Financial Advisors Rely Less on Intuition and Are More Risk-Averse When Deciding for Their Clients

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Abstract

In an online experiment, financial advisors ($N = 251$) completed a hypothetical but realistic decision-making problem concerning pension fund investment on behalf of themselves or a client. Advisors who made decisions on behalf of their clients (vs. themselves) were more risk averse (only in the gain frame, with no effect in the loss frame). Moreover, advisors who decided for their clients processed information less intuitively and slightly more analytically. The change in intuitive processing drove the effect of social distance on risk-aversion in the gain frame. The current study extends previous research by providing further insight into the information-processing mechanisms, while also showing that self-other differences may be particularly salient among professional decision-makers who regularly make decisions on behalf of others.

Keywords: social distance, intuition, risk and uncertainty, organizational decision making, risk-as-feelings

Clients rely on financial advisors (agents) to make recommendations and decisions about their investments and financial well-being. Although financial advisors' risk preferences are expected to be stable and align with the interest of others (Eisenhardt, 1989; Schildberg-Hörisch, 2018), advisors may also have their own interests, such as earning commissions or fees, which can create a misalignment with the clients' best interests.

In 2009, the Authorization Scheme for Savings and Investment in Norway (AFR; https://www.finaut.no/english/) introduced a certification program to ensure that financial advisors offer well-informed recommendations tailored to clients' needs. This initiative essentially introduced a mechanism to align advisors' incentives with the best interests of their clients, helping to mitigate agency costs and potential conflicts of interest.

This context offers a compelling setting to explore self-other differences in risky decision-making. Although self-other differences in risky decision-making are well-documented (for a comprehensive review and meta-analysis, see Polman & Wu, 2020), very few studies have examined such differences among professional decision-makers who regularly decide for others.

The current study examines how financial advisors at a large trade union in Norway make decisions involving risk when deciding on behalf of their clients (vs. themselves). The study also tests the hypothesis that decisions for others versus oneself rely on distinct information-processing mechanisms; risk-as-feelings and risk-as-analysis (Slovic et al., 2004; Slovic & Peters, 2006). Overall, the results indicate that financial advisors who were instructed to decide for their clients exhibited greater risk-aversion and reported lower reliance on gut feelings while making their choices.

The current study adds to an on-going debate about when and how risky decisions for others diverge from decisions made for oneself. Rather than relying on general samples

consisting of non-professional decision-makers and low-stake decisions, this study presents an experiment with financial advisors who responded to a realistic decision-making problem that was specifically designed to mirror their daily professional tasks. Moreover, despite extensive theorizing about the information-processing mechanisms underlying self-other differences in risky decision-making, few studies, if any, have directly tested in-situ intuitive and analytical processing as proposed by dual-process models of risky decision-making.

Self-Other Differences in Risky Decision-Making

Self-other differences in decisions involving risk are well-documented. Some organizations, such as the American Medical Association (2023), have even designed regulations against decision-making for oneself and socially close others. According to the risk-as-feelings hypothesis (Loewenstein et al., 2001), decisions for oneself compared to those made for others are more emotionally intense. Consequently, emotional factors, such as the prospect of gains and losses, that influence risk-taking should have a weaker impact when decisions are made for distant others.

However, findings are mixed, with studies showing either greater or lower risk-seeking for others (for a comprehensive review and meta-analysis, see Polman & Wu, 2020). This has spurred an ongoing debate about when and how decisions for others versus oneself impacts risk-taking.

According to the social-value hypothesis (Stone & Allgaier, 2008), in high-stake situations, individuals prefer a cautious and risk averse approach when deciding for others. This includes domains like health (Garcia-Retamero & Galesic, 2012), safety (Stone et al., 2013), and personal finances (Füllbrunn & Luhan, 2015). This hypothesis has received much support in the literature (Fareri et al., 2022; Fernandez-Duque & Wifall, 2007; Garcia-Retamero & Galesic,

2012; Stone et al., 2013; Zhang et al., 2019; Zikmund-Fisher et al., 2006). While there is some evidence that framing might moderate the effect of social distance on risk-taking (e.g., Zhang et al., 2017), increases in risk aversion when deciding for others (vs. the self) seem to be consistent across gain and loss frames in experiments that use high-stake scenario-based problems (Zhang et al., 2019).

Unlike low-stake situations, high-stake scenarios can lead decision-makers to prioritize risk aversion due to a sense of responsibility and accountability (e.g., Lu et al., 2018). However, the specific information-processing mechanisms, from a dual-process theoretical lens, remain relatively underexplored.

The Information-Processing Mechanisms

Researchers have proposed that self-other differences in risky decision-making are driven by changes in information processing and emotional arousal (e.g., Sun et al., 2017). Most commonly, researchers have used the risk-as-feelings and risk-as-analysis hypothesis (Slovic et al., 2004; Slovic & Peters, 2006), suggesting that decisions for others are more analytical whereas decisions for oneself are more emotional and intuitive.

Indeed, studies show that social distance attenuates and even eliminates well-known biases like loss aversion (e.g., Andersson et al., 2014; Polman, 2012; Raue et al., 2015; Sun et al., 2017, 2018, 2021; Zhang et al., 2017)—biases that are believed to reflect intuitive responses.

Zhang and colleagues (2016, 2017) have demonstrated that in high-stake decision-making decisions, smaller social distance increases risk-seeking and that the effect is stronger among participants who use their “gut feelings” compared to those who deliberate. Fernandez-Duque and Wifall (2007) found that both a reduction in social distance and a preference for intuitive reasoning predicted greater risk-seeking. Zhang et al. (2019) provided indirect evidence

into the information-processing mechanisms by showing that that participants' subjective emotional feelings associated with the outcomes mediated the effect of social distance on risk-aversion.

Moreover, information-processing mechanisms might differ in low-stake decisions compared to high-stake decisions. For instance, Barrafrem and Hausfeld (2021) used a lottery task and found that participants in the "self" condition spent more time on the task, had more fixations, and attended to more pieces of information. However, the results reported by Barrafrem and Hausfel (2020) might be explained by the fact that the study used a lottery task rather than a high-stakes scenario. It is also noteworthy that the authors found no difference in risk-taking.

Taken together, while studies have provided important insight into how individuals process information when deciding for others (vs. the self), few studies, if any, have directly examined intuitive and analytical processing as two independent and simultaneous mechanisms, as in dual-process models. This is understandable given that studies commonly examine intuition and analysis by measuring individuals' general preference for each style or by means of manipulation (e.g., instructing participants to base their decision on intuition or analysis). These dominant paradigms have constrained researchers from exploring how factors such as decision-making for oneself or others impact information processing in a given situation. This study uses a measure of in-situ information processing to provide direct evidence of the risk-as-feelings and risk-as-analysis mechanisms.

Overall, the current study tests the following preregistered key hypothesis:

Social distance will reduce risk-taking through a) a decrease in intuitive processing b) an increase in analytical processing, and c) a decrease in emotional arousal.

The preregistration also included a hypothesis concerning moderation by frame, where it was hypothesized that framing (gain vs. loss) moderates the effect of social distance on risk-taking. Although not of key interest here, for transparency, the results based on this hypothesis are also reported.

Transparency Statement

Data, code, and materials are available at https://osf.io/x96cd/?view_only=4578a1d229c6469d8ca63495e31459ff. The study was preregistered before data collection (https://osf.io/tr6pd/?view_only=e5e18a322b2646e2a5bbd18ca81cacc4). All manipulations and measures collected are reported. None of the participants were excluded. Data was not analyzed until data collection was complete. All analyses were carried out in Rstudio 1.4.1106 (RStudio Team, 2022). The experimental protocol was in accordance with local guidelines and did not require ethical approval. The study was strictly anonymous and designed in accordance with privacy regulations. All participants were required to provide their informed consent.

Method

Sample

Participants were financial advisors working for a large trade union in Norway. Participants were recruited with the help of a group of Executive Master of Science students, supervised by the author of this study. The human resource department within the trade union sent out study invitations on behalf of the author of this study.

311 participants clicked the link to the online experiment. Of these, 251 responded to at least one of the key dependent variables, namely, risk-seeking. Of these, 38 participants did not complete the experiment. Consequently, the sample size included in some of the statistical tests

varies. Most were in the age ranges of 40-49 and 50-59 and most identified as female (120; N_{Male} = 91; N_{Other} = 3).

The sample size was based on resource constraints (Lakens, 2022). Following recommendations by Lakens (2022), I conducted a sensitivity analysis to calculate the smallest effect that the current study was able to detect. The sensitivity analysis was performed using the *pwr* R package (Champely et al., 2020). This study had 80% power (with α = 5%, two-tailed) to detect an effect size of d = 0.25 in an independent sample *t*-test. The present study should be adequately powered to detect typical effects in the literature on self-other differences in risky decision-making. Polman and Wu (2020) found meta-analytic effect sizes ranging from d = -0.78 to d = -0.66 in studies using decision problems similar to the one used in the current study (i.e., scenarios that carry social risk).

In addition to the experiment reported here, the supplementary file reports on the results of two additional experiments (S1 and S2) testing the same hypotheses. The data for these two studies were also collected with the help of Executive students, as part of their thesis (datasets for the supplementary studies are shared on the OSF page). These experiments were also included in the same preregistration. However, they were removed from the primary text due to significant methodological limitations.

In S1 and S2, participants received a problem involving job layoffs and were instructed to choose between a safe or risky option as either a manager of their own organization or to advise a colleague at a different organization. In both experiments, participants assumed the role of a manager in both self and other conditions, blurring the distinction between decision-making for oneself versus for others. This lack of differentiation in the manipulation and the high level of

social distance in both conditions likely contributed to the observed absence of significant differences in the outcome variables.

Nevertheless, a mixed effects model combining the studies, with "study" as a random intercept, revealed the same results as those reported here.

Procedure

The experiment used a 2 (self vs. client) x 2 (gain frame vs. loss frame) mixed design, with self vs. other as the between-subject factor and frame as the within-subject factor. 132 participants were assigned to the "self" condition and 119 participants to the "client" condition. After completing the decision problem, participants indicated the extent to which they processed information intuitively and analytically, their level of emotional arousal during the problem, and their perceived distance from the problem. Finally, participants provided demographic information.

Risky Decision-Making Problem

Participants completed a risky choice problem modeled on the classic Disease Problem (Kahneman & Tversky, 1979) in which they had to choose between a safe and a risky option. Participants received the problem in both gain and loss frames, in randomized order. Participants first selected one of the two options (0 = Safe option, 1 = Risky option) and then indicated their preference for the risky option over the safe option (1 = *Strongly prefer Plan A,* 5 = *Neutral*, 9 = *Strongly prefer Plan B*).

The scenario in the decision-making problem was tailored to reflect participants' day-to-day work, to enhance realism and external validity (Aguinis & Bradley, 2014). The decision problem is shown below (only the gain frame is shown here), translated from Norwegian. The "other" condition is indicated in bold.

You want to **[your new customer wants to]** save NOK 500,000 over 10 years to have extra funds for retirement. You will now be shown two different sets of choices, where you will choose one fund from each set, based on the information provided.

[Next page]

Which fund will you choose? **[Which fund would you advise your client to choose?]**

A: The expected gain at the time of withdrawal is NOK 240,000.

B: There is a 1/3 probability of a gain of NOK 720,000 but a 2/3 probability of no gain.

Measures

Information Processing

After completing the decision-making task, participants indicated the extent to which they processed information intuitively (three items) and analytically (five items) during the task. I adapted these items from an information processing scale developed by Bakken et al. (Bakken et al., in preparation, forthcoming; Bakken & Hærem, 2020). The items are based on conceptualizations and operationalizations in previous studies (Sinclair et al., 2010; Sinclair & Ashkanasy, 2005). Both scales demonstrated good reliability ($\alpha_{intuitive} = 0.87$; $\alpha_{analytical} = 0.76$).

The intuitive scale included the following items: “I made the decision because it felt right to me”, “I based the decision on my inner feelings and reactions”, and “It was more important for me to feel that the decision was right than to have rational reasons for it”.

The analytical scale included the following items: “I considered all alternatives carefully,”, “When making decisions, I considered both options”, “I evaluated systematically all key uncertainties”, “I analyzed all available information in detail,” and “I considered all consequences for my decision”.

Arousal and Valence

I used the self-assessment manikin (Bradley & Lang, 1994) to measure arousal (1 = *Calm*, 9 = *Aroused/Activated*) and valence (1 = *Unhappy*, 9 = *Happy*). Specifically, participants indicated how aroused and positive they felt while making their choices.

Manipulation Check

I also examined whether the social distance manipulation increased perceived distance from the decision-making scenario. Participants answered the following item: "How near or far did you feel from the decision-making scenario?" (1 = *Very close*, 9 = *Very far*). The manipulation check was adopted from a study by Sun et al. (2017).

Perceived distance did not differ between the socially near (M = 5.19) and distant conditions (M = 5.42), $t(213) = -0.75$, $p = .452$ (two-tailed), $d = 0.10$, 95% CI = -0.16, 0.37, $BF_{10} = 0.19$). Bayes factor indicated strong evidence for the null. It is not clear why the groups did not differ in perceived distance. This might be because the item did not specify *social* distance, as in Sun et al.'s study (2017), but instead asked how distant they felt from the scenario. Given that the participants in this experiment are highly familiar with such scenarios, it does not seem surprising that they reported similar levels of perceived distance from the scenario itself.

Demographics

Participants indicated their age (1 = < 20, 2 = 20-29, 3 = 30-39, 4 = 40-49, 5 = 50-59, 6 = 60-69, 7 = > 70) and gender (0 = Male, 1 = Female, 2 = Other/prefer not to say).

Analytical Approach

Independent samples t-test was used to examine the impact of social distance on the dependent variable (risk) and the proposed mediators (intuitive processing, analytical processing, and arousal). ANOVA was used to test the interaction between social distance and frame.

Haye's PROCESS macro for R (Hayes, 2017) was used to test the indirect effects. Each mediation analysis was performed with 1,000 simulations. A mediating effect was deemed significant if the confidence interval did not include zero.

Null findings were followed up with Bayesian analysis to quantify evidence in support of the alternative hypothesis relative to the null hypothesis (BF_{10}), using the *BayesFactor* package in R. I followed Lee and Wagenmaker's classification scheme for the interpretation of Bayes Factors (Quintana & Williams, 2018). Bayes factor (BF_{10}) > 1 implies evidence for the alternative over the null hypothesis: 1-3 (anecdotal), 3-10 (moderate), 10-30 (strong), 30-100 (very strong), >100 (extreme) for the alternative hypothesis. Conversely, <1 implies evidence for the null hypothesis: 1-0.33 (anecdotal), 0.33-0.1 (moderate), 0.1-0.03 (strong), 0.03-0.01 (very strong), <0.01 (extreme).

Results

Main effects are summarized in Table 1. Significant main effects are plotted in Figures 1 and 2. Figure 3 shows the indirect effect of social distance on risk-seeking.

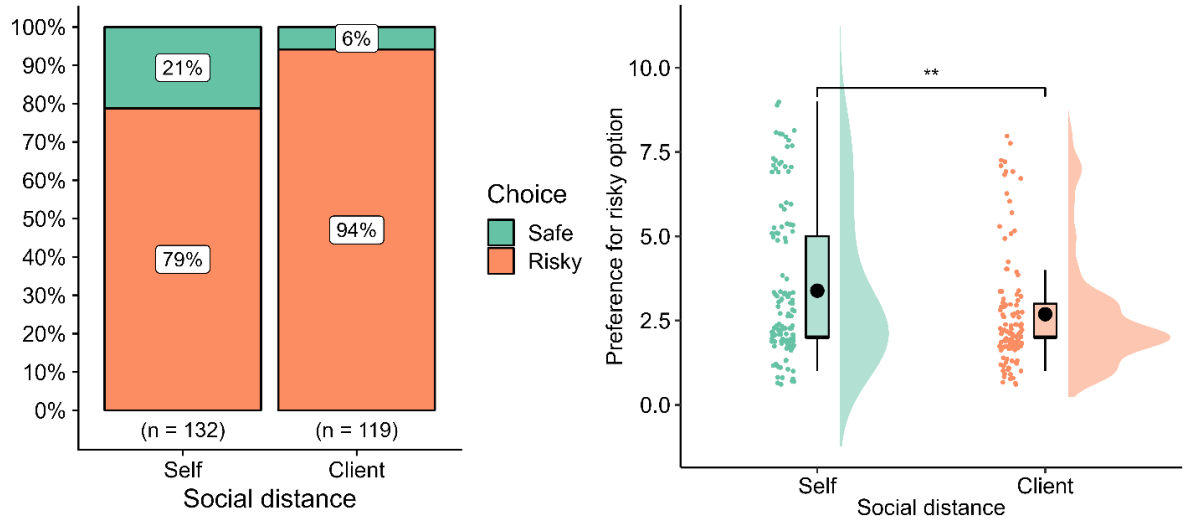
Table 1

Comparison of key variables between the "self" and "client" groups

	Statistic	df	*p*	*d*	95% CI	BF_{10}
Choice-G	3.67	213.00	< 0.001	-0.45	-0.70, -0.20	52.94
Prefer-G	2.82	243.42	0.005	-0.35	-0.60, -0.10	5.25
Choice-L	1.07	238.80	0.288	-0.14	-0.39, 0.12	0.24
Prefer-L	0.61	237.35	0.542	-0.08	-0.33, 0.17	0.17
Intuitive	3.62	198.20	< .001	-0.50	-0.77, -0.23	69.37
Analytical	-1.93	214.00	.055	0.26	0.00, 0.53	0.85
Arousal	-0.54	209.78	.589	0.07	-0.19, 0.34	0.17

Figure 1

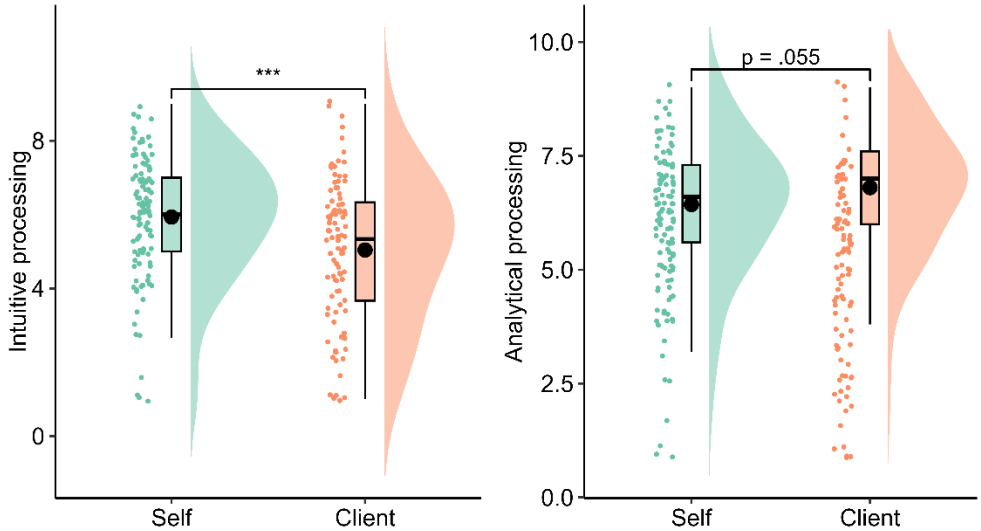
Proportion of safe and risky choices in the gain frame (on the left) and average risk preference in the gain frame (on the right) between the two social distance groups



Note. Plot on the left was rendered using the *ggstatsplot* R package (Patil, 2021). Raincloud plot (on the right) was created using code from (Allen et al., 2019). Colored fields display the distribution of responses. Boxplots display the median, first, and third quartiles. Black circles denote mean values. Error bars denote 95% confidence intervals. ** $p < .01$, ** $p < .001$.

Figure 2

Average intuitive (left) and analytical processing (right) between the two social distance groups



Note. Raincloud plots were created using code from (Allen et al., 2019). Colored fields display the distribution of responses. Boxplots display the median, first, and third quartiles. Black circles denote mean values. Error bars denote 95% confidence intervals. ** $p < .01$, ** $p < .001$.

Risk

In the gain frame, risky choice (binary choice variable) and risk preference (continuous measure) were lower in the socially distant condition compared to the socially near condition. With the binary risky choice variable, the Bayes factor indicated very strong evidence for the alternative hypothesis. With the continuous risk preference measure, Bayes factor indicated moderate evidence for the alternative.

In the loss frame, there was no difference in risky choice or risk preference. Bayes factors indicated moderate evidence for the null.

Frame did not moderate the effect of social distance on either risky choice, $F(1, 239) = 2.62$, $p = .107$, $\eta_p^2 = .011$, 95% CI = .000, .051, $BF_{10} = 3.98$, or risk preference, $F(1, 239) = 3.17$, $p = .076$, $\eta_p^2 = .013$, 95% CI = .000, .055, $BF_{10} = 0.60$. Bayes factors indicate moderate evidence for the alternative hypothesis when using the binary risky choice measure, and anecdotal evidence for the null hypothesis when using the continuous risk preference measure.

Information processing

Social distance reduced intuitive processing. In other words, financial advisors who decided for their clients reported relying less on their intuition compared to financial advisors who decided for themselves. The Bayes factor indicated very strong evidence for the alternative hypothesis.

The effect of social distance on analytical processing was almost significant. Participants reported greater analytical processing in the “client” condition relative to the “self” condition. Bayes factor indicated anecdotal evidence for the null hypothesis.

Arousal

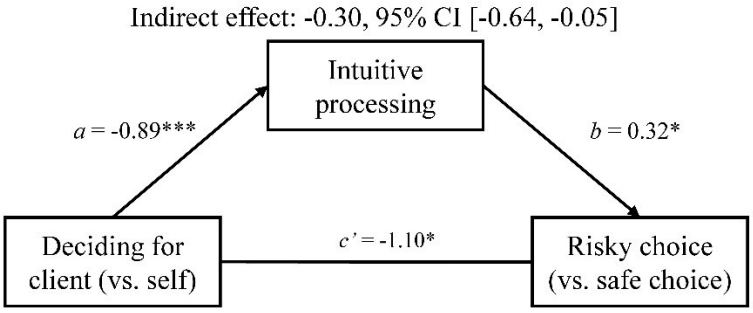
Finally, there was no effect of social distance on arousal. The Bayes factor indicated moderate support for the null.

Indirect Effect of Social Distance on Risk-Seeking via Information Processing and Arousal

Using risky choice in the gain frame as the dependent variable, there was evidence for an indirect effect of social distance on risky choice via intuitive processing (index of mediation = -0.29, 95% CI = -0.64, -0.05) but neither analytical processing (index of mediation = 0.04, 95% CI = -0.07, 0.24) or arousal (index of mediation = -0.01, 95% CI = -0.09, 0.06). It is important to note, however, that the indirect "effect" does not imply causation since the association between intuitive processing and risk is correlational (Podsakoff & Podsakoff, 2019). The significant indirect effect via intuitive processing is shown in Figure 3.

Figure 3

Indirect effect via intuitive processing



Note. The model also included analytical processing and arousal as mediators. The indirect effect via intuitive processing remains significant when excluding them.

None of the indirect effects were significant in the models predicting risk preference in the gain frame, and risky choice and risk preference in the loss frame. Results are shown in the file "financial_advisors.html" on the OSF page. Moreover, frame did not moderate any of the indirect effects.

Discussion

Financial advisors who were asked to imagine deciding for their clients (vs. themselves) were risk averse and relied less on their gut feelings during their decision-making. This asymmetry in decision-making for the self vs. others maps onto risk-as-feelings (characterized by emotions and gut feelings) and risk-as-analysis (characterized by calculative logic) mechanisms, respectively (Slovic et al., 2004; Slovic & Peters, 2006). Although the risk-as-feelings and risk-as-analysis framework has been used to explain self-other differences in risky decision-making (for an overview, see Polman & Wu, 2020), this is one of the few studies to directly examine these mechanisms.

In addition, the experiment reported here was conducted among a sample of financial advisors who completed a decision-making problem tailored to their job background. Thus, the current study makes an important contribution by demonstrating the generalizability of self-other differences among a sample of experienced decision-makers, using a realistic decision-making problem (Aguinis & Bradley, 2014).

Moreover, the current findings build on an ongoing debate about whether decisions for others reduce or increase risk-seeking, as well as the underlying processes by which such differences arise (for a comprehensive review, see meta-analysis by Polman and Wu, 2020). While some studies have found that decisions for others increase risk-aversion, others have found that it increases risk-seeking. The current study is consistent with the social value hypothesis of self-other differences in decision-making (Stone & Allgaier, 2008) and supports previous studies that have found that social distance reduces risk-seeking in high-stake settings (e.g., Fernandez-Duque & Wifall, 2007; Garcia-Retamero & Galesic, 2012; Stone et al., 2013; Zhang et al., 2017; Zikmund-Fisher et al., 2006).

It is worth noting, however, that the effect of social distance on risk preference and risky choice, as well as the indirect effect via intuitive processing, were only significant in the gain frame. This is consistent with previous studies that have found that risk preferences in the gain domain are more susceptible to factors such as emotions and psychological distance than loss frames (Habib et al., 2015; Li et al., 2021; Raue et al., 2015; Sun et al., 2017; Yechiam & Telpaz, 2011). Loss frames might overshadow other influences because losses are psychologically stronger than gains (Kahneman & Tversky, 1979). The pattern reported here also aligns with a meta-analysis by Polman and Wu (2020) that found that self-other differences in risky decision-making were larger in the gain frame.

Furthermore, it is worth noting that social distance did not significantly reduce arousal. Since participants completed the experiment online, it is possible that environmental disturbances made the social distance manipulation less emotionally arousing. Finally, the indirect effect does not imply causation since the association between information processing and risk is correlational (Podsakoff & Podsakoff, 2019). Future studies may want to manipulate both social distance and information processing.

Conclusion

This study demonstrates how financial advisors who decide for others versus themselves take risks and process information. Decisions for others were more risk-averse and less based on gut feelings. The findings support dual-process models of risky decision-making.

Competing Interests

Competing interest: The author declares none.

Acknowledgments

I am grateful to Professor Linda Lai for her very helpful assistance.

Financial Support

This research received no specific grant funding from any funding agency, commercial or not-for-profit sectors.

Supplementary Materials

Supplementary materials can be accessed on the OSF page (https://osf.io/x96cd/?view_only=4578a1d229c6469d8ca63495e31459ff).

References

Aguinis, H., & Bradley, K. J. (2014). Best Practice Recommendations for Designing and Implementing Experimental Vignette Methodology Studies. *Organizational Research Methods*, *17*(4), 351–371. https://doi.org/10.1177/1094428114547952

Allen, M., Poggiali, D., Whitaker, K., Marshall, T., & Kievit, R. (2019). Raincloud plots: A multi-platform tool for robust data visualization. *Wellcome Open Research | Open Access Publishing Platform*. https://doi.org/10.12688/wellcomeopenres.15191.2

American Medical Association. (2023). *Code of Medical Ethics—Treating Self or Family*. https://code-medical-ethics.ama-assn.org/ethics-opinions/treating-self-or-family

Andersson, O., Holm, H. J., Tyran, J.-R., & Wengström, E. (2014). Deciding for Others Reduces Loss Aversion. *Management Science*, *62*(1), 29–36. https://doi.org/10.1287/mnsc.2014.2085

Bakken, B., & Hærem, T. (2020). Adaptive Decision Making in Crisis Management. In *Handbook of Intuition Research as Practice* (pp. 14–26). Edward Elgar Publishing.

Bakken, B., Hærem, T., Hodgkinson, G. P., & Sinclair, M. (in preparation). *Development and Validation of the Cognitive Processing Inventory (CPQ): An instrument for measuring cognitive aspects of decision making.*

Bakken, B., Hansson, M., & Hærem, T. (forthcoming). Challenging the Doctrine of "Non-Discerning" Decision-Making – Investigating the Interaction Effects of Cognitive Styles. *Journal of Occupational and Organizational Psychology*.

Champely, S., Ekstrom, C., Dalgaard, P., Gill, J., Weibelzahl, S., Anandkumar, A., Ford, C., Volcic, R., & Rosario, H. D. (2020). *pwr: Basic Functions for Power Analysis* (1.3-0) [Computer software]. https://cran.r-project.org/web/packages/pwr/index.html

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, *14*(1), 57–74. https://doi.org/10.5465/amr.1989.4279003

Fareri, D. S., Stasiak, J. E., & Sokol-Hessner, P. (2022). Choosing for others changes dissociable computational mechanisms underpinning risky decision-making. *Scientific Reports*, *12*(1), Article 1. https://doi.org/10.1038/s41598-022-18437-9

Fernandez-Duque, D., & Wifall, T. (2007). Actor/observer asymmetry in risky decision making. *Judgment and Decision Making*, *2*(1), 1–8. https://doi.org/10.1017/S193029750000022X

Füllbrunn, S., & Luhan, W. J. (2015). *Am I My Peer's Keeper? Social Responsibility in Financial Decision Making* (SSRN Scholarly Paper 2618439). https://doi.org/10.2139/ssrn.2618439

Garcia-Retamero, R., & Galesic, M. (2012). Doc, what would you do if you were me? On self–other discrepancies in medical decision making. *Journal of Experimental Psychology: Applied*, *18*, 38–51. https://doi.org/10.1037/a0026018

Habib, M., Cassotti, M., Moutier, S., Houdé, O., & Borst, G. (2015). Fear and anger have opposite effects on risk seeking in the gain frame. *Frontiers in Psychology*, *6*. https://doi.org/10.3389/fpsyg.2015.00253

Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis, Second Edition: A Regression-Based Approach*. Guilford Publications.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, *47*(2), 263. https://doi.org/10.2307/1914185

Li, H., Yang, Y., Liu, D., & Xie, X. (2021). Risk preferences in self–other decisions: The effect of payoff allocation framing. *Journal of Behavioral Decision Making*, *34*(2), 247–260. https://doi.org/10.1002/bdm.2207

Loewenstein, G., Weber, E. U., Hsee, C. K., & Welch, N. (2001). Risk as feelings. *Psychological Bulletin*, *127*(2), 267–286. https://doi.org/10.1037/0033-2909.127.2.267

Lu, J., Shang, X., & Li, B. (2018). Self–other differences in decision-making under risk: An interpersonal perspective. *Experimental Psychology*, *65*(4), 226–235. https://doi.org/10.1027/1618-3169/a000404

Patil, I. (2021). Visualizations with statistical details: The "ggstatsplot" approach. *Journal of Open Source Software*, *6*(61), 3167. https://doi.org/10.21105/joss.03167

Podsakoff, P. M., & Podsakoff, N. P. (2019). Experimental designs in management and leadership research: Strengths, limitations, and recommendations for improving publishability. *The Leadership Quarterly*, *30*(1), 11–33. https://doi.org/10.1016/j.leaqua.2018.11.002

Polman, E. (2012). Self–other decision making and loss aversion. *Organizational Behavior and Human Decision Processes*, *119*(2), 141–150. https://doi.org/10.1016/j.obhdp.2012.06.005

Quintana, D. S., & Williams, D. R. (2018). Bayesian alternatives for common null-hypothesis significance tests in psychiatry: A non-technical guide using JASP. *BMC Psychiatry*, *18*(1), 178. https://doi.org/10.1186/s12888-018-1761-4

Raue, M., Streicher, B., Lermer, E., & Frey, D. (2015). How far does it feel? Construal level and decisions under risk. *Journal of Applied Research in Memory and Cognition*, *4*(3), 256–264. https://doi.org/10.1016/j.jarmac.2014.09.005

RStudio Team. (2022). *RStudio: Integrated Development for R* [RStudio Team]. http://www.rstudio.com/

Schildberg-Hörisch, H. (2018). Are Risk Preferences Stable? *Journal of Economic Perspectives*, *32*(2), 135–154. https://doi.org/10.1257/jep.32.2.135

Sinclair, M., & Ashkanasy, N. M. (2005). Intuition: Myth or a Decision-making Tool? *Management Learning*, *36*(3), 353–370. https://doi.org/10.1177/1350507605055351

Sinclair, M., Ashkanasy, N. M., & Chattopadhyay, P. (2010). Affective antecedents of intuitive decision making. *Journal of Management and Organization*, *16*(3), 382–398.

Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2004). Risk as Analysis and Risk as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality. *Risk Analysis*, *24*(2), 311–322. https://doi.org/10.1111/j.0272-4332.2004.00433.x

Slovic, P., & Peters, E. (2006). Risk Perception and Affect. *Current Directions in Psychological Science*, *15*(6), 322–325. https://doi.org/10.1111/j.1467-8721.2006.00461.x

Stone, E. R., & Allgaier, L. (2008). A Social Values Analysis of Self–Other Differences in Decision Making Involving Risk. *Basic and Applied Social Psychology*, *30*(2), 114–129. https://doi.org/10.1080/01973530802208832

Stone, E. R., Choi, Y., Bruin, W. B. de, & Mandel, D. R. (2013). I can take the risk, but you should be safe: Self-other differences in situations involving physical safety. *Judgment and Decision Making*, *8*(3), 250–267. https://doi.org/10.1017/S1930297500005969

Sun, Q., Liu, Y., Zhang, H., & Lu, J. (2017). Increased social distance makes people more risk-neutral. *The Journal of Social Psychology*, *157*(4), 502–512. https://doi.org/10.1080/00224545.2016.1242471

Sun, Q., Lu, J., Zhang, H., & Liu, Y. (2021). Social Distance Reduces the Biases of Overweighting Small Probabilities and Underweighting Large Probabilities. *Personality*

and Social Psychology Bulletin, *47*(8), 1309–1324. https://doi.org/10.1177/0146167220969051

Sun, Q., Zhang, H., Sai, L., & Hu, F. (2018). Self-Distancing Reduces Probability-Weighting Biases. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.00611

Yechiam, E., & Telpaz, A. (2011). To Take Risk is to Face Loss: A Tonic Pupillometry Study. *Frontiers in Psychology*, *2*. https://www.frontiersin.org/articles/10.3389/fpsyg.2011.00344

Zhang, X., Liu, Y., Chen, X., Shang, X., & Liu, Y. (2017). Decisions for Others Are Less Risk-Averse in the Gain Frame and Less Risk-Seeking in the Loss Frame Than Decisions for the Self. *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.01601

Zhang, Y., Chen, Z. J., & Li, H. (2017). Toward a model of risky decisions: Synergistic effect of affect intensity and affective processing on risk-seeking as a function of decision domain. *Journal of Experimental Social Psychology*, *73*, 235–242. https://doi.org/10.1016/j.jesp.2017.06.006

Zhang, Y., Chen, Z. J., Luan, M., & Li, H. (2016). Affect Intensity and Risk Preference in Life-Saving Decisions. *Basic and Applied Social Psychology*, *38*(2), 89–97. https://doi.org/10.1080/01973533.2015.1137474

Zhang, Y., Zhou, H., Luan, M., & Li, H. (2019). No one left behind: How social distance affects life-saving decision making. *Journal of Risk Research*, *22*(2), 209–219. https://doi.org/10.1080/13669877.2017.1378244

Zikmund-Fisher, B. J., Sarr, B., Fagerlin, A., & Ubel, P. A. (2006). A Matter of Perspective: Choosing for Others Differs from Choosing for Yourself in Making Treatment Decisions.

Journal of General Internal Medicine, *21*(6), 618–622. https://doi.org/10.1111/j.1525-1497.2006.00410.x