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TAKING THE BROAD PERSPECTIVE: RISKY CHOICES IN REPEATED PROFICIENCY TASKS

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Taking the Broad Perspective: Risky Choices in Repeated Proficiency Tasks

People often face challenging tasks in which they can choose the level of challenge and risk they would like to take on. Whether to take an advanced course in mathematics that has high rewards but also has a high rate of failures or a regular course that has higher success rates but lower rewards? Whether to make for an important dinner the Faberge Egg dessert, one of the most difficult desserts in the French cuisine that will supposedly take the guests' breath away but may also result in a disaster, or bake a simple chocolate cake that never fails but is far less impressive than the Faberge Egg dessert? Because decisions involving skill and challenge play an important role in our lives, it is important to understand the factors that affect these decisions.

Choosing a math course or making a dessert are just two examples of cases where one's preferred levels of challenge and risk are based upon one's estimations of her/his own level of proficiency and the chances of success. In the current research we examine the role of the decision maker's perspective as a determinant of such choices. Our thesis is that when evaluating an option from a broad perspective, as is the case when planning a set of choices or when thinking broadly about one's actions, people tend to choose the less challenging option. In contrast, when evaluating an option from a narrow perspective, as is the case when considering only the immediate consequences of the decision, people tend to choose the more challenging option. To illustrate, we suggest that people are more likely to bake the simple chocolate cake for dessert when they consider all the courses to be served and the Faberge Egg dessert when they focus only on the dessert.

Two factors are likely to generate the effect that we are interested in. First, when people consider a particular problem they tend to adopt the "inside view" (Kahneman & Lovallo, 1993), treating the problem as unique, rather than as an instant of an ensemble of similar problems. This intuitive tendency typically leads to an optimism bias (i.e. overestimating the probability of positive outcomes and underestimating negative ones) and overconfidence in one's ability to successfully solve the problem. Adoption of an "outside view", in which the problems are treated as instances of a broader category generally reduces the optimistic bias, and leads to less risk seeking choices.

A second factor that may contribute to the effect we are interested in is the so called "peanuts effect" – people's tendency to take risks when playing for "peanuts" (Prelec & Loewenstein, 1991; Weber & Chapman, 2005). The idea that risk is scale dependent dates back to Markowitz (1952), who claimed that up to a certain point, people would prefer the riskier option over the safer one. For example, most people would prefer an option that offers a 10% chance of winning $1 to a certain gain of 10 cents. More recently, Harinck et al. (2007) found that people weigh small gains more heavily than commensurate losses. Together these findings suggest that when evaluating an option in isolation, people tend to be risk-seeking, negative outcomes are treated as "peanuts" and positive outcomes are overweighed. By contrast, adopting an "outside view", one is more likely to consider the potential cumulative outcomes of a sequence of choices. This aggregate may exceed the threshold of the subjectively "trifle", leading to risk aversion. This may be particularly relevant when outcomes do not depend solely on chance, but implicate the decision maker's sense of proficiency and bear upon her self-concept.

Some support for this view comes from recent research on the effect of perspective on ethical decisions (Schurr, Ritov, Kareev, Avrahmi, 2012; see chapter 2 of the thesis). This research shows that people's ethicality depends on their adopted perspective - people are more likely to stick to their own ethical standards when they are prompted to adopt a broad perspective over the choices they make than under a narrow perspective. For example, Schurr et al. showed that participants, who could profit by over-stating the amount of solved trivia questions in a trivia game, were less likely to over-state under a wide perspective when prompted to consider the aggregate consequences of their actions. The authors suggest that this occurs mainly for two reasons: First, because under a broad perspective people are more sensitive to possible harms to their self-concept than under a narrow perspective. And second, because a broad perspective raises the salience of unethical behavior by drawing attention to the aggregate of one's dishonest acts (see also Bazerman, Gino, Shu, & Tsay, 2011).

While our main focus is on the effect of perspective on the choices people make, we are also interested in the effect of perspective on satisfaction. We view this aspect of our research as exploratory, and we do not offer a directional hypothesis. On the one hand, a narrow perspective may allow people to focus on the specific options at hand,

and select precisely what makes them happiest. Indeed, substantial body of research shows that isolated evaluations increase satisfaction with one's choices (Brenner, Rottenstreich, & Sood, 1999; Hsee & Leclerc, 1998 Shafir, Simonson, & Tversky, 1993). On the other hand, however, a narrow perspective is known to promote an "inside view" which leads to an optimism bias and overconfidence, which may also lead to disappointment when the outcome falls short of the expected one. Moreover, research on regret and choice-overload suggests that isolated evaluations reduce satisfaction because they often trigger further comparisons with the forgone option (Bell, 1982; Botti & Iyengar, 2004; Botti, Orfali, & Iyengar, 2009; Dhar, 1997; Inbar, Botti, & Hanko, 2011; Iyengar & Lepper, 2000; Luce, 1998; Zeelenberg, 1999)

In summary, the current research examines the effect of one's perspective when choosing the level of a challenging task. We examine whether options that are evaluated under a broad perspective are evaluated differently from the same options that are evaluated under a narrow perspective. Our investigation is focused primarily on participants' choices of challenging options. In addition we examine the effect of perspective on participants' anticipated and actual satisfaction.

Prompting Narrow and Broad Perspectives:

Prior research on the effect of perspective on human decisions has shown that narrow and broad perspectives could be evoked in two ways (Schurr et al. 2012). First, through the type of decision that is made: An aggregate decision, in which individuals decide on a general plan, evokes a different perspective than a repeated ongoing decision. Another way of evoking perspective is through differential priming: the request to estimate and reflect upon one's skills prompts a broader perspective than the request to exercise the same skill (i.e. estimating one's knowledge in geography as opposed to solving 10 specific questions in geography). Using Vallacher and Wegner (1989) Levels of Personal Agency questionnaire, Schurr and colleagues showed that participants who underwent an aggregate-choice procedure (see Chapter 2, Experiment 1, manipulation check) or were primed to adopt a broad perspective scored higher on the abstract scale than participants who underwent a sequential choice procedure or were primed to adopt a narrow perspective (see Chapter 2, Experiment 2, manipulation check).

To test the relationship between perspective choices and satisfaction we evoke broad and narrow perspectives using the same methods used in Schurr et al. (2012). In Experiments 1 and 2 perspectives are evoked through the choice procedure. To evoke a broad perspective we asked participants to make an aggregate choice that includes planning in advance the number of easy and difficult tasks s/he will attempt to complete during the experiment. To evoke a narrow perspective we replace the aggregate-choice procedure with an ongoing choice procedure, in which the participant repetedly chooses between an easy and a difficult task to perform in each trial. In Experiments 3 and 4 the perspective is evoked through priming.

Experiment 1

Experiment 1 was designed to test the effect of perspective, as defined by choice procedure – a sequential, trial-by-trial choice procedure vs. an aggregate choice procedure – on risk taking and satisfaction.

Method

Participants. Eighty students participated in the experiment, having been recruited through ads inviting students to make some "easy money" in a "fun" experiment. Gender was counterbalanced in all the experiments. It produced no significant effects and it is not further discussed.

Procedure. Participants were told that they would play a game of darts in two stages. They were given a dart and written instructions explaining the course of the experiment. In the first, practice stage, all participants were instructed to practice their throwing skills by throwing the dart 20 times, alternating between two targets that differed in size (see Figure 1a). The second, test stage also consisted of 20 throws, but in it participants received NIS 1 (about $.25) each time they hit the large target and NIS 3 each time they hit the small target. During the second stage, participants in the Sequential-Choice condition chose on each trial the target to throw at. Participants in the Aggregate-Choice condition stated in advance the number of times they wished to throw at each target; the order of their throws was then determined by chance, subject to the limits imposed by their overall choice.

Before beginning the test stage (but already knowing the choice procedure) participants answered three questions concerning their anticipated satisfaction (How satisfied do you expect to be in the end of the experiment?) and estimated skill levels (To what extent are you confident you can succeed in the easy/difficult task?). After the test stage the participants answered the following five additional questions on a 7 point scale regarding their actual satisfaction and performance. Q1. How satisfied are you? Q2&3. How many easy/difficult tasks did you manage to solve Q4&5.How satisfied are you with your success in the easy/difficult task.

Each participant was randomly assigned to either the isolated Sequential-Choice or the Aggregate-Choice condition.

Materials. We used one magnetic dart and two blue magnetic boards; we put a white round target (9 cm in diameter) at the center of one board, and a yellow round target (12 cm in diameter) at the center of the other. The boards were hung so that the centers of the targets were 1.60 m above the floor. The distance between participants and the targets was 2.60 m for males and 2.10 m for females (see Figure 1a) to control for the level of performance, as determined by a pretest. The distances were such that on average the probability of hitting the small target was 0.33, and 0.50 for hitting the large target.

Figure 1: The experimental settings of the experiments.

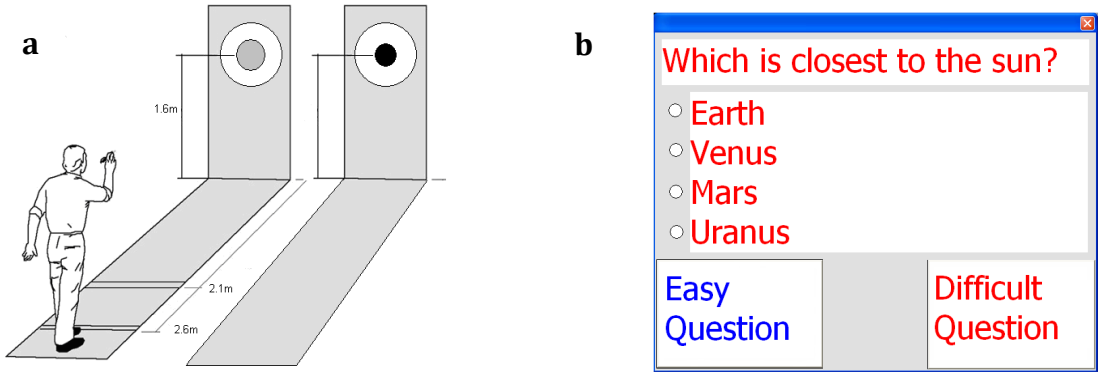

Fig. 2a presents the experimental settings of Experiment 1. Fig. 2b presents a screen shot of the main screen in Experiment 2; participants had to click the buttons to choose the type of question they wanted to solve. A similar task was used in Experiments 3 and 4.

Results and Discussion

First we examined whether the choice procedure affected participants' choices. Figure 3 shows that participants in the Sequential-Choice procedure chose the smaller target in 75% of the throws, whereas participants in the Aggregate-Choice procedure chose it in 57% of the throws. This difference is significant ($t(78)=3.04$, $p<0.01$).

Next, we examined the relationship between choice procedure and participants' satisfaction. Figure 4 shows that mean anticipated satisfaction ratings in the Sequential-Choice procedure were somewhat higher than those in the Aggregate-Choice procedure (Mseq = 5.08 vs. Magg = 4.63), although the difference was not significant ($t(78)=1.27$, $p=0.21$). Mean actual satisfaction ratings in the Sequential-Choice procedure were somewhat lower than those in the Aggregate-Choice procedure (Mseq = 4.38 vs. Magg=4.68). To test the effect of choice procedure on actual satisfaction we used a repeated measures ANOVA model with time of questioning (i.e., anticipated and actual satisfaction ratings) as a within subjects factor and the condition (Sequential-Choice or Aggregate-Choice) as a between subjects factor. The analysis revealed a marginally significant effect of time of measurement ($F(1,78) = 2.91$, $p<0.1$), which suggests that overall actual satisfaction was lower than that anticipated, a non-significant effect of condition ($F<1$), which shows that overall there was no significant difference between the conditions, and a significant interaction between participants' satisfaction ratings and the choice condition ($F(1,78) = 3.88$, $p=0.05$) which results from the fact that participants in the Sequential-Choice procedure failed to anticipate their reaction and ended the experiment less satisfied than they had expected to.

Finally, it should be noted that mean payoff in the Sequential-Choice condition (Mseq = 17.25) was very similar to that in the Aggregate-Choice condition (Magg =17.38, $t(78) = -0.07$, ns); thus, differences in payoffs could not account for the drop in satisfaction observed in the sequential choice procedure.

Figure 3: Mean proportion of choices of the riskier option in Experiments 1-4.

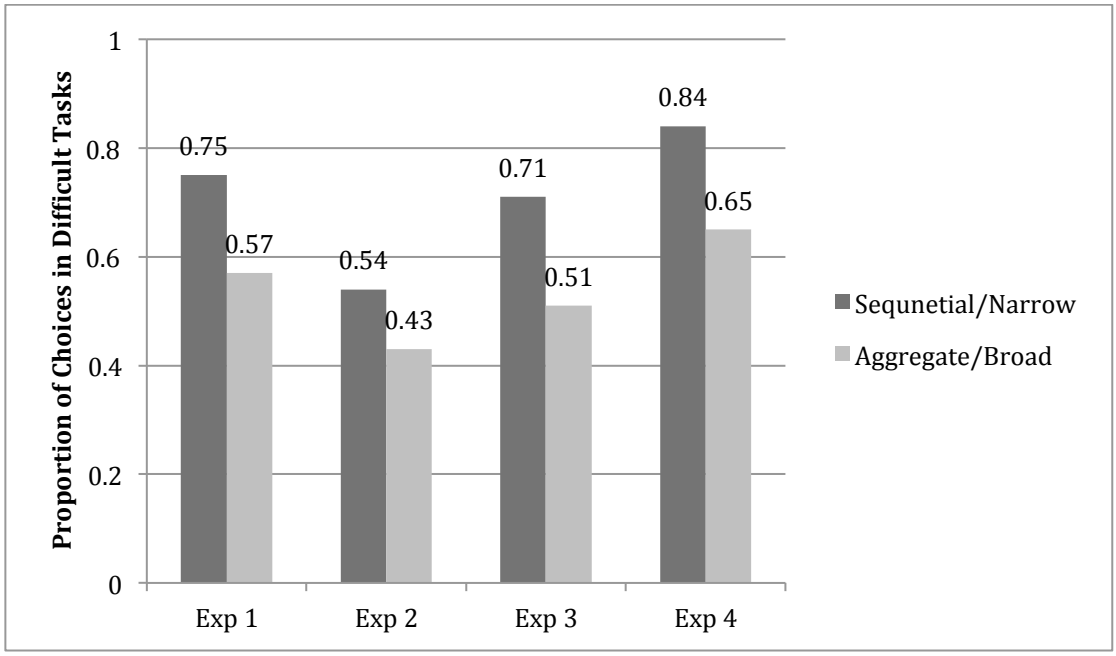

Figure 3: As can be seen participants in the Sequential Choice procedure tended to chosse the riskier option more than participants in the Aggregate Choice procedure.

Figure 4: Mean anticipated and actual satifaction ratings in Experiments 1-3.

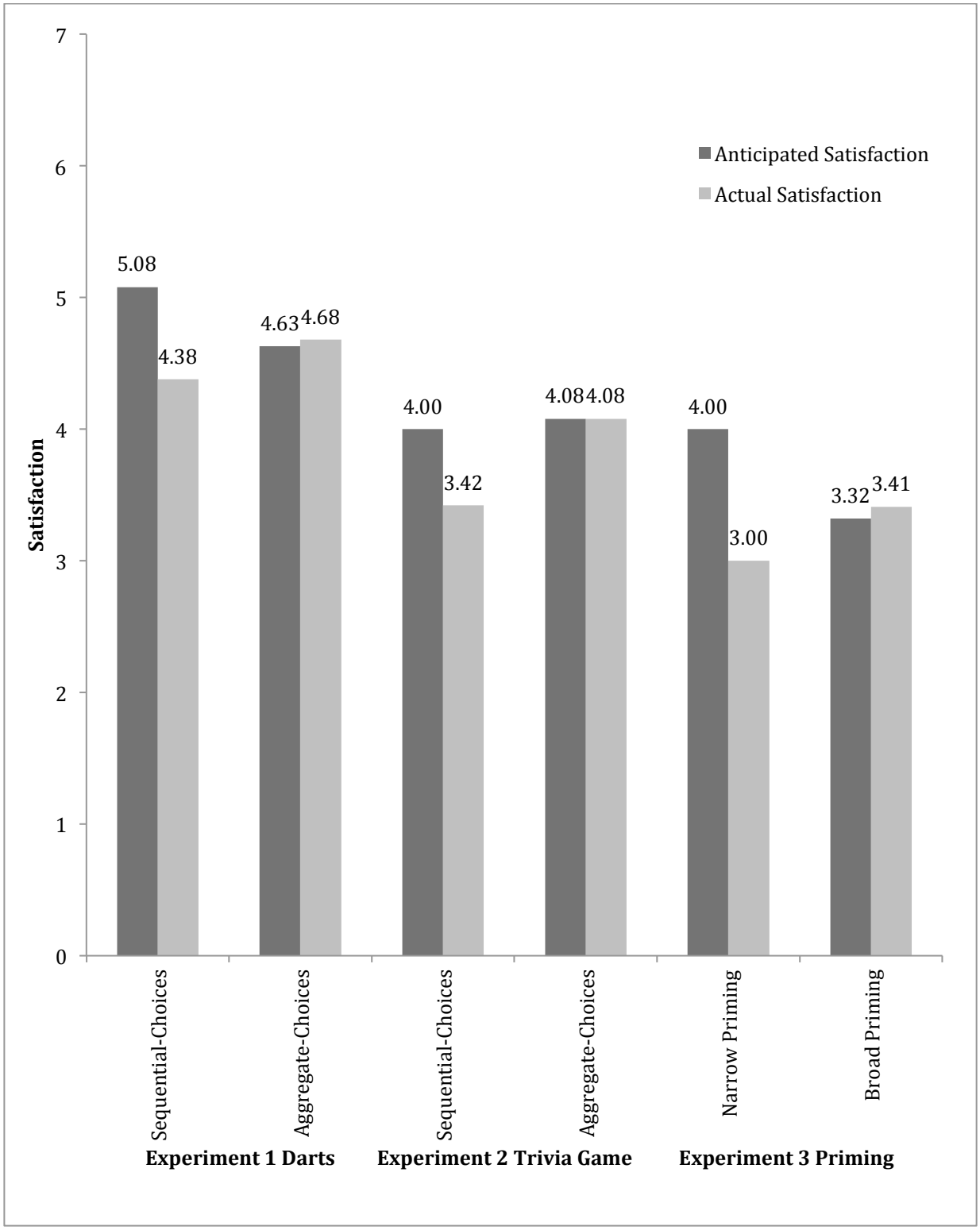

Figure 4: As can be seen, participants in the Sequential Choice procedure ended the experiment less satisfied than they had expected. There was no change in satisfaction in the Aggregate Choice procedure.

Discussion: In summary, the results of Experiment 1 provide initial support for the hypothesis that the adoption of a narrow perspective increases the tendency to choose more challenging and riskier options. The results also show that participants who adopted a narrow perspective ended up being less satisfied than they had expected to be.

Experiment 2

Although the results of Experiment 1 support the hypothesis that narrow and broad perspectives lead to distinct patterns of choices and satisfaction, it remained unclear what exactly drove these effects. It is possible, for example, that the dart task produced an unwarranted sense of improvement, which led participants in the Sequential-Choice procedure to think they were improving and thus drove them to make riskier choices and also affected their satisfaction.

To test this explanation, Experiment 2 involved trivial pursuit questions. While successful performance of the task still required skill (or knowledge), the skill involved was not practiced and could not be expected to improve over the course of the experiment. Thus, if the difference between narrow and broad perspectives observed in Experiment 1 was due to unique characteristics of the task employed there, then changing the task might reduce the effects observed. Alternatively, if the effects were caused by the choice procedures, then the previous pattern of results should be replicated.

Method

One hundred and twenty students participated in Experiment 2 having been recruited through ads inviting students to make some "easy money" in a "fun" experiment. Gender was counterbalanced. The experiment involved a computerized trivial-pursuit-style game. We used a pool of 60 4-alternative general knowledge questions. Following a pretest, the questions were divided into easy and difficult categories. On average, the probability of answering a difficult question correctly was 0.30, whereas that of answering an easy question was 0.60. In the first stage of the game – the practice stage – the participants answered 10 easy and 10 difficult questions, which were presented in

an alternating order. In the second stage of the game participants were instructed to answer 20 questions under one of two choice procedures – Sequential-Choice or Aggregate-Choice. At this stage participants were rewarded with NIS 1 for each correct answer to an easy question, and NIS 3 for each correct answer to a difficult question. Similarly to the procedure used in Experiment 1, during the second stage, participants in the Sequential-Choice condition chose at each trial whether they wanted the next question to be an easy or a difficult one. Participants in the Aggregate-Choice condition stated in advance the number of easy and difficult questions they wished to be presented with in this stage. The order of appearance of easy and difficult questions was determined by chance, subject to the constraint imposed by their overall choice. The questions asked before and after performance of the for-reward stage were identical to the ones asked in Experiment 1.

Results and Discussion

Our first set of analyses focused on the effect of choice procedure on participants' choices. Figure 3 shows that the proportion with which the difficult questions were chosen in the Sequential-Choice procedure (M=0.54) was higher than that in the Aggregate-Choice procedure (M=0.43, $t(118) = 2.59$, $p<0.05$). This result replicates the choice pattern observed in Experiment 1.

The second set of analyses focused on participants' satisfaction. Figure 4 shows that participants' mean anticipated satisfaction in the two conditions were similar (Mseq=4.00 and Magg=4.08 for Sequential-Choice and Aggregate-Choice, respectively, $t(118)=-0.30$, $p=0.76$) and lower in actual satisfaction (Mseq=3.42, and Magg=4.08 for the Sequential-Choice and Aggregate-Choice procedures, respectively). As in Experiment 1, to test the effect of procedure on satisfaction we conducted a repeated measures ANOVA with time of measurement (anticipated and actual satisfaction ratings) as the within-subjects factor and the choice condition (Sequential-Choice or Aggregate-Choice) as a between-subjects factor. The analysis revealed a significant effect of time of measurement ($F(1,118) = 7.05$, $p<0.01$) showing that actual satisfaction ratings differed from their anticipated ones, a non significant difference between the conditions ($F(1,118) = 2.23$, $p <0.14$) and most importantly a significant interaction between the two variables ($F(1,118) = 7.05$, $p<0.01$) suggesting that

participants in the Sequential Choice condition ended the experiment less satisfied than they had expected to be. Finally, as in Experiment 1, mean payoff in the Sequential-Choice condition (Mseq = 16.59) was very similar to that in the Aggregate-Choice condition (Magg =15.84, t(118) = 0.58, ns), and hence could not be the cause of the interaction.

In summary, the results of Experiment 2 replicated the choice and satisfaction patterns of Experiment 1. Here, too, the opportunity to react to each outcome resulted in increased risk taking and reduced satisfaction. Thus, the observed effects of choice procedure could not be simply attributed to the unique characteristics of the darts task.

Experiment 3

The results of the above experiments show that a small modification of the choice procedure results in a marked change in challenge/risk-taking preferences. It could be argued that the observed difference emerged because of Bayesian updating that occurred only in the sequential choice condition because it allowed for contingent choices, whereas the Aggregate-Choice condition did not. In contrast, we suggest that the observed difference is due to different perspectives that are triggered by the choice procedures. The requirement to plan ahead the next set of choices prompts the participants to think about the aggregate consequences of their choices and triggers an integrative broad perspective. In contrast, the requirement to make a repeated ongoing choice between an easy and a difficult task triggers a narrow perspective because the participants are prompted to consider only the current choice. In Experiments 3 and 4 we control for the Bayesian updating explanation by priming participants to adopt a narrow or a broad perspective while using the same sequential-choice procedure used in Experiments 1 and 2.

Method and Procedure

Forty-four students participated in the experiment for performance-based payment. The participants were recruited through ads inviting students to make some "easy money" in a "fun" experiment. There were equal numbers of males and females in each condition.

Experiment 3 employed a shorter version of the trivia game used in the Sequential condition of Experiment 2. The shorter version consisted of just 10 questions in each stage. In this experiment all the questions were composed using the product rating reports of Consumer Reports and were phrased in the same way – "Which of the following products was rated highest (or had the highest price) in the report?" The difference between difficult and easy questions was that the products used for the difficult questions were more closely ranked in the report than the products used for easy questions. We assumed, and the results confirmed, that the closer ranking would result in more difficult questions. As in Experiment 2, all the questions were pretested; the mean probability of correctly answering a difficult question was 0.33 and that of an easy question was 0.66. The participants were informed of the method of determining the difficulty level but did not know the base rates.

The priming manipulation was introduced before the second, real-game stage. All participants received a sheet of paper and read the following: "Sometime in the near future we plan to include additional questions on the fashion industry, food industry and restaurants and fast food chains – topics you will not be asked about in the current experiment. We would appreciate it if you could spare a couple of moments of your time to answer the following questions." Participants under the broad priming manipulation were asked to rate their knowledge of each of these three topics on a 10-point scale ranging from poor knowledge to excellent knowledge. Participants under the narrow priming manipulation were asked to answer three multiple-choice questions in which they had to choose the leaders of these industries. Following the results of Schurr et al. (2012), which showed that this type of priming drives participants who underwent a broad priming manipulation to choose more abstract items in the Action Identification Questionnaire (Vallacher and Wegner 1989), we expected this manipulation to evoke different perspectives because estimating one's own knowledge is a higher, more abstract process than answering specific questions.

Results and Discussion

We first examined the effect of the priming procedure on participants' choices. Figure 3 shows that the proportion with which the difficult questions were chosen in the Narrow-Priming condition (Mnar =0.71) was higher than that in the Broad-Priming

condition (Mbrd=0.51, $t(42) = 2.42$, $p<0.05$) This result replicates the choice pattern observed in Experiments 1 and 2.

Anticipated and Actual Satisfaction Ratings. We compared the predictions made before the participants played the second stage and the satisfaction rating given after it. As can be seen in Figure 4 anticipated and actual satisfaction ratings in the Broad-Priming condition remained roughly the same (Mant = 3.32, Mact = 3.41) whereas the ratings of anticipated satisfaction were slightly higher than ratings of actual satisfaction in the Narrow-Priming condition (Mant = 4.00, Mact = 3.00). As in Experiments 1 and 2, to test the effect of the broad and narrow perspectives on satisfaction we used a repeated measures ANOVA model with time (anticipated and actual satisfaction ratings) as the within-subjects factor and condition as a between-subjects factor. The analysis revealed a marginally significant effect of time of measurement ($F(1,42) = 3.08$, $p<0.1$) suggesting that across conditions actual satisfaction ratings were lower than those anticipated. A non-significant effect of condition ($F(1,42) < 1$) and most importantly a significant interaction between satisfaction ratings and condition ($F(1,42) = 4.44$, $p<0.05$) indicating that participants in the narrow priming condition failed to anticipate their actual satisfaction. Finally, as in Experiments 1 and 2 mean payoff in the Narrow-Priming condition (Mloc = 7.13) was roughly the same as in the Broad-Priming condition (Mbrd = 7.23; $t(40) = 0.08$, n.s). These results replicated the findings from Experiments 1 and 2 and suggest that choice and satisfaction depend upon participants' perspective.

Experiment 4

Experiment 4 was designed to test the generality of Experiment 3's risk-taking findings with a different priming manipulation.

Method and Procedure

Forty-two students participated in the experiment for performance-based payment. The participants were recruited through ads inviting students to make some "easy money" in a "fun" experiment. The design and procedure were similar to Experiment 3, but the priming manipulation was different. Participants under the Broad-Priming condition were asked to list what they considered to be important aspects in choosing a vacation

abroad, buying a watch, and buying sports shoes. Participants under the Narrow-Priming condition were asked to choose between two types of vacations abroad (ski in the French Alps or a vacation in the islands of Thailand), two types of watches (a digital Casio or a Swatch) and two brands of sports shoes (Nike or Reebok). The idea behind the priming manipulation is that listing general aspects evokes a broader perspective than choosing between specific options. In this experiment satisfaction measures were not collected.

Results and Discussion

The effect of priming on participants' choices is presented in Figure 3. It shows that the proportion with which difficult questions were chosen in the Narrow-Priming condition (Mnar=0.84) was higher than in the Broad-Priming condition (Mbro=0.65). The difference was significant ($t(40) = 2.20$, $p<0.05$). This result replicates the choice pattern observed in Experiments 1, 2 and 3.

General Discussion

In four experiments we found that when individuals are prompted to adopt a narrow perspective – either by considering each choice they make in isolation, or by a priming manipulation – the level of challenge and risk they assume is greater than when they are prompted to adopt a broad perspective – either by considering the aggregate consequences of the same choices, or by a different priming manipulation. In Experiment 1 participants who had to sequentially choose between throwing darts at a small target and a large target, were more likely to choose the smaller, more challenging target than participants who had pre-planned the sequence of choices. We found similar effects of sequential choice mode – ongoing vs pre-planned in Experiment 2, with a different task involving general knowledge questions. In experiments 3 and 4 we primed participants to adopt a broad or a narrow perspective. Broad perspective was induced in Experiment 3 by a request to evaluate one's general knowledge in various marketing domains (foods, fashion and fast-food), while a narrow perspective was primed by a task requiring the exercise of this knowledge in specific cases. The results of this experiment showed that participants who adopted a broad perspective preferred more easy questions than participants who adopted a narrow perspective.

Finally, in Experiment 4 we found a similar choice pattern with a different priming technique in which participants had to either choose between options (narrow perspective) or list important aspects (broad perspective) when making consumption decisions.

Taken together the findings of all four experiments support our thesis of the role of perspective as a determinant of preference. When people are induced to adopt a broad perspective they select less risky options than they do when they take a narrow perspective by focusing on the immediate task at hand. This effect was captured in a variety of different tasks including tasks that call for technical skills such as throwing darts, as well as tasks that require mental skills such as solving general knowledge questions.

Another finding pertains to participants' satisfaction. Across three experiments, the actual satisfaction of participants who adopted a narrow perspective was significantly lower than their anticipated satisfaction while participants who adopted a broad perspective ended up about as satisfied as they expected to be. In other words, in the narrow perspective conditions there was a gap between participants' anticipated and experienced satisfaction. Across all three experiments in which satisfaction was measured the interaction between time of measurement and perspective was highly significant ($F(1,242) = 15.29$, $p < 0.001$). The observed lower than anticipated satisfaction of participants who adopted a narrow perspective could not be attributed to a difference in earnings: the two groups, participants induced to adopt a narrow perspective and those induced to adopt a broad perspective earned essentially the same amount. Still, a possible account for the differential effect on satisfaction may involve the number of failures experienced by the two groups. As we found, participants in the narrow perspective conditions undertook more difficult tasks than participants in the broad perspective conditions. As expected, participants who adopted a narrow perspective experienced more failures than participants who adopted a broad perspective ($M = 0.57$ vs. $M = 0.52$, $t(242) = 2.498$, $p<0.05$).

Although the number of experienced failures seems a determinant of satisfaction, it may not provide a complete account of the effect of perspective on satisfaction. For instance it is possible that not only the objective difference in the number of failures between

the perspectives, but also people's subjective experiences of failure and success matters. That is, it could be that people's subjective experiences differ depending on the perspective they adopt. Focusing on the immediate choice, as in the narrow perspective, may enhance one's reaction to each outcome, as it seems easier to attribute success or failure to oneself under these conditions. Enhanced reaction to an outcome in a sequence is likely to also amplify the effect of this outcome on subsequent choice. Future research will be required in order to further explore the significant yet unpredicted gap between anticipated and experienced satisfaction of participants in the narrow perspective conditions.

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