotic significance levels of the Chi-squared statistics for entrepreneurs (Significant differences in a direction contrary to a SQB are marked with "n. SQ" in parentheses; significant p -levels ($p \leq .10$) are indicated by using bold fonts; directions in accordance with a status quo bias: one-sided test; others: two-sided.)

Scenario	Options	SQ	Neutral	ASQ	p -level _{SQ-ASQ}	p -level _{SQ-NEUT}
Tender	15%	38/60=0.63	31/55=0.56	40/116=0.35	< 0.01	0.22
	20%	26/59=0.44	15/55=0.27	39/117=0.33	0.08	0.03
	25%	16/57=0.28	9/55=0.16	17/119=0.14	0.01	0.07
Digital camera	A	34/61=0.56	18/61=0.30	26/118=0.22	< 0.01	< 0.01
	B	31/58=0.53	30/61=0.49	42/121=0.35	0.01	0.32
	C	20/60=0.33	13/61=0.21	26/119=0.22	0.05	0.07
Market entry	Argentina	14/58=0.24	13/58=0.22	17/118=0.14	0.06	0.41
	USA	32/60=0.53	34/58=0.59	64/116=0.55	0.82	0.56
	Belgium	15/58=0.26	11/58=0.19	34/118=0.29	0.68	0.19
MP3 player	Panasonic	16/31=0.52	11/30=0.37	30/63=0.48	0.36	0.12
	Philips	9/33=0.27	12/30=0.40	13/61=0.21	0.26	0.29
	iRiver	14/30=0.47	7/30=0.23	12/64=0.19	< 0.01	0.03
Software	A	26/30=0.87	12/30=0.40	39/64=0.61	< 0.01	< 0.01
	B	11/31=0.36	17/30=0.57	16/63=0.25	0.16	0.10 (n. SQ)
	C	2/33=0.06	1/30=0.03	0/61=0.00	0.03	0.31
Office space	A	3/31=0.10	2/30=0.07	10/62=0.16	0.40	0.33
	B	11/32=0.34	7/30=0.23	23/61=0.38	0.75	0.17
	C	14/30=0.47	21/30=0.70	32/63=0.51	0.71	0.07 (n. SQ)

tender scenario is chosen by 65% of the students when it is the status quo option. In the neutral version of this scenario, the option is only chosen by 60% of the respondents. Although the relative frequency in the neutral treatment is lower than in the status quo treatment, the difference is not statistically significant ($p = .25$). However, when comparing the relative frequency that "115,000 EUR" will be chosen between the treatment where "115,000 EUR" is the status quo and the treatments where it is an alternative to the status quo (42%), the difference becomes significant ($p < .01$).

The significance levels for the differences between SQ and ASQ frequencies are reported in Tables 2, 3 and 4. With six scenarios and three options in each, we look at

Table 4

Relative frequencies and asymptotic significance levels of the Chi-squared statistics for bankers (Significant p -levels ($p \leq .10$) are indicated by using bold fonts; directions in accordance with a status quo bias: one-sided test; others: two-sided.)

Scenario	Options	SQ	Neutral	ASQ	p -level _{SQ-ASQ}	p -level _{SQ-NEUT}
Tender	15%	16/30=0.53	14/37=0.38	24/68=0.35	0.05	0.10
	20%	18/35=0.51	17/37=0.46	30/63=0.48	0.36	0.32
	25%	3/33=0.09	6/37=0.16	7/65=0.11	0.80	0.37
Digital camera	A	19/37=0.51	4/30=0.13	4/68=0.06	< 0.01	< 0.01
	B	27/33=0.82	17/30=0.57	23/72=0.32	< 0.01	0.02
	C	21/35=0.60	9/30=0.30	11/70=0.16	< 0.01	0.01
Market entry	Argentina	4/33=0.12	3/35=0.09	13/67=0.19	0.36	0.32
	USA	18/37=0.49	18/35=0.51	27/63=0.43	0.29	0.81
	Belgium	14/30=0.47	14/35=0.40	24/70=0.34	0.12	0.29

18 comparisons for the students and entrepreneurs. With three scenarios and three options in each, we carry out 9 comparisons for bankers and the two subgroups of male and female entrepreneurs.⁶ We find that students are significantly biased toward the status quo in 10 out of 18 cases. Entrepreneurs also exhibit a status quo bias in 10 out of 18 cases. Similarly, bankers fall prey to this bias in 4 out of 9 cases. Analyzing male and female entrepreneurs separately (see Tables A1 and A2 in Appendix A), we find that males are more biased toward the status quo (6 out of 9 cases) than their female peers (2 out of 9 cases). The significance levels for the comparisons between SQ and NEUT frequencies can be found in the last column of Tables 2, 3 and 4 as well as in Tables A1 and A2 in Appendix A, respectively. The SQ-NEUT comparisons exhibit the same basic structure of findings as the SQ-ASQ comparisons. However, for entrepreneurs, students, and the subgroup of male entrepreneurs, less differences are significant, for bankers and female entrepreneurs the number of significant differences is the same.

5.3. Pairwise group comparisons

The separate analysis of status quo effects with different scenarios, options, and groups provided detailed information on the degree of affectedness of different groups in different scenarios and also on the ubiquity of the status quo bias. However, an answer to the research question whether entrepreneurs are more biased than others requires a look at interaction effects between group and treatment in logistic regressions.

For each scenario and option, we therefore compare the affectedness of (sub-)groups by the status quo pairwise, i.e., entrepreneurs vs. students, entrepreneurs vs. bankers, and male entrepreneurs vs. female entrepreneurs. For each comparison, we carried out a binary logistic regression. We concentrate on the SQ-ASQ comparison, leaving out subjects in the NEUT treatment since the SQ-ASQ results appeared to be stronger and easier to interpret than the SQ-NEUT comparisons. Specifically, we defined for each individual choice whether it was the “status quo option” or one of the “other options”. This forms the binary dependent variable in the regression model. Group, treatment, and interaction between group and treatment enter the model as independent variables. The interaction effect is decisive for the group comparisons aimed at in this article. Since we are interested in comparing the decisions of entrepreneurs with the behavior of students and of bankers, we disregard the comparison between students and bankers.

For each scenario, Table 5 displays the exponential regression parameters for the main effect of the treatment variable, the interaction effect between treatment and group, and the corresponding significance levels.⁷ For example, for the first tender offer analysis, an exponential coefficient of 3.28 for the main effect of the treatment implies that students and entrepreneurs decide for the “115,000 EUR” option 3.28 times more often than for “120,000 EUR” or “125,000 EUR” when “115,000 EUR” is the status quo. Please be reminded that respondents in the NEUT treatment are excluded. The parameter 3.28 is highly significant ($p < .01$). The cell below shows the more important regression parameter

⁶ Concentrating on three scenarios enabled us to compare male and female entrepreneurs based on both studies.

⁷ Although the group variable entered the analysis as a main effect, the results are not important for our research question and thus not reported. This information is available from the authors upon request.

Table 5
Pairwise comparison of affectedness by the status quo of different groups – separately for the scenarios and options

		Tender			Digital camera			Market entry			MP3 player			Software			Office space		
		15%	20%	25%	A	B	C	spa	eng	fre	Pan	Phi	iRi	A	B	C	A	B	C
Students and/vs. entrepreneurs	Main effect	3.28	1.58	2.34	4.46	2.16	1.79	1.89	0.93	0.86	1.17	1.39	3.79	4.17	1.62	n.a. ^a	0.56	0.87	0.85
	Treatment	(< 0.01)	(0.17)	(0.03)	(< 0.01)	(0.02)	(0.10)	(0.12)	(0.82)	(0.68)	(0.72)	(0.52)	(0.01)	(0.02)	(0.31)	n.a. ^a	(0.40)	(0.75)	(0.71)
	Interaction effect	0.79	1.39	1.71	1.12	1.81	2.18	0.66	1.22	1.28	1.61	1.57	0.82	0.26	0.75	n.a. ^a	2.41	1.46	2.01
Entrepreneurs and/vs. bankers	Main effect	2.10	1.17	0.83	16.89	9.59	8.05	0.57	1.26	1.68	n.a.			n.a.		n.a.			
	Treatment	(0.10)	(0.72)	(0.80)	(< 0.01)	(< 0.01)	(< 0.01)	(0.37)	(0.57)	(0.24)									
	Interaction effect	1.57	1.35	2.83	0.26	0.23	0.22	3.30	0.74	0.51									
Female entrepreneurs and/vs. male entrepreneurs	Main effect	5.02	1.72	2.67	3.48	2.5	1.79	1.72	0.75	0.69	n.a.		n.a.			n.a.			
	Treatment	(< 0.01)	(0.16)	(0.02)	(< 0.01)	(0.01)	(0.17)	(0.24)	(0.42)	(0.38)									
	Interaction effect	0.14	0.58	0.37	8.20	0.68	0.87	2.79	3.01	2.58									
		(0.02)	(0.48)	(0.44)	(0.08)	(0.67)	(0.86)	(0.33)	(0.16)	(0.28)									

Binary logistic regressions: exponential coefficients and significance levels for the main effect of the treatment and the interaction effect between treatment and group (SQ vs. ASQ comparison).

^a Regressions not carried out because of too few subjects selecting option C.

Table 6
Comparing total affectedness by the status quo of entrepreneurs, bankers, and students (ANOVA results)

Source	Summed squares	df	Mean of squares	F	p-level
Corrected model	0.741	14	0.053	8.097	<0.01
Constant term	0.655	1	0.655	100.245	<0.01
Scenario	0.533	5	0.107	16.307	<0.01
Group	0.008	2	0.004	0.650	0.529
Scenario × Group	0.163	7	0.023	3.567	<0.01
Error	0.196	30	0.007		
Total	1.680	45			
Total corrected variance	0.937	44			

Analysis of variance with difference between aggregated relative frequency of SQ and ASQ as dependent and group (entrepreneurs, students, and bankers) as well as scenarios as independent variables (corrected $R^2=0.693$).

of the interaction effect. An exponential coefficient of .79 implies that students chose “115,000 EUR” relatively less frequently than entrepreneurs when “115,000 EUR” rather than “120,000 EUR” or “125,000 EUR” is the status quo. This means that entrepreneurs exhibit a stronger status quo bias, here. However, the subtle difference in groups’ affectedness is not large enough; in this case the interaction effect between group and treatment is not significant ($p=.56$).

According to Table 5, the main effects of the treatment variables confirm the results from the frequency distributions in Section 5.2 and confirms the ubiquity of the status quo bias. Table 5 reports on seven statistically significant interaction parameters but only the comparison between entrepreneurs and bankers delivers a consistent picture. With the digital camera scenario, all three significant cases demonstrate that entrepreneurs are less status quo biased than bankers: The significant exponential interaction parameters are all smaller than one. Comparing students with entrepreneurs results in two significant interaction parameters, however, that point in two different directions. The same occurs when comparing male and female entrepreneurs. Hence, no clear differences in affectedness by the status quo can be derived from the latter two comparisons.

5.4. Aggregate analyses

The statistical analyses that are reported in the two previous subsections (Sections 5.2 and 5.3) provided information separately for scenarios and options. To get information on the overall affectedness of the different groups of individuals, we also carried out an analysis of variance (ANOVA) on the aggregated distribution data. This procedure measures the influence of the two factors: group and scenario, on a (now) metric-dependent variable. Samuelson and Zeckhauser (1988) have used a similar procedure. However, unlike these authors, we define the dependent variable as the difference between the frequency of an option when it is the status quo and when it is an alternative to the status quo (SQ-ASQ; we leave out choices in the neutral treatments).⁸ Table 6 shows the

⁸ Using the difference between the SQ and NEUT frequencies of an option as the dependent variable in an ANOVA did not lead to any straightforward findings. Therefore they will not be dealt with in this article but are available from the authors upon request.

Table 7
Comparing total affectedness by the status quo of entrepreneurs, bankers, and students (Bonferroni's results)

(I) group	(J) group	Mean difference (I–J)	Standard errors	Significance	90% confidence interval	
					Lower level	Upper level
Students	Entrepreneurs	0.0175	0.02694	1.00	–0.0426	0.0776
	Bankers	–0.0677	0.03300	0.15	–0.1413	0.0059
Entrepreneurs	Students	–0.0175	0.02694	1.00	–0.0776	0.0426
	Bankers	–0.0852	0.03300	0.05	–0.1558	–0.0116
Bankers	Students	0.0677	0.03300	0.15	–0.0059	0.1413
	entrepreneurs	0.0852	0.03300	0.05	0.0116	0.1588

Bonferroni's post-hoc test for the ANOVA reported in Table 6 (controlling for multiple pairwise comparisons).

total affectedness by the status quo of entrepreneurs, students, and bankers based on an ANOVA with groups and scenarios as independent variables. The analysis of variance (ANOVA) confirms a significant scenario effect ($p < .01$) and a significant interaction effect between group and scenario ($p < .01$). The interaction effect indicates that groups are affected by the status quo to a different extent in different scenarios. The main effect indicates that the relative affectedness differs between scenarios. With .69, the corrected R^2 value is very high.⁹ Bonferroni's post-hoc tests verify the significance of pairwise group comparisons regarding the affectedness by the status quo.¹⁰ Table 7 reports on group differences based on status quo effects in all scenarios and basically confirms the tendencies from the two previous analyses. Whereas students do not differ from the other groups, entrepreneurs are less affected by the status quo than bankers ($p = .05$).

Analyzing consumer decisions separately, both main effects, scenario ($p = .03$) and group ($p = .04$), become significant. The post-hoc test reveals that entrepreneurs differ from bankers ($p < .01$). Again, bankers exhibit a stronger status quo bias than entrepreneurs.¹¹ Considering only business decisions, the main effect of the scenario variable ($p = .01$) and the interaction effect between scenario and group ($p = .04$) are statistically significant. The latter indicates the large difference of relative affectedness by status quo effects of different groups in different scenarios. However, there is no statistically significant general difference in affectedness between groups.

Comparing the affectedness by the status quo between male and female entrepreneurs for all those scenarios where we have data from studies 1 and 2 (tender, digital camera, and market entry), we find that the interaction effect between group and scenario becomes statistically significant ($p = .02$). However, there is no general difference in the affectedness by the status quo between male and female entrepreneurs.

⁹ The large R^2 value partially results from the aggregation of data eliminating errors and idiosyncrasies in individuals' decision making.

¹⁰ The Bonferroni test is a post-hoc test that corrects for multiple pairwise comparisons.

¹¹ Also, the difference between bankers and students is statistically significant ($p = .01$). Bankers are more biased than students.

6. Discussion and implications

Entrepreneurs are less biased toward the status quo than bankers and they do not differ significantly from students. A separate look at business and consumer scenarios reveals that the difference between entrepreneurs and bankers stems from decisions in the consumer scenarios. How can these findings be interpreted and what are the answers to our two research questions on the general affectedness of entrepreneurs by biases and the similarities of entrepreneurs with stereotypical Schumpeterian entrepreneurs?

The key to interpreting our findings are the effects of experience. According to Shepherd et al.'s (2003) study and extensive literature overview, "experience is a two-edged sword" (p. 382). More specifically and expanding on Shepherd et al.'s (2003) argument, one should discriminate between two opposed effects of experience. The obvious effect of experience is increased knowledge. An individual accumulates knowledge via repeated decision making in related contexts and develops a field of expertise. The other effect of experience is described by Shepherd et al. (2003, p. 383) in the following way: Experienced individuals' "thoughts may tend to become increasingly channeled by their past experience." This tendency would imply that the more experienced a decision maker is, the more influenced she is by the status quo.

From our perspective, the effect of experience on the status quo bias is *unidirectional*. When the status quo bias is defined and investigated in the standard setup as in Samuelson and Zeckhauser's (1988) and in our study, there is no room for a systematic effect of increased knowledge. Contrary to the decision scenarios analyzed by Shepherd et al. (2003) where knowledge is central for the measured *performance* of venture capitalists, choices of certain options may not be ranked according to performance in any of our scenarios. Since there is no 'better' or 'worse' due to more or less knowledge, choices only reflect individuals' preferences. But if experience has a channeling effect on thoughts, the decision makers' flexibility may drop and the resulting variability of choices should narrow down. Hence, experience should increase individuals' susceptibility to the status quo bias.

Given the above thoughts and the observed differences in job experience between entrepreneurs and bankers (In our sample, entrepreneurs had more job experience on average than bankers), the fact that bankers are as biased as entrepreneurs in the business scenarios can be interpreted in favor of the existence of a Schumpeterian entrepreneur. In other words, if entrepreneurs were as 'inexperienced' as bankers, the affectedness by the status quo bias may have been smaller with entrepreneurs. This argument is underlined by the results in the consumer scenarios. These scenarios were added to the experimental design to eliminate potential effects of differences in job experience. In the consumer scenarios, the bankers were significantly more affected by the status quo than entrepreneurs. Hence, we have evidence that entrepreneurs are generally less affected by the status quo than bankers, i.e., entrepreneurs are more 'Schumpeterian'. The fact that entrepreneurs are only as biased as students, the latter probably being less or at most equally experienced in all kinds of analyzed decisions (perhaps with the exception of the MP3 player more used among students than entrepreneurs and bankers), strengthens this interpretation. Finally, our findings definitely do not support a general rule such as "entrepreneurs are more biased than others."

Entrepreneurs are not more biased than students and bankers, but many of their choices are still heavily affected by the status quo. What can entrepreneurs learn from this? Is this ‘good’ or ‘bad’? Are they supposed to steer against the status quo bias – assuming that this is always feasible – and if yes, in all or only in selected situations? The answer depends on how they judge the pros and cons discussed in the following. We start with general thoughts on heuristics, we will then consider general pros and cons of the use of heuristics in entrepreneurs’ decision making, and we continue with a discussion of specific advantages and disadvantages of ‘perpetuating the existing’ – a figural description of a hypothetical heuristic that would lead to a status quo bias.¹²

Individuals use simple heuristics or rules of thumb that are typically adapted to their environment (e.g. Kleinmuntz, 1985; Simon, 1990; Gigerenzer and Goldstein, 1996; Goldstein and Gigerenzer, 1999; Todd, 1999; Dudey and Todd, 2001; Lévesque and Schade, 2005). Dudey and Todd (2001) refer to so-called *ecological rationality* as the “decision mechanisms that are matched (that is, adapted) to the particular structure of information in the environments in which they are applied” (p. 197). These researchers demonstrate that heuristics can be quite useful, given the bounded rationality of real decision makers. Heuristics typically require little information and minimal cognitive effort. This view on heuristics is in contrast with Tversky and Kahneman (1974) who rather concentrate on the mistakes individuals make when applying simple heuristics.

Forbes’ (2005) analysis of the use of heuristic and biases is in line with the ecological rationality hypothesis outlined above. According to Forbes (2005), entrepreneurs use heuristics and biases as a response to certain environmental conditions that are associated with forming a venture such as information overload, high uncertainty, and high time pressure. In their study on entrepreneurs’ and managers’ decision making, Busenitz and Barney (1997, p. 12) also argue that the use of heuristics can lead “to acceptable solutions to problems for individuals in an effective and efficient manner.” However, in a similar way as Tversky and Kahneman (1974) argue for the use of heuristics in general, researchers in entrepreneurship and management also acknowledge that cognitive biases may result in less rational and thus less comprehensive decision making (Barnes, 1984). According to Smith et al. (1988), such a less comprehensive decision making lowers a venture’s performance.

Given this controversial perspective on heuristics and biases, what are the specific advantages and disadvantages of decisions that ‘perpetuate the existing’ and imply a status quo bias? Sometimes, keeping the status quo may be the key to success for an entrepreneur. An example is an individual who buys and manages an old winery and keeps the old fashioned but high-quality production method for red wine. Maintaining the status quo can result in significant time savings; time that would otherwise be needed for the decision process, e.g., for searching information on new options. This tradeoff may be acceptable for less important decisions – where the economic consequences of different options do not differ much. For risk-averse decision makers, keeping the status quo may also be

¹² To the best of our knowledge, there is currently no explicit description of heuristics leading to a status quo bias in the literature. Reference dependence together with loss aversion according to prospect theory (Kahneman and Tversky, 1979) may lead, for instance, to a status quo bias but may not be considered a straightforward heuristic. On the other hand, loss aversion causes many kinds of biases such as extremeness aversion (Simonson and Tversky, 1992; Tversky and Kahneman, 1991) or the endowment effect (Thaler, 1980).

advantageous if uncertainty about the potential gains and losses associated with the non-status quo options is substantial. Disadvantages of keeping the status quo are foregoing potential benefits to change. Examples comprise no reaction – in terms of strategy adjustments – to changes in competition and demand structure, not adopting a new production technology, not firing an old employee and hiring a new, not starting a business relationship with a new supplier, and not eliminating an old product and introducing a new one.

7. Limitations and future research

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.). However, in the simple selection tasks that respondents faced in our study, we felt that incentive compatibility would not have changed much. (2) If non-student decision makers are to be investigated in an experimental study such as entrepreneurs and bankers, the small monetary incentives an experimenter can afford are typically not exciting enough for these individuals. A hypothetical decision may then sometimes be taken more seriously. (3) Our study replicated and modified the study of [Samuelson and Zeckhauser \(1988\)](#) with the intention to be close enough to be comparable. These authors also conducted non-incentive-compatible questionnaire experiments. (4) We wanted to deal with realistic decision scenarios. All our scenarios are difficult to implement in an incentive-compatible experiment. Even so, incentive-compatible experimentation on the status quo bias is a promising avenue for future research that, however, involves the following two main challenges: (a) overcoming the difficulties of implementing such experiments with non-student samples and (b) manipulating the status quo with real objects or within real business decisions.

Whereas previous studies have shown that entrepreneurs are more biased than others are, i.e., for overconfidence, overoptimism, and representativeness biases, our study has demonstrated the contrary for the status quo bias. Hence, group differences seem to be dependent of the bias in focus. The respective previous studies as well as ours led to knowledge about specific biases. In future research, comparisons between groups of individuals have to be carried out systematically for each cognitive bias judged as being of sufficient importance for entrepreneurship.

Another limitation of many previous as well as the current study is that the effect of individuals' experience on affectedness by biases has not systematically been studied. Future experiments may thus want to control more explicitly differences in experience with business decisions by, e.g., comparing start-up entrepreneurs without prior job experience with non-experienced bankers as well as with experienced entrepreneurs and experienced bankers.

Our study only analyzed one plausible characteristic of the decision making of a stereotypical Schumpeterian entrepreneur, openness to new options. Other characteristics of decision making consistent with the picture of the Schumpeterian entrepreneur such as reluctance to invest too much cognitive effort into a highly rational decision should be analyzed and compared between different groups of individuals in future research.

Our findings are based on a sample of German entrepreneurs, bankers, and students. Although we feel that the basic comparisons would also hold with, e.g., the respective U.S. groups, the relevance of country differences may not be underestimated. The Global Entrepreneurship Monitor (GEM) data reveal striking country differences not only in the general level of entrepreneurial activity but also regarding the level of the drivers of entrepreneurial motivation such as overconfidence (Koellinger et al., 2005). A natural step to extend studies of the latter type and to, at the same time, build up on the approach suggested in our current contribution is to design and carry out cross-country experimental comparisons of entrepreneurs' and others' decision making.

Appendix A. Complementary tables

Table A1

Relative frequencies and asymptotic significance levels of the Chi-squared statistics for the subgroup of female entrepreneurs (Significant p -levels ($p \leq .10$) are indicated by using bold fonts; directions in accordance with a status quo bias: one-sided test; others: two-sided.)

Scenario	Options	SQ	Neutral	ASQ	p -level _{SQ-ASQ}	p -level _{SQ-NEUT}
Tender	15%	4/12=0.33	7/11=0.64	10/24=0.42	0.63	0.15
	20%	8/18=0.44	3/11=0.27	8/18=0.44	1.00	0.18
	25%	1/6=0.17	1/11=0.09	5/30=0.17	1.00	0.32
Digital camera	A	8/15=0.53	3/13=0.23	1/26=0.04	< 0.01	0.05
	B	4/7=0.57	6/13=0.46	15/34=0.44	0.27	0.32
	C	7/19=0.37	4/13=0.31	6/22=0.27	0.26	0.36
Market entry	Argentina	3/6=0.50	4/16=0.25	5/29=0.17	0.04	0.13
	USA	9/15=0.60	11/16=0.69	8/20=0.40	0.12	0.61
	Belgium	5/14=0.36	1/16=0.06	5/21=0.24	0.22	0.02

Table A2

Relative frequencies and asymptotic significance levels of the Chi-squared statistics for the subgroup of male entrepreneurs (Significant p -levels ($p \leq .10$) are indicated by using bold fonts; directions in accordance with a status quo bias: one-sided test; others: two-sided.)

Scenario	Options	SQ	Neutral	ASQ	p -levels _{SQ-ASQ}	p -levels _{SQ-NEUT}
Tender	15%	34/48=0.71	24/44=0.55	30/92=0.33	< 0.01	0.05
	20%	18/41=0.44	12/44=0.27	31/99=0.31	0.08	0.05
	25%	15/51=0.29	8/44=0.18	12/89=0.14	0.01	0.10
Digital camera	A	26/46=0.57	15/48=0.31	25/92=0.27	< 0.01	0.01
	B	27/51=0.53	24/48=0.50	27/87=0.31	< 0.01	0.39
	C	13/41=0.32	9/48=0.19	20/97=0.21	0.08	0.08
Market entry	Argentina	11/52=0.21	9/42=0.21	12/89=0.14	0.12	0.97
	USA	23/45=0.51	23/42=0.55	56/96=0.58	0.42	0.73
	Belgium	10/44=0.23	10/42=0.24	29/97=0.30	0.38	0.91

Appendix B. Further decision scenarios

B.1. MP3–Player (neutral treatment)

Since your newly purchased portable CD–MP3–Player fell into the water on your last boat trip, you are planning on buying a new one. Which model do you favor as a replacement?

- You decide in favor of a Panasonic (55 h play time, 69 EUR).
- You decide in favor of a Philips (35 h play time, 49 EUR).
- You decide in favor of an iRiver (70 h play time, 99 EUR).

B.2. MP3–Player (SQ treatment: Panasonic)

Since your newly purchased portable CD–MP3–Player (from Panasonic) fell into the water on your last boat trip, you are planning on buying a new one. Which model do you favor as a replacement?

- You decide in favor of a Panasonic (55 h play time, 69 EUR).
- You decide in favor of a Philips (35 h play time, 49 EUR).
- You decide in favor of an iRiver (70 h play time, 99 EUR).

B.3. Market Entry (neutral treatment)

Imagine yourself the owner of the import–export company “No Boundaries”; Japan is the only foreign market you have operated in so far. Thanks to recent success, you are now able to expand. The following languages are excellently spoken by you or someone in your company: German, Japanese, English, French, Spanish, and Chinese. The market entry in each of the candidate countries is related to different success and risk potentials. The investment needed to expand into any of the candidate countries is the same and you can only afford to enter one single additional market. Each of the following alternatives can be described by two characteristic figures. The first figure stands for the expected mean value of the annual Return on Capital after tax for the next five years (a suitable figure for the profit). The second figure describes the probability of canceling the engagement in the new foreign market prematurely due to enduring losses.

Country	Return on capital (ROC)	Risk of failure	Your decision
Argentina	40%	20%	<input type="checkbox"/>
USA	30%	15%	<input type="checkbox"/>
Belgium	20%	10%	<input type="checkbox"/>

B.4. Market Entry (SQ treatment: English)

Imagine yourself the owner of the import–export company “No Boundaries”; Great Britain is the only foreign market you have operated in so far. Thanks to recent success

you are now able to expand. The following languages are excellently spoken by you or someone in your company: German, Japanese, English, French, Spanish, and Chinese. The market entry in each of the candidate countries is related to different success and risk potentials. The investment needed to expand into any of the candidate countries is the same and you can only afford to enter one single additional market. Each of the following alternatives can be described by two characteristic figures. The first figure stands for the expected mean value of the annual Return on Capital after tax for the next five years (a suitable figure for the profit). The second figure describes the probability of canceling the engagement in the new foreign market prematurely due to enduring losses.

Country	Return on capital (ROC)	Risk of failure	Your decision
Argentina	40%	20%	<input type="checkbox"/>
USA	30%	15%	<input type="checkbox"/>
Belgium	20%	10%	<input type="checkbox"/>

B.5. Digital camera (neutral treatment)

Imagine yourself sitting in a street café in Florence thinking of all the great things you have been lucky enough to experience today. That same second you experience one of the possible dark sides of a holiday trip when you catch a glimpse of a thief vanishing with your camera. You have already planned an evening with your friends when you return home, and you do not want to miss showing the photos you were going to take on tomorrow's sight seeing tour. Therefore, you decide to immediately buy a new camera on the Piazza. What camera are you going to buy?

- Digital camera A: 512 MB memory, 5 mega pixel, price: 499 EUR.
- Digital camera B: 256 MB memory, 3 mega pixel, price: 299 EUR.
- Digital camera C: 256 MB memory, 2 mega pixel, price: 199 EUR.

B.6. Digital camera (status quo treatment: Camera A)

Imagine yourself sitting in a street café in Florence thinking of all the great things you have been lucky enough to experience today. That same second you experience one of the possible dark sides of a holiday trip when you catch a glimpse of a thief vanishing with your camera. You have already planned an evening with your friends when you return home, and you do not want to miss showing the photos you were going to take on tomorrow's sight seeing tour. Therefore, you decide to immediately buy a new camera on the Piazza. Your last photos were taken with digital camera A. What camera are you going to buy?

- Digital camera A: 512 MB memory, 5 mega pixel, price: 499 EUR.
- Digital camera B: 256 MB memory, 3 mega pixel, price: 299 EUR.
- Digital camera C: 256 MB memory, 2 mega pixel, price: 199 EUR.

B.7. Business software (neutral treatment)

Imagine yourself being the owner and manager of Berlin Ltd. which has a market share of 10% with its innovative product. Since Berlin Ltd is not able to meet all the demand for this innovative product, and because it is difficult to quickly acquire more personnel, you have decided to optimize the company's internal workflows. Therefore, you need a business software solution. After some market research you consider three software solutions. Switching from your old software to any of the new solutions implies switching costs which are the same for all three solutions: A, B and C. Which of the following software packages would you purchase?

- You decide in favor of software A. It is relatively expensive but very flexible and will also meet future requirements.
- You decide in favor of software B. It has a medium price and wholly meets all present requirements.
- You decide in favor of software C. It has a relatively low price and meets most present requirements but with a few acceptable flaws.

B.8. Business software (SQ treatment: Software B)

Imagine yourself being the owner and manager of Berlin Ltd. which has a market share of 10% with its innovative product. Since Berlin Ltd is not able to meet all the demand for this innovative product, and because it is difficult to quickly acquire more personnel, you have decided to optimize the company's internal workflows. Therefore, you need a business software solution. After some market research you consider three software solutions. Your company is currently using an older version of software package B, which does not comply with the present requirements anymore. Switching from your old software to any of the new solutions implies switching costs which are the same for three all solutions: A, B, and C. Which of the following software packages would you purchase?

- You decide in favor of software A. It is relatively expensive but very flexible and will also meet future requirements.
- You decide in favor of software B. It has a medium price and wholly meets all present requirements.
- You decide in favor of software C. It has a relatively low price and meets most present requirements but with a few acceptable flaws.

B.9. Office rental (neutral treatment)

Due to a lack of space, you, as the owner of a service company, decide to rent new office space. After having looked at different locations, there are three that could work. The office spaces are located in different areas of the city, have different layouts, and have different rental costs. Which office space will you rent?

- Office accommodation A: average area, average layout, high price.

- Office accommodation B: bad area, very good layout, medium price.
- Office accommodation C: good area, inconvenient layout, good price.

B.10. Office rental (SQ treatment: Medium)

Due to a lack of space, you, as the owner of a service company, decide to rent new office space. After having looked at different locations, there are three that could work. The office spaces are located in different areas of the city, have different layouts, and have different rental costs. Your current offices are located in an average area. Which office space will you rent?

- Office accommodation A: average area, average layout, high price.
- Office accommodation B: bad area, very good layout, medium price.
- Office accommodation C: good area, inconvenient layout, good price.

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