Risky Choice in Dyads Related to Individual Risk Preference, Social Comparison, and Competition

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It has been shown that in experimental asset markets risk-taking increases when participants are incentivized to outperform their peers (Fang et al., 2016; Kirchler, Lindner, & Weitzel, 2016). Herding implying that investors follow each other is a related empirical phenomenon observed in financial markets (Baddeley, 2010). Murayama and Elliot (2012) recently found in a meta-analysis of a large number of empirical studies that performance does not improve with competition. This null result was shown to be due to the mediating role of some people having strong performance-approach goals to win and others strong performance-avoidance goals to not loose. Aversion towards not being the last in a competition has likewise been empirically demonstrated (Kuziemko et al., 2014).

Our aim is to contribute to an understanding of how these disparate findings concerning the role of contests for risk taking in financial markets can be reconciled. If a prize is awarded a winner of a contest, it is believed that competition is induced among participants such that they increase their effort (Dechenaux, Kovenock, & Sheremeta, 2015). This belief may however not be generally true. Garcia, Tor, and Schiff (2013) argue that self-other comparisons is a mediator of competition. A number of factors influencing self-other (social) comparisons would then have indirect effects of strengthening or weakening competition. In a review of previous research, Garcia, Tor, and Schiff (2013) identify several possible indirect effects due to personal factors (social comparison orientation, competitiveness, achievement need), situational factors (e.g. incentive structure, number of competitors), and relational factors (e.g. similarity and closeness to competitor).

In the present study we investigate how risk taking with money is influenced by social comparisons and competition. We hypothesize that in dyads making risky choices, knowledge of the other's choice would evoke self-other comparisons that have a social influence resulting in that the same choices are made. If the performance is incentivized relative to the other's performance, we further hypothesize that self-other comparisons would instead motivate competition such that different choices are made. In order to test these hypotheses we conducted an on-line experiment with the participation of 120 undergraduates recruited from a pool of volunteers. Participants first made eight individual choices between a varying sum of money (safe options) and a fixed risky option consisting of a 50% chance of winning a higher amount. This task was chosen because it has been used by Dohmen et al. (2011) to measure risk preferences. Different participants made the choices with the safe options presented in ascending, descending or random orders. The same individual choices were then repeated in the same orders with information each time given about the choice another participant allegedly had made earlier. Participants randomly assigned to the Social Comparison condition were only informed about the other's choices, which in the Safe condition consisted of five choices of the safe option (excluding the two lowest and the highest safe options), and in the Risk condition the same five choices of the risky option. Participants randomly assigned to the Competition condition were informed that their outcomes depended on the other's outcomes. In the Safe condition they would receive the same outcomes as the other by choosing the safe options, whereas if choosing the risky options they had a 50% chance of winning the higher amount or nothing. In the Risk

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condition the outcomes were reversed. By choosing the same risky option, participants would obtain the smaller sure outcomes, whereas by choosing the safe options they had a 50% chance of each time winning the higher amounts or nothing.

The five choices in which the other either choose the safe option (Safe condition) or the risky option (Risk condition) were analyzed. Both individual choices and choices when the other´s choice was known varied significantly with presentation order of the safe option. An ascending order gave a lower estimate of risk preference (a mean of 1.20 and 1.65 risky choices) than a descending order (2.85 and 2.55) with a random order in between (2.20 and 1.75). In all following analyses the results were combined for the presentation orders since no significant interactions were found with the experimental conditions. The main results were that individual risk preference had a strong significant effect in all conditions. The influence of self-other comparisons and competition were non-significant although in the expected directions. Reliable individual-difference measures of social comparison orientation (Gibbons & Buunk, 1999) and of competitiveness (Houston et al., 2002a, 2002b) were constructed from questions answered by participants after they had completed all choices. Neither of these measures had any significant effect on choices. After having made the choices 55 (42.5%) participants indicated that they believed that they had been influenced by the other participant's choices. On average they rated the influence medium high on a scale, and herding and anti-herding influences were rated equally strong. In additional analyses the results of this subgroup were not found to be different.

In summary, by controlling for individual risk preferences we did not find that social comparisons with another participant or incentives increasing competition had any statistically significant effects on risky choices. The significant effects we found of presentation order would seem to refute that the study was underpowered. A possibility is still that the incentives were not sufficiently high, although other studies (e.g. Murayama and Elliot, 2012) have found effects on invested effort in a contest by merely framing the task as such. Physical presence was an important factor in the experiments conducted by Chou and Nordgren (2016) who found increased risk taking due to feelings of being safe in the company of others. Thus, that the other in our experiment was not physically present may have weakened the expected effects. An additional possibility is that participants differed in the degree to which they desired to win as compared to not losing (Fang et al., 2017). The competitiveness measure that we used may have failed to assess such differences. Other measures have been developed in previous research (Elliot, & Murayama, 2008).

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