

Singapore Management University

Institutional Knowledge at Singapore Management University

Research Collection School of Social Sciences

School of Social Sciences

1-2019

The effects of perceived decision-making styles on evaluations of openness and competence that elicit collaboration

Ming-Hong TSAI

Singapore Management University, mhtsai@smu.edu.sg

Nadhilla Velda MELIA

Singapore Management University, nvmelia.2016@phdps.smu.edu.sg

Verlin B. HINSZ

North Dakota State University--Fargo

Follow this and additional works at: https://ink.library.smu.edu.sg/soss_research



Part of the [Experimental Analysis of Behavior Commons](#), and the [Social Psychology and Interaction Commons](#)

Citation

TSAI, Ming-Hong, MELIA, Nadhilla Velda, & HINSZ, Verlin B..(2019). The effects of perceived decision-making styles on evaluations of openness and competence that elicit collaboration. *Personality and Social Psychology Bulletin*, 46(1), 124-139.

Available at: https://ink.library.smu.edu.sg/soss_research/2825

This Journal Article is brought to you for free and open access by the School of Social Sciences at Institutional Knowledge at Singapore Management University. It has been accepted for inclusion in Research Collection School of Social Sciences by an authorized administrator of Institutional Knowledge at Singapore Management University. For more information, please email cherylds@smu.edu.sg.

The Effects of Perceived Decision-Making Styles on Evaluations of Openness and Competence That Elicit Collaboration

Ming-Hong Tsai¹ , Nadhilla Velda Melia¹, and Verlin B. Hinsz²

Abstract

When interacting with a task partner, individuals often rely upon characteristics they infer about their partner to determine their level of collaboration with the partner. To explore social perception processes related to collaboration, we examined perceptions of an actor's decision-making style as predictors. Using different methods in various research settings, we found that compared with perceptions of an actor's intuitive decision-making style or of a nonspecific decision-making style, perceptions of an actor's rational decision-making style were more positively associated with inferences of the actor's openness and competence, both of which were in turn associated with the perceiver's collaborative intention with the actor. Intentions to engage in mutual collaboration were also positively associated with performance in an idea generation task. Therefore, our research offers a novel illustration of how to enhance collaboration based on perceptions of openness and competence inferred from others' rational rather than intuitive decision-making style.

Keywords

collaboration, rational decision-making, intuitive decision-making, openness, competence

Received June 20, 2018; revision accepted March 6, 2019

Unity is strength . . . when there is teamwork and collaboration,
wonderful things can be achieved.

—Mattie Stepanek (1990-2004), American Teenage Poet

As this quote illustrates, collaboration is believed to be consequential and mostly beneficial. Collaboration has been associated with a wide range of beneficial outcomes, such as increased teamwork satisfaction (Tseng, Wang, Ku, & Sun, 2009) and effective information processing (Hinsz, Tindale, & Vollrath, 1997). Moreover, in various aspects of daily or work life, collaboration becomes a requirement rather than a choice. For instance, superior customer service requires collaboration between employees who collect information about clients' needs and implement a complex operation, respectively (Ellinger, 2000).

In the present research, we examined whether and how perceptions of an individual's rational and intuitive decision-making styles can elicit the perceivers' collaboration to achieve the goals for a specific task. A rational decision-making style refers to a tendency to explore information about and logically evaluate alternatives before making a decision, whereas an intuitive decision-making style is characterized by a reliance on feelings, instincts, and hunches to

make decisions (Scott & Bruce, 1995). We specifically examined the rational and intuitive decision-making styles because these two styles are the most consistent with the theory of thinking systems that dominate the decision-making processes (Kahneman, 2003). Consistent with an intuitive decision-making style, System 1 relies on an intuitive processing mode that involves hunches, gut feelings, and instincts. By contrast, System 2 is a rational processing mode that integrates connections through an effortful and deliberative analysis, which is consistent with a rational decision-making style.

In addition, both rational and intuitive decision-making styles are typically viewed as more beneficial than other styles. For instance, research has demonstrated that the rational and intuitive styles are positively related to satisfactory decision outcomes, whereas the avoidant and spontaneous styles are negatively related to satisfactory decision outcomes (Parker, De Bruin, & Fischhoff, 2007). Rational and

¹Singapore Management University, Singapore

²North Dakota State University, Fargo, USA

Corresponding Author:

Ming-Hong Tsai, Singapore Management University, 90 Stamford Road,
Level 4, Singapore 178903, Singapore.

Email: mhtsai@smu.edu.sg

intuitive decision makers also have high levels of self-esteem, whereas dependent and avoidant decision makers have low levels of self-esteem (Batoool, Riaz, Riaz, & Akhtar, 2017). Decision makers' rational and intuitive styles can be inferred based on the explicit features of decision-making processes. For instance, an individual who searches for substantial information or explores various options can be perceived as a rational decision maker (Scott & Bruce, 1995). By contrast, an individual who spends little time to make decisions without external information can be regarded as an intuitive decision maker (Lieberman, 2007).

We focused on examining whether perceptions of an actor's rational and intuitive decision-making styles would elicit the perceiver's intentions to engage in mutual collaboration. In the present research, an actor refers to a task partner in a study setting or a coworker in a workplace. Mutual collaboration refers to instances in which an individual works with another individual to seek solutions that can satisfy their different needs (De Dreu & van Vianen, 2001). We focused on a perceiver's evaluation rather than an actor's evaluation of the actor's decision-making style as the key predictor of the perceiver's behavior because research has demonstrated inconsistent ratings between a perceiver's and an actor's evaluations of the actor's behavior (Vazire, 2010). This finding implies that the actor's self-perceptions are not necessarily relevant to the perceiver's evaluations of the actor and therefore we used only the perceiver's evaluations of the actor's decision-making styles as key predictors in the present research.

Our research advances our knowledge regarding the social aspect of rational and intuitive decision-making styles. Previous research has suggested that rational or intuitive decision makers are not significantly influenced by the presence of others. For instance, rational and intuitive decision makers prefer to make decisions by themselves (Delaney, Strough, Parker, & de Bruin, 2015). In addition, rational and intuitive decision-making styles are not significantly associated with a perceived ability to modify behavior in the presence of others (Geisler & Allwood, 2018). By contrast, we aim to explore the perceptual benefits of intuitive and rational decision-making styles in social interactions. Our investigation on a perceiver's evaluation of another individual's decision-making style also differs from existing research on the social aspects of decision-making styles that focused on an *intrapersonal* association between a decision-making style and other constructs, such as a positive association between a rational decision-making style and agreeableness (Dewberry, Juanchich, & Narendran, 2013).

Advantageous Mental Representations of a Rational Decision-Making Style

In contrast to previous research that rational decision makers may influence others via their interactions with others (e.g., agreeing with others' opinions; Dewberry et al., 2013), we

explore an alternative way for rational decision makers to influence another individual's intention to collaborate with them. Specifically, perceptions of an actor's rational decision-making style can create advantageous mental representations that elicit a perceiver's intention to engage in mutual collaboration. Based on the theory of social perception (Bodenhausen & Hugenberg, 2009), an actor creates signals (e.g., a display of his or her decision-making style) that a perceiver receives and converts into mental representations (e.g., perceptions of an actor's openness and competence) that influence the perceiver's behavior (e.g., the perceiver's intention to engage in mutual collaboration with the actor). An individual's receipt of signals from an actor depends on whether the individual is perceptually sensitive to the social signals (cues) and how the individual interprets the cues.

Thus, we examined mental representations relevant to openness to alternative perspectives and competence as mediators of the relationship between perceptions of an actor's rational decision-making style and the perceiver's mutual collaboration with the actor. Given that perceivers are sensitive to cues regarding survival in the environment (Öhman, Flykt, & Esteves, 2001), a task partner's openness and competence may influence an individual's survival. For instance, a perception of a partner's openness may signal a low threat to an individual's personal goal in a conflict situation (Tsai & Bendersky, 2016). In addition, a perception of a partner's competence may influence an individual to evaluate whether a group can compete for resources (Kurzban & Leary, 2001). The salience of openness and competence for a maximization of joint benefits highlight why these inferred characteristics are important social perception processes for intentions to engage in mutual collaboration.

Openness and Competence as Intermediary Perceptions

Perceived Openness to Alternative Perspectives

Perceptions of an actor's rational decision-making style may be positively associated with a perception of the actor's openness to alternative perspectives, which reflects receptivity to ideas and suggestions from another individual (Tröster & van Knippenberg, 2012). The theory of goal/intention inference predicts that input from an actor can guide inferences about the actor's goals and intentions, which may facilitate the subsequent impression formation of the actor (Bodenhausen & Hugenberg, 2009). Based on the theory of goal/intention inference, when an actor is perceived as having a rational decision-making style, a perceiver may interpret the actor's goal/intention as the extensive exploration of decision alternatives through openness to alternative perspectives. Research has also demonstrated that openness to alternative perspectives facilitates an exploration and consideration of decision options (Mitchell, Nicholas, & Boyle, 2009). Research has also demonstrated a positive association

between a rational decision-making style and openness based on self-perceptions of these two concepts (Bayram & Aydemir, 2017).

When an actor is perceived as open to alternative perspectives, a perceiver may be more likely to engage in mutual collaboration with the actor. The perceiver may be more likely to share task-relevant information with the actor (Tsai & Bendersky, 2016) and to feel that his or her ideas are valued by the actor (Edmondson, Kramer, & Cook, 2004). Open discussions are positively associated with a willingness to collaborate in the future (Tjosvold & Sun, 2003). Therefore, we propose that an individual's perception of an actor's openness mediates the positive association between the individual's perception of an actor's rational decision-making style and the individual's intention to engage in mutual collaboration with the actor.

Perceived Competence

Perceptions of an actor's rational decision-making style may be positively associated with perceptions of the actor's competence in collaborative tasks. Expectation states theory predicts that individuals pay attention to social cues regarding the potential competence of their task partners (Driskell & Mullen, 1990). A rational decision-making style may offer such cues. Specifically, characteristics of a rational decision-making style, including an exploration of various alternatives and a careful evaluation of the alternatives, are regarded as essential competencies in achieving high-quality decisions (Janis, 1989). Research also demonstrates that individuals with a rational decision-making style are rated as having high decision quality by their peers (Wood & Highhouse, 2014).

Perceptions of an actor's competence may in turn increase a perceiver's mutual collaboration with the actor. Research has demonstrated that people prefer to collaborate with others who have a reputation for being competent (Hinds, Carley, Krackhardt, & Wholey, 2000). A high level of competence-based trust has also been found to enable collaboration in groups (Gambetta, 1988) and promote a collaborative transfer of knowledge (Levin & Cross, 2004). Thus, we propose that an individual's perception of an actor's competence mediates the positive association between the individual's perception of an actor's rational decision-making style and the individual's intention to engage in mutual collaboration with the actor.

Perceptions of an Intuitive Decision-Making Style and Collaborative Intentions

A perception of an actor's intuitive decision-making style may be positively associated with the perceiver's intention to engage in mutual collaboration with the actor. Consistent

with this proposition, van de Calseyde and colleagues' findings establish that perceptions of an actor's decision speed increase perceivers' willingness to collaborate with the actor in scenario studies and in a television show (van de Calseyde, Keren, & Zeelenberg, 2014). Furthermore, these findings imply that a perception of an actor's intuitive decision-making style may elicit collaboration because intuition-based decisions are made quickly (Lieberman, 2007). Research has indeed demonstrated that individuals with an intuitive decision-making style report a tendency to make quick decisions (Betsch, 2004) and make fast choices in a situation involving team sports (Raab & Laborde, 2011). Relatedly, managers who make intuitive decisions are considered as having the courage to make important decisions (Teard, 1935), a willingness to take responsibility and criticism (Barnard, 1938), and a high capability of recognizing others' emotions (Erenda, Mesko, & Bukovec, 2014), which may elicit others' mutual collaboration. Thus, we propose that a perception of an actor's intuitive decision-making style is positively related to a perceiver's intention to engage in mutual collaboration with the actor.

Overview of the Studies

To test our first three hypotheses and to increase the generalizability of our findings, we conducted Studies 1 and 2 using surveys involving different samples (e.g., students and working adults) and different contexts (e.g., temporary task assignments and the workplace). In addition, Studies 3 and 4 used experiments to replicate and extend the findings in Studies 1 and 2. A summary of all the studies is presented in Table 1.

Study 1: Task Process Survey

In Study 1, we examined Hypotheses 1 to 3 in a research setting involving discussions regarding specific issues.

Participants and Design

The Study 1 sample consisted of 128 university students (61.70% female, \$5 compensation [Singapore dollars]) in Singapore. Following the recommendation regarding time separation between measures to decrease common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the study design involved measuring decision-making styles as predictor variables during a break between two task discussions and measuring the other variables after the two task discussions.

Procedure and Measures

Participants arrived at the study room in groups of up to eight and were randomly organized into dyads. The students first read materials about a two-stage group decision-making

Table 1. Summary of All the Studies.

Study	Context	Method	IV(s)	MV(s)	DV(s)
1	Survey regarding task processes in a dyad interaction	Temporal separation between the measures of the IVs and other measures	Perceptions of a partner's rational and intuitive decision-making styles	Perceptions of a partner's openness and competence	Perceivers' evaluation of mutual collaboration
2	Field survey about the interaction with a coworker	Temporal separation among the measures of the IVs, MVs, and DV	Perceptions of a coworker's rational and intuitive decision-making style	Perceptions of a coworker's openness and competence	Perceivers' evaluation of mutual collaboration
3	Experiment involving an idea generation task	Perceptions of a rational decision-making style versus a control condition as an experimental manipulation	Perceptions of a partner's rational decision-making style versus a partner's nonspecific decision-making style	First tier: Perceptions of a partner's openness and competence Second tier: Perceivers' intention to engage in mutual collaboration	Perceivers' task performance
4	Experiment involving four task scenarios differentiated based on task interdependence and time pressure	Perceptions of a rational decision-making style versus an intuitive decision-making style as an experimental manipulation	Perceptions of a partner's rational decision-making style versus intuitive decision-making style	Perceptions of a partner's openness and competence	Perceivers' intentions to engage in mutual and simple collaborations

Note. IV = independent variable; MV = mediator variable; DV = dependent variable.

task. During the first stage, each dyad determined a slogan that could attract customers and increase sales in a market with three different shops (including a bakery, a florist, and a grocery). During the second stage, each dyad determined a plan to use the slogan to promote the market (cf. Beersma & De Dreu, 2003, Study 1).

More specifically, participants wrote down their own two individual slogans and then were given 7 min to discuss with their partner to determine the group slogan during the first stage. After the discussion, both participants (i.e., perceivers) within a dyad evaluated their partner's rational and intuitive decision-making styles using two 5-item scales adapted from Scott and Bruce (1995). Their task partner served as an actor in the current research. Sample items of the rational and intuitive decision-making style scales were "Your partner explores all of his or her options before making a decision," and "When your partner makes decisions, he or she tends to rely on his or her intuition," respectively.

During the second stage, each participant individually wrote down two plans that used their slogan to promote the market and then was given 7 min to discuss with their assigned partner to determine their group plan. After their discussion, participants reported their perception of the partner's openness using the 3-item openness scale (1 = *strongly disagree*, 7 = *strongly agree*) adapted from Tröster and van Knippenberg (2012). A sample item was "If suggestions were made to your partner, they would receive fair evaluation." Participants also reported their perception of the partner's competence using the 3-item competence

scale (1 = *not at all*, 7 = *very much so*) adapted from Ho, Shih, & Walters (2012). A sample item was "Your partner is competent at the task."

Participants also reported their evaluation of the mutual collaboration with the task partner using the 3-item scale (1 = *not at all*, 7 = *to a great extent*) adapted from De Dreu and van Vianen (2001). A sample item was "My partner and I discussed the issues to work out a mutually acceptable idea." Finally, participants indicated their demographic characteristics and were debriefed.

Results

Descriptive statistics, correlations, and scale reliability (alphas) for the focal variables in each study are presented in Table 2.

Associations among variables. To test the associations among the variables, a mixed-effect regression analysis with a maximum likelihood approach was conducted with a random variable that used the dyad identification number to control the differences between dyads. All regression models in each study are presented in Table 3. The results of Model 1 demonstrated that a perception of an actor's (i.e., a task partner's) rational decision-making style was positively associated with an evaluation of the perceiver's collaboration with the actor ($B = 0.35, p < .001$); however, a perception of an actor's intuitive decision-making style was not significantly associated with an evaluation of the perceiver's collaboration ($B = 0.02, p = .786$). The

Table 2. Means, Standard Deviations, and Correlations of All Focal Variables in Studies 1 to 4.

	M	SD	1	2	3	4	5
Study 1							
1. Rational style	5.10	0.88	.88				
2. Intuitive style	4.99	0.86	.24*	.76			
3. Openness	6.08	0.82	.33***	.20*	.85		
4. Competence	5.88	0.88	.35***	.19*	.71***	.94	
5. Mutual collaboration	5.90	0.84	.37***	.11	.61***	.56***	.80
Study 2							
1. Rational style	4.66	1.52	.96				
2. Intuitive style	4.73	1.22	-.35***	.89			
3. Openness	5.50	1.20	.55***	-.06	.93		
4. Competence	5.80	1.22	.62***	-.11	.71***	.93	
5. Mutual collaboration	5.51	1.07	.38***	-.01	.57***	.53***	.84
Study 3							
1. Rational style versus control	0.50	0.50					
2. Openness	5.12	1.18	.17**	.92			
3. Competence	5.37	1.31	.13*	.59***	.95		
4. Mutual collaboration	5.75	1.10	.01	.49***	.52***	.91	
5. Quantity of product	1.56	1.01	-.06	.13*	.14*	.26***	
6. Weighted quantity of product	4.20	2.91	-.05	.12	.12	.26***	.97***
Study 4							
1. Rational style versus intuitive style	0.50	0.50					
2. Openness	5.10	1.18	.45***	.87			
3. Competence	5.26	1.23	.41***	.72***	.92		
4. Mutual collaboration	5.38	1.15	.19***	.51***	.50***	.97	
5. Simple collaboration	5.44	1.16	.22***	.53***	.55***	.90***	.95

Note. Cronbach's alpha coefficients (i.e., scale reliability) are reported on the diagonal in each study. Study 3: Openness (0 = low openness, 1 = high openness), competence (0 = low competence, 1 = high competence); Study 3: Rational style versus control (0 = control, 1 = rational); Study 4: Rational style versus intuitive style (0 = intuitive, 1 = rational). The variables of mutual and simple collaborations were aggregated measures of all the task scenarios. * $p < .05$. ** $p < .01$. *** $p < .001$.

results of Model 2 demonstrated that a perception of an actor's rational decision-making style was positively associated with a perception of the actor's openness ($B = 0.29, p < .001$). In contrast, a perception of an actor's intuitive decision-making style was not significantly associated with a perception of the actor's openness ($B = 0.10, p = .192$). The results of Model 4 demonstrated that a perception of an actor's openness was positively associated with an evaluation of the perceiver's mutual collaboration ($B = 0.42, p < .001$).

Model 3 demonstrated that a perception of an actor's rational decision-making style was positively associated with a perception of the actor's competence ($B = 0.35, p < .001$). The results of Model 3 also demonstrated that a perception of an actor's intuitive decision-making style was not significantly associated with a perception of the actor's competence ($B = 0.09, p = .298$). The results of Model 4 also demonstrated that a perception of an actor's competence was positively associated with an evaluation of the perceiver's collaboration ($B = 0.20, p < .05$).

To examine the simultaneous indirect effects via perceptions of openness and competence in multilevel analyses, we used a method that involved computation of confidence intervals (CIs) based on the distribution of the product

between two normal random variables (Tofighi & MacKinnon, 2011). The results indicated that a perception of an actor's rational decision-making style was positively associated with an evaluation of the perceiver's mutual collaboration with the actor via the perceiver's evaluations of the actor's openness ($B = 0.12, 95\% \text{ CI} = [0.05, 0.22]$) and competence ($B = 0.07, 95\% \text{ CI} = [0.01, 0.15]$), which supported our expectations. Thus, we found evidence for the significant mediating effects of perceived openness and competence on the link between a perception of an actor's rational decision-making style and an evaluation of the perceiver's mutual collaboration. However, a perception of an actor's intuitive decision-making style was not significantly associated with perceptions of the actor's openness and competence or an evaluation of the perceiver's mutual collaboration with the actor.

Study 2: A Three-Wave Field Survey

To replicate the findings in Study 1 and increase the generalizability of our results, we investigated perceptions of a coworker's characteristics and evaluations of mutual collaboration with the coworker at the workplace.

Table 3. Regression Analyses in Studies 1 to 3.

DV Study 1	Model 1: Mutual collaboration	Model 2: Openness	Model 3: Competence	Model 4: Mutual collaboration
Rational style	0.35*** (0.08)	0.29*** (0.08)	0.35*** (0.08)	0.16* (0.07)
Intuitive style	0.02 (0.08)	0.10 (0.08)	0.09 (0.08)	-0.05 (0.07)
Openness				0.42*** (0.10)
Competence				0.20* (0.09)
Rabe-Hesketh and Skrondal R ²	.14	.12	.14	.43
Wald χ^2	20.64***	18.43***	22.59***	96.09***

DV Study 2	Model 1: Collaboration	Model 2: Openness	Model 3: Competence	Model 4: Mutual collaboration
Rational style	0.30*** (0.06)	0.47*** (0.06)	0.52*** (0.06)	0.04 (0.07)
Intuitive style	0.12 (0.08)	0.15 (0.08)	0.11 (0.07)	0.05 (0.07)
Openness				0.34*** (0.09)
Competence				0.20* (0.10)
R ²	.16	.32	.39	.36
F value	12.47***	29.82***	40.76***	17.62***

DV Study 3	Model 1: Openness	Model 2: Competence	Model 3: Mutual collaboration	Model 4: Quantity of product	Model 5: Weighted quantity of product
Rational style versus control	0.39** (0.15)	0.34* (0.17)	-0.18 (0.12)	-0.15 (0.13)	-0.31 (0.37)
openness			0.27*** (0.06)	0.00 (0.07)	0.02 (0.20)
Competence			0.30*** (0.06)	0.01 (0.06)	-0.04 (0.18)
Mutual collaboration				0.23** (0.07)	0.71*** (0.20)
R ²	.03	.02	.33	.07	.07
F value	6.82**	4.26*	39.31***	4.87**	4.71**

Note. All regression coefficients are unstandardized. The numbers in the parentheses are standard errors. Study 3: Openness (0 = low openness, 1 = high openness), competence (0 = low competence, 1 = high competence); Study 4: Rational style versus control (0 = control, 1 = rational). DV = dependent variable. * $p < .05$. ** $p < .01$. *** $p < .001$.

Participants and Design

Amazon's Mechanical Turk (MTurk) website was utilized to recruit 131 working adults residing in the United States (51.10% female; age: $M = 37.50$, $SD = 10.38$, US\$0.90 compensation). To decrease common method bias, we adopted a time-lagged design with a three-wave survey on 3 consecutive days. Participants reported their perceptions of a coworker's rational and intuitive decision-making styles (i.e., independent variables) on the first day, their perceptions of the coworker's openness and competence (i.e., mediators) on the second day, and their evaluation of mutual collaboration with the coworker (i.e., a dependent variable) on the third day.

Procedure and Measures

To ensure that participants (i.e., perceivers) had sufficient information to evaluate their coworker (i.e., an actor) and that their data points were comparable, participants were asked to complete three different surveys pertaining to their perceptions of a current coworker with whom they have worked for the longest amount of time. Participants reported their coworker's initials during each survey. During the first survey, participants

reported their perceptions of the coworker's rational and intuitive decision-making styles using the same scales as in Study 1 with the initials of the coworker as the subject of each statement (e.g., "[Coworker's initials] generally makes decisions that feel right to him or her"). Participants also indicated their demographic characteristics. During the second survey, participants reported their perceptions regarding their coworker's openness and competence using the same scales as in Study 1 with slight modification to fit the work situation (e.g., "[Coworker's initials] is competent at work"). During the third survey, participants reported their evaluation of the mutual collaboration with the coworker when they and their coworker had different opinions. They completed the same collaboration scale with a slight modification to indicate participants as the subject and their coworker as the object in each statement (e.g., "I discussed the issues with [Coworker's initials] to work out a mutually acceptable idea"). Finally, participants were debriefed.

Results

Associations among variables. To test the associations among the variables, ordinary least squares (OLS) regression analyses (see the regression models in Table 3) were conducted. In Study 2, an actor was a participant's coworker. The results of

Model 1 demonstrated that a perception of an actor's rational decision-making style was positively associated with an evaluation of the perceiver's mutual collaboration with the actor ($B = 0.30, p < .001$); however, a perception of an actor's intuitive decision-making style was not significantly associated with an evaluation of the perceiver's mutual collaboration ($B = 0.12, p = .115$). The results of Model 2 demonstrated that a perception of an actor's rational decision-making style was positively associated with a perception of the actor's openness ($B = 0.47, p < .001$). By contrast, a perception of an actor's intuitive decision-making style was not significantly associated with a perception of the actor's openness ($B = 0.15, p = .056$). The results of Model 4 demonstrated that a perception of an actor's openness was positively associated with an evaluation of the perceiver's mutual collaboration ($B = 0.34, p < .001$).

The results of Model 3 demonstrated that a perception of an actor's rational decision-making style was positively associated with a perception of the actor's competence ($B = 0.52, p < .001$). By contrast, a perception of an actor's intuitive decision-making style was not significantly associated with a perception of the actor's competence ($B = 0.11, p = .126$). The results of Model 4 demonstrated that a perception of an actor's competence was positively associated with an evaluation of the perceiver's mutual collaboration ($B = 0.20, p < .05$).

Perceptions of an actor's openness and competence were tested as simultaneous mediators using a bootstrapping method with 5,000 repetitions (Hayes, 2013). The results indicated that a perception of an actor's rational decision-making style was positively associated with an evaluation of the perceiver's mutual collaboration with the actor via the perceiver's evaluations of the actor's openness ($B = 0.16, 95\% \text{ CI} = [0.06, 0.32]$) and competence ($B = 0.11, 95\% \text{ CI} = [0.01, 0.21]$), which supported our expectations. Thus, the results of Study 2 replicated the findings of Study 1 using an investigation of perceived interactions with a coworker.

Study 3: A Manipulation of a Rational Decision-Making Style

In Study 3, we examined the same indirect effects via perceived openness and perceived competence as in Studies 1 and 2 by manipulating a perception of the counterpart's rational decision-making style. We also investigated performance in an idea generation task as an outcome of an intention to collaborate to clarify whether an intention to engage in mutual collaboration with others would inhibit or facilitate idea generation. Researchers have proposed two possible relationships between mutual collaboration and idea generation (Paulus & Brown, 2007). First, mutual collaboration involves an adherence to social conventions and an acceptance of influence from others' ideas, which inhibits idea generation. Alternatively, mutual collaboration involves exposure to an idea from another group member, which

facilitates the retrieval of ideas from relevant knowledge and therefore stimulates idea generation. Research supports the second proposition by demonstrating that exposure to the ideas of others simulates idea generation (Nijstad, Stroebe, & Lodewijckx, 2002) and increases the retrieval of unique ideas (Leggett Dugosh & Paulus, 2005). Therefore, we propose that a perception of an actor's rational decision-making style is indirectly and positively associated with a perceiver's task performance via the positive association between the perceiver's evaluations of the actor's openness/competence and the perceiver's intention to engage in mutual collaboration.

Participants and Design

We used MTurk to recruit 250 participants (US\$0.50 compensation). After removing two participants who answered the screening question incorrectly, the final sample consisted of 248 participants (61.3% female; age: $M = 37.63, SD = 11.28$). Participants were randomly assigned to be in the rational decision-making style condition ($N = 123$) or control condition ($N = 125$).

Procedure and Measures

Participants (i.e., perceivers) read that they would be presented with a task scenario regarding a new clothing store and that they would discuss and exchange messages with an assigned partner (i.e., an actor) about how this store could promote its services/products. In this scenario, the clothing store was a recent replacement of a university restaurant and was working on the promotion of its services/products to students. Participants also read that if their ideas were novel and practical, the store would be more likely to succeed and they and their partner would be more likely to get a promotion in the current company.

After reading the task scenario, participants answered a screening question to indicate whether they would "offer suggestions on how to move the clothing store to another location" or "generate and evaluate ideas to promote the clothing store and select the best ideas." The two participants who answered that they would offer suggestions on moving the store to another location were excluded from our dataset because their response indicated that they misunderstood the purpose of the task. Participants then indicated their initial promotion idea and were asked to provide a reason for their response. Participants were then asked to enter their initials.

Participants were informed that they were paired with "CRL" (i.e., the initials of their task partner) and that their responses were sent to their partner. Participants read that based on a random draw, their partner would first write to them a message about their idea. These messages served as the manipulations and differed depending on the experimental condition. Participants in the rational decision-making condition read, "Hello [Participant's Initials], My idea is

Table 4. An Example of Scoring Processes in Study 3.

	Descriptions
Scoring process 1: The number of ideas	A participant shared two ideas with his or her confederate. His or her score of “quantity” is 2.
Scoring process 2: Rating scores	Two raters evaluated the participant’s first idea as 5 and 5 in terms of novelty (1 = <i>not novel</i> , 5 = <i>very novel</i>) and as 3 and 3 in terms of practicality (1 = <i>not practical</i> , 5 = <i>very practical</i>). They also rated the participant’s second idea as 4 and 4 regarding novelty and as 5 and 3 regarding practicality.
Scoring process 3: The average scores of the two raters	The average novelty and practicality scores of the first idea are 5 (i.e., $[5 + 5]/2$) and 3 (i.e., $[3 + 3]/2$), respectively. The average novelty and practicality scores of the second idea are 4 (i.e., $[4 + 4]/2$) and 4 (i.e., $[5 + 3]/2$), respectively.
Scoring process 4: The quality score of each idea	The quality score of each idea is the average score of novelty and practicality. Therefore, the quality score of the first idea is 4 (i.e., $[5 + 3]/2$) and the quality score of the second idea is 4 (i.e., $[4 + 4]/2$).
Scoring process 5: Weighted quantity of product	Weighted quantity of product is a sum of all the quality scores generated by a specific participant. Therefore, the participant’s weighted quantity of product is 8 (i.e., $4 + 4$).

different from yours. I need to search for information about possible ideas and examine various options carefully before making a final choice.” The final choice in this message refers to the final idea that each individual party would later choose to share with their counterpart. By contrast, the message of the control condition did not involve any expression of a specific decision-making style. Participants in the control condition read, “Hello [Participant’s Initials], My idea is different from yours.”

They also read CRL’s idea, which was “making a video to promote the store’s products/services and posting it onto YouTube,” and reason, which was “I want to do something that can be fun, low cost, and help increase exposure of the store.” Afterward, participants reported their perceptions regarding their partner’s openness and competence as in Study 2, with the items modified with the initials of the partner (e.g., openness: “CRL would be interested in ideas and suggestions from me”; competence: “CRL would be effective at the task”).

Participants then reported their intention to engage in mutual collaboration as in Study 3, with the items modified to fit the initials of the partner (e.g., I would discuss the issues with CRL to work out a mutually acceptable idea). Next, participants were requested to generate and share ideas with their partners regarding how the store could promote its services/products. They could share up to five ideas that they and their partner would consider seriously. Given the nature of the idea generation task, the number of nonrepeated ideas (i.e., quantity of product) was used as one of the measures of task performance based on previous research (Harkins & Petty, 1982). Consistent with existing research that used both quantity and quality of product as performance indicators (Woolley et al., 2007), we also assigned different weights to different ideas based on the quality of the corresponding ideas. Therefore, another performance indicator (i.e., weighted quantity of product) was calculated by summing up

the quality scores of all the ideas generated by a specific participant (see an example of scoring processes in Table 4). Consistent with previous research on creativity (e.g., Teevan & Yu, 2017) and with the description of the task scenario, the quality of each idea was calculated by the average score of novelty and practicality for each idea proposed by the participants. The novelty and practicality of all the ideas were rated by two independent coders who were blind to the data of other variables, using a scale from 1 (*not novel*, *not practical*) to 5 (*very novel*, *very practical*). An acceptable degree of interrater reliability was found for the ratings of novelty, $ICC(2, 1) = 0.51$, $F(384, 384) = 3.09$, $p < .001$; $ICC(2, 2) = 0.68$, $F(384, 384) = 3.09$, $p < .001$, and practicality, $ICC(2, 1) = 0.30$, $F(384, 384) = 1.87$, $p < .001$; $ICC(2, 2) = 0.47$, $F(384, 384) = 1.87$, $p < .001$.

Afterward, participants reported their perceptions regarding CRL’s rational decision-making style as a manipulation check, using the rational decision-making style scale as in Study 1, modified to fit the task situation (e.g., CRL makes decisions in a logical and systematic way). Finally, participants provided demographic information and were debriefed.

Results

Manipulation check. The result of a t test indicated the significant effect of our manipulation, $t(246) = 3.80$, $p < .001$. Participants in the rational decision-making style condition ($M = 5.62$, $SD = 0.98$) perceived their task partner to be more rational in their decision-making than those in the control condition ($M = 5.11$, $SD = 1.11$).

Associations among variables. The associations among variables were examined using OLS regression analyses (see the regression models in Table 3). The results of Models 1 and 2 demonstrated that a perception of an actor’s rational decision-making style was positively associated with perceptions

of the actor's openness ($B = 0.39, p < .01$) and competence ($B = 0.34, p < .05$). The results of Model 3 demonstrated that perceptions of an actor's openness ($B = 0.27, p < .001$) and competence ($B = 0.30, p < .001$) were positively associated with the perceiver's intention to collaborate.

Perceptions of an actor's openness and competence were tested as simultaneous intermediary variables using the same bootstrapping method as in Study 2. The results demonstrated significant indirect associations between perceptions of an actor's rational decision-making style on the perceiver's intention to engage in mutual collaboration with the actor through perceptions of openness ($B = 0.11, 95\% \text{ CI} = [0.04, 0.23]$) and competence ($B = 0.10, 95\% \text{ CI} = [0.01, 0.24]$).

The results of Models 4 and 5 demonstrated that a perceiver's intention to engage in mutual collaboration was positively associated with the perceiver's task performance (quantity of product: $B = 0.23, p < .01$; weighted quantity of product: $B = 0.71, p < .001$). The bootstrapping results demonstrated that perceptions of an actor's rational decision-making significantly increased a perceiver's task performance via the positive associations between perceptions of an actor's openness and the perceiver's intention to engage in mutual collaboration (quantity of product: $B = 0.02, 95\% \text{ CI} = [0.01, 0.06]$; weighted quantity of product: $B = 0.07, 95\% \text{ CI} = [0.02, 0.19]$) and between perceptions of an actor's competence and the perceiver's intention to engage in mutual collaboration (quantity of product: $B = 0.02, 95\% \text{ CI} = [0.003, 0.073]$; weighted quantity of product: $B = 0.07, 95\% \text{ CI} = [0.01, 0.22]$), which supported our expectations. The results of Study 3 replicated the findings in Studies 1 and 2 with an experiment to strengthen the causal effects regarding perceptions of a rational decision-making style and demonstrated a significant relationship between an intention to engage in mutual collaboration and task performance.

Study 4: A Manipulation of Rational Versus Intuitive Decision-Making Styles

In Study 4, we used an experimental manipulation to examine whether perceptions of an actor's rational and intuitive decision-making styles would elicit different levels of intention to collaborate from perceivers. To increase the generalizability and avoid measurement similarity between a rational decision-making style and mutual collaboration (i.e., both concepts involving deliberative processes), we also included a measure of an intention to collaborate *without* the involvement of deliberative processes (i.e., simple collaboration). Therefore, we examined the perceptual effects of an actor's rational and intuitive decision-making styles on intentions to collaborate (i.e., mutual and simple collaborations).

The findings of Studies 1 and 2 indicated significant, positive associations between perceptions of an actor's rational decision-making style and the perceivers' evaluation of

mutual collaboration, but nonsignificant associations between perceptions of an actor's intuitive decision-making style and the perceivers' evaluation of mutual collaboration. These findings suggest that perceptions of an actor's rational decision-making style lead the perceivers to collaborate with the actor more than do perceptions of an actor's intuitive decision-making style. In addition, researchers have regarded intuitive judgments as frequently biased (Kahneman & Tversky, 1973). For instance, intuitive decision makers often resist dissenting information (Jonas & Frey, 2003), whereas rational decision makers tend to search for relevant information before making decisions (Janis & Mann, 1977). Consequently, a rational decision-making style is a more preferable characteristic for eliciting collaboration than an intuitive decision-making style from a perspective of bias avoidance. Therefore, we propose that an individual's perception of an actor's rational versus intuitive decision-making style increases the individual's intention to collaborate with the actor.

We also examined whether low task interdependence and high time pressure would weaken the positive associations between perceptions of an actor's rational versus intuitive decision-making style and the perceivers' collaborative intentions with the actor. Task interdependence refers to the extent to which individuals need information and support from another individual to complete their task (van der Vegt, van de Vliert, & Oosterhof, 2003), whereas time pressure indicates the extent to which individuals feel that they have insufficient time to complete a task (Wu, Parker, & de Jong, 2014).

Furthermore, perceptions of an actor's rational and intuitive decision-making styles may be differentially useful in eliciting collaborative intentions based on *the task-style match*. Task interdependence promotes task information processing (e.g., a use of electronic media to share information; Jarvenpaa & Staples, 2000), whereas time pressure decreases task information processing (e.g., a motivation to process various information; De Dreu, 2003). Given that the features of a rational decision-making style (e.g., deliberative processes and an exploration of different decision alternatives) are consistent with task information processing, people may prefer to collaborate with an individual who signals his or her rational decision-making under situations with high task interdependence or without time pressure. By contrast, low task interdependence may foster the use of intuitive judgments, given that this situation does not require using the information from another individual to complete a task assignment (Somech, Desivilya, & Lidogoster, 2009) and individuals tend to utilize information that is easily accessible (e.g., personal intuitions) to minimize cognitive efforts (Friedrich, 1993). Time pressure also leads individuals to rely on their intuitions to make decisions (Kruglanski & Freund, 1983). An intuitive decision-making style may create more positive impressions under time constraints because it can signal adaptiveness to environmental demands

(Johnston, Driskell, & Salas, 1997). Given the prevalence and adaptiveness of intuitive judgments in a low interdependence task or under time pressure, people in such situations may perceive an actor with an intuitive decision-making style as a qualified collaborator rather than a biased evaluator. Thus, we propose that a low interdependence task or time pressure weakens the positive association between an individual's perception of an actor's rational versus intuitive decision-making style and the individual's intention to collaborate with the actor.

Based on our previous arguments and significant findings regarding the positive, indirect associations between perceptions of an actor's rational decision-making style and the perceivers' mutual collaboration with the actor in Studies 1 to 3, we predict that compared with perceptions of an actor's intuitive decision-making style, perceptions of an actor's rational decision-making style will elicit the perceivers' intention to collaborate via increased perceptions of openness and competence. Research has demonstrated that people who base decisions on their intuition tend to be confident in their decisions (Phillips, Paziienza, & Ferrin, 1984), which may signal their resistance to alternative ideas and suggestions. Furthermore, individuals who make intuitive judgments often produce inaccurate outcomes (Kahneman & Tversky, 1973), which can signal a lack of competence. Thus, we propose that an individual's perceptions of an actor's openness and competence mediate the positive association between the individual's perception of an actor's rational versus intuitive decision-making style and the individual's intention to collaborate with the actor.

Participants and Design

We used the same recruitment method as in Studies 3 and 4 to recruit a different sample from MTurk ($N = 399$, US\$0.50 compensation). After removing 32 participants (8.02% of 399 participants) who answered the screening question incorrectly, the final sample consisted of 367 participants (55.31% female; age: $M = 39.10$, $SD = 12.30$). Participants were randomly assigned to be in the rational ($N = 184$) or intuitive ($N = 183$) decision-making style condition.

Procedure

Participants first evaluated their rational and intuitive decision-making styles on a scale of 0 (*never*) to 100 (*very frequently*), using two items that were "I tend to search for information about possible decision alternatives and to examine various options carefully before making decisions," and "I tend to rely on personal instincts and intuitions to make decisions and to make decisions that feel right." They also indicated their initials.

And then, participants (i.e., perceivers) were informed that they would be assigned a task partner (i.e., an actor) for the study and that they would read about the partner's

decision-making style and evaluate the person based on the description. Afterward, participants answered a screening question to indicate whether they would be evaluating the creativity of different ideas or evaluating their task partner based on a description. The 32 participants who answered that they would be evaluating the creativity of different ideas were excluded from our dataset because their response indicated that they misunderstood the purpose of the task.

Next, participants saw an animation page displaying a waiting process symbol and subsequently read that they had been paired with "HN" and were then presented with a description of HN. Participants in the rational decision-making style condition were informed that HN had reported a score of 83 on the item, "I tend to search for information about possible decision alternatives and to examine various options carefully before making decisions," whereas participants in the intuitive decision-making style condition were informed that HN had reported a score of 83 on the item "I tend to rely on personal instincts and intuitions to make decisions and to make decisions that feel right." A score of 83 was considered as high in the corresponding item because the score ranged from 0 = *never* to 100 = *very frequently*.

Participants then rated their perceptions of HN's openness ($\alpha = .87$) and competence ($\alpha = .92$), using the same scales as in Studies 3 and 4 with the initials of the task partner as the subject of each statement (e.g., openness: "HN would be interested in ideas and suggestions from me"; competence: "HN would be effective at the task"). Next, participants rated their collaborative intentions with HN under four different task scenarios (in a random order). These task scenarios were differentiated based on the levels of task interdependence and time pressure (i.e., 2 [low vs. high task interdependence] \times 2 [low vs. high time pressure]). For instance, the task scenario for the *high* [low] interdependence and *high* [low] time pressure task was presented as follows:

This task involves multiple subjective decisions. This task requires *you and your task partner to make decisions together*/ [you to make some of the decisions and your task partner to make other decisions]. In other words, *you and your task partner have to exchange information and advice in order to complete your work*/ [you and your task partner do not have to exchange information and advice in order to complete your work]. There is *a strict and short* [no] time limitation for each decision in the task.

In each task scenario, participants rated their collaborative intentions (1 = *not at all*, 7 = *to a great extent*) using the 3-item scales of mutual collaboration (e.g., "I would discuss the issues with HN to work out a mutually acceptable idea"; range of α in the four task scenarios = .92-.95) and simple collaboration (e.g., "I would collaborate with HN"; range of α in the four task scenarios = .91-.94).

Afterward, participants reported their perceptions regarding HN's rational and intuitive decision-making styles as manipulation checks, using the rational ($\alpha = .96$) and

intuitive ($\alpha = .96$) decision-making style scales as in Study 1, modified to fit the task situation (e.g., rational: “HN makes decisions in a logical and systematic way”; intuitive: “When HN makes decisions, he or she tends to rely on his or her intuition”). Participants were also asked to rate the four task scenarios on the level of task interdependence and time pressure associated with each task (1 = *strongly disagree*, 7 = *strongly agree*). The three items of task interdependence (e.g., “I would have to work closely with HN”; range of α in the four task scenarios = .91-.97) were adapted from van der Vegt et al. (2003). The three items of time pressure (e.g., “This task would require me to work quickly”; range of α in the four task scenarios = .74-.89) were adapted from Wu et al. (2014).

Results

Manipulation check. The *t* test results indicated the effectiveness of our manipulations. Participants in the rational decision-making style condition ($M = 5.80$, $SD = 0.83$) perceived their task partner to be more rational in their decision-making than did those in the intuitive decision-making style condition, $M = 3.68$, $SD = 1.51$; $t(365) = 16.73$, $p < .001$, whereas participants in the intuitive decision-making style condition ($M = 5.90$, $SD = 0.96$) perceived their task partner to be more intuitive in their decision-making than those in the rational decision-making style condition, $M = 3.62$, $SD = 1.43$; $t(365) = 17.87$, $p < .001$.

Participants also reported higher levels of task interdependence in the scenarios with high interdependence tasks ($M = 5.63$, $SD = 1.14$) than with low interdependence tasks, $M = 3.82$, $SD = 1.84$; $t(366) = 15.66$, $p < .001$. In addition, participants reported experiencing higher time pressure in task scenarios with a strict and short time limitation ($M = 4.61$, $SD = 1.11$) than those with no time restriction, $M = 3.02$, $SD = 1.58$; $t(366) = 15.85$, $p < .001$.

Collaborative intentions. Given that the participants randomly read the information about either an actor’s rational or intuitive decision-making style (i.e., decision-making styles as a between-subject factor) and four different scenarios distinguished based on different levels of task interdependence and time pressure (i.e., task interdependence and time pressure as within-subject factors), mixed-effect regression analyses with participant identification number as a random effect variable were conducted to examine how perceptions of an actor’s decision-making style, task interdependence, and time pressure influenced intentions to engage in mutual and simple collaborations.

Consistent with our expectation, perceptions of an actor’s rational versus intuitive decision-making style increased the perceivers’ intentions to collaborate with the actor ($B_{range} = 0.44-0.52$, $ps < .001$; see the results in Table 5). However, we did not find significant two-way interaction effects between perceptions of an actor’s decision-making style and task

interdependence ($B_{range} = 0.01-0.01$, $ps \geq .882$) or between perceptions of an actor’s decision-making style and time pressure ($B_{range} = -0.01-0.08$, $ps \geq .391$) on the perceivers’ intentions to collaborate. We also did not find a significant three-way interaction effect of perceived decision-making style, task interdependence, and time pressure on collaborative intentions ($B_{range} = 0.21-0.23$, $ps \geq .235$). Thus, the results demonstrated consistent and positive associations between perceptions of an actor’s rational versus intuitive decision-making style and collaborative intentions across four task scenarios. Internal reliability of the aggregated items across the four scenarios also supported the aggregated collaboration scales ($\alpha s \geq .95$). Therefore, we aggregated all the four measures of mutual and simple collaborations, respectively, in our subsequent analyses.

Associations among variables. To test the associations among the variables, OLS regression analyses were conducted with aggregated measures of mutual and simple collaborations as dependent variables (see the results in Table 6). The results of Models 1 and 2 demonstrated that perceptions of an actor’s rational versus intuitive decision-making style increased the perceivers’ intentions to collaborate with the actor ($B_{range} = 0.44-0.52$, $ps < .001$). The results of Model 3 demonstrated that perceptions of an actor’s rational versus intuitive decision-making style increased the perceptions of the actor’s openness ($B = 1.06$, $p < .001$). The results of Models 5 and 6 demonstrated that a perception of an actor’s openness was positively associated with the perceivers’ intentions to collaborate with the actor ($B_{range} = 0.29-0.33$, $ps < .001$). The results of Model 4 also demonstrated that perceptions of an actor’s rational versus intuitive decision-making style increased the perceptions of the actor’s competence ($B = 1.01$, $p < .001$). The results of Models 5 and 6 demonstrated that a perception of an actor’s competence was positively associated with the perceivers’ intentions to collaborate with the actor ($B_{range} = 0.27-0.34$, $ps < .001$).

The bootstrapping results indicated that a perception of an actor’s rational versus intuitive decision-making style increased the perceivers’ intentions to collaborate via perceptions of the actor’s openness (mutual collaboration: $B = 0.35$, 95% CI = [0.16, 0.53]; simple collaboration: $B = 0.31$, 95% CI = [0.14, 0.50]) and competence (mutual collaboration: $B = 0.28$, 95% CI = [0.12, 0.47]; simple collaboration: $B = 0.34$, 95% CI = [0.17, 0.53]). Therefore, our results replicated and extended our findings of Studies 1 to 3 by demonstrating that, compared with an intuitive decision-making style, a rational decision-making style consistently created desirable social perceptions and elicited intentions to collaborate in multiple task situations.

General Discussion

We offered converging evidence that a perception of an actor’s rational decision-making style is positively associated with a perceiver’s collaboration via the perceiver’s evaluations of the

Table 5. Mixed-Effect Regression Analyses and Descriptive Statistics of Each Condition in Study 4.

DVs	Mutual collaboration <i>B</i> (SE)	Simple collaboration <i>B</i> (SE)
Main effects		
Rational style versus intuitive style	0.44*** (0.12)	0.52*** (0.12)
Task interdependence	0.49*** (0.05)	0.36*** (0.05)
Time pressure	-0.16** (0.05)	-0.15** (0.05)
Two-way interaction effects		
Rational Style Versus Intuitive Style × Task Interdependence	0.01 (0.10)	0.01 (0.09)
Rational Style Versus Intuitive Style × Time Pressure	-0.01 (0.10)	0.08 (0.09)
Task Interdependence × Time Pressure	0.03 (0.10)	0.05 (0.09)
Three-way interaction effects		
Rational Style Versus Intuitive Style × Task Interdependence × Time Pressure	0.23 (0.20)	0.21 (0.18)
	Mutual collaboration	Simple collaboration
Rational style		
<i>M</i>	5.60	5.70
<i>SD</i>	1.02	1.03
Intuitive style		
<i>M</i>	5.16	5.17
<i>SD</i>	1.23	1.23
High task interdependence		
<i>M</i>	5.63	5.61
<i>SD</i>	1.14	1.18
Low task interdependence		
<i>M</i>	5.14	5.26
<i>SD</i>	1.45	1.38
High time pressure		
<i>M</i>	5.30	5.36
<i>SD</i>	1.24	1.29
Low time pressure		
<i>M</i>	5.46	5.51
<i>SD</i>	1.20	1.17

Note. All regression coefficients are unstandardized. The numbers in the parentheses are standard errors. DV = dependent variable.
 p* < .05. *p* < .01. ****p* < .001.

Table 6. OLS Regression Analyses in Study 4.

DV predictors	Model 1: Mutual collaboration	Model 2: Simple collaboration	Model 3: Openness	Model 4: Competence	Model 5: Mutual collaboration	Model 6: Simple collaboration
Rational style versus intuitive style	0.44*** (0.12)	0.52*** (0.12)	1.06*** (0.11)	1.01*** (0.12)	-0.19 (0.11)	-0.13 (0.11)
Openness					0.33*** (0.06)	0.29*** (0.06)
Competence					0.27*** (0.06)	0.34*** (0.06)
<i>R</i> ²	.04	.05	.20	.17	.30	.34
<i>F</i> value	13.73***	19.41***	92.67***	75.56***	52.01***	62.14***
Rational style						
<i>M</i>	5.60	5.70	5.63	5.77		
<i>SD</i>	1.02	1.03	0.78	0.87		
Intuitive style						
<i>M</i>	5.16	5.17	4.57	4.75		
<i>SD</i>	1.23	1.23	1.27	1.32		

Note. All regression coefficients are unstandardized. The numbers in the parentheses are standard errors. OLS = ordinary least squares; DV = dependent variable.
 p* < .05. *p* < .01. ****p* < .001.

actor's openness and competence, regardless of task interdependence or time pressure. These findings involved a comparison between a perception of an actor's rational decision-making style and a perception of an actor's intuitive decision-making style or a nonspecific decision-making style. Perceptions of an actor's openness and competence not only served as inferred characteristics of a rational decision-making style but also directly enhanced the perceivers' intentions to collaborate. In addition, perceptions of an actor's rational decision-making style were indirectly and positively related to the perceivers' task performance through the positive association between perceptions of the actor's openness/competence and the perceivers' intentions to engage in mutual collaboration with the actor. Thus, perceptions of an actor's rational decision-making style motivate the pursuit of mutual collaboration and enhance task performance through inferences of the actor's openness and competence.

Theoretical Implications

Our research advances the theories regarding the antecedents of collaboration. Past research has indicated that collaboration can be promoted by shared understanding (Hinds & Weisband, 2003) or gender diversity (Bear & Woolley, 2011). In addition to group dynamics and composition as important precursors of collaboration, our research implicates social perceptions of decision-making styles in that a display of a rational rather than intuitive decision-making style increased perceptions of openness and competence, which subsequently increased a perceiver's intention to collaborate. Our findings also suggest an advantage of displaying a rational rather than intuitive decision-making style, which differs from the intrapersonal perspective that both rational and intuitive styles benefit satisfactory decision outcomes (Parker et al., 2007).

Our findings regarding perceived openness and competence as mediators add to the theories of goal/intention inference and expectation states, respectively. Previous research supported the theory of goal/intention inference by identifying behavioral cues that foster goal inference. For instance, perceivers tend to infer whether an observation target has a goal of helping based on the target's level of effort (Dik & Aarts, 2007). By extension, our findings regarding openness relate to the theory of goal/intention inference by implicating goal/intention inferences based on perceptions of an actor's rational decision-making style. Specifically, when perceivers evaluate an actor's rational decision-making style, they may infer the actor's goal/intention as an exploration of different decision options through openness to alternative perspectives. In addition, the theory of expectation states has traditionally emphasized an individual's external attributes, including age and gender, as competence-relevant cues (Berger, Rosenholtz, & Zelditch, 1980), whereas our findings suggest that a decision-making feature (i.e., a rational decision-making style) can serve as a cue that signals competence.

Our results offer a novel implication for the relationships between rationality/intuition and collaboration-relevant constructs. Research on economic games has considered rationality and intuition as two opposing ends of a single dimension and demonstrated an intrapersonal, positive effect of intuition (vs. deliberation) on cooperation (Rand et al., 2014). Cooperation in economic games could be relevant to collaboration in the present research. Cooperation involves a player's choices that increase all the participants' utility (Rand et al., 2014), whereas mutual collaboration in the present research involves working together to explore solutions that satisfy all the participants' concerns (De Dreu & van Vianen, 2001).

Previous research also supported the effect of decision speed on collaboration from an interpersonal perspective by demonstrating the positive impact of a speedy decision on a perceiver's willingness to collaborate with the decision maker (van de Calseyde et al., 2014). In contrast to a focus on decision speed, our research focuses on interpersonal effects of decision-making styles. We also identify rational and intuitive decision-making styles as two separate constructs¹ rather than two opposing ends of a spectrum. Our research also demonstrates that perceptions of an actor's rational decision-making style increase a perceiver's collaboration via perceptions of the actor's openness and competence. Thus, our research complements previous research on collaboration and the interpersonal effects of decision speed by investigating observable features of other decision-making processes.

The past and present findings on decision-making styles echo the social relations model during group processes (Ladbury & Hinsz, 2012, 2018). The social relations model examines perceptions of a participant in a social interaction from different sources, such as the participant's evaluations and others' evaluations. These theoretical models extend self-evaluated characteristics by incorporating perceptions of others' characteristics. Specifically, most research on decision-making styles focuses on self-rated characteristics such as a positive association between an individual's rational decision-making style and the individual's self-esteem (Batool et al., 2017). In contrast, our research examines decision-making styles from a perceiver's viewpoint. An individual may perceive an actor with a rational decision-making style as open to alternative suggestions and competent in a task, and therefore engage in mutual collaboration with the actor. Thus, our findings contribute to research on decision-making styles by exploring the social perceptual effects of an actor's decision-making style.

Future Research

The findings of the present research implicate opportunities for future research. Although we found significant and positive effects regarding perceptions of an actor's rational versus intuitive decision-making style under time pressure in

Study 4, these effects may be weaker under situations with a preference of decision speed over accuracy. In such situations, decision makers face a trade-off between a fast decision-making process and an accurate outcome that can be obtained with effortful and deliberative analyses. Despite the trade-off between speed and effort, a reasonable trade-off can be achieved based on whether the gain in accuracy is significantly higher than the cost of effort, such as time consumption (Gigerenzer & Gaissmaier, 2010). Thus, in a situation in which rapid decision-making processes are more important than accurate decision outcomes, a rational decision-making style may become less preferred than an intuitive decision-making style.

The significant and positive associations between perceptions of an actor's rational versus intuitive decision-making style and collaborative intentions may also be weaker in other situations. For instance, people may prefer an intuitive leader over a rational leader in unpredictable situations where decision makers have limited information or difficulty in collecting information. In such situations, the intuitive leader can provide directions for actions and decisions by drawing on his or her previously relevant experience rather than relying on external information (Khatri & Ng, 2000). Furthermore, a collaborative preference for people with a rational style over those with an intuitive style may be attenuated when tasks involve subjective judgments. Research has found that making judgments based on analytical processes often leads to worse evaluations than does making judgments based on intuition in tasks with subjective judgments (Wilson & Schooler, 1991). Moreover, research on person-group fit predicts that similar values between members will positively influence social cohesion (Seong, Kristof-Brown, Park, Hong, & Shin, 2015). This suggests that a perceiver with a higher level of intuitive decision-making style may have a lower intention to collaborate with rational decision makers over intuitive decision makers.² Thus, future research could explore these moderators that weaken the positive associations between perceptions of an actor's rational versus intuitive decision-making style and collaborative intentions.

Conclusion

Our research serves as the pioneering investigation of how a decision-making style affects collaborative intentions via social perceptions. Our findings demonstrated that people tend to collaborate with a rational decision maker because the rational decision maker is perceived as being open to alternative perspectives and being competent. These consistent findings were uncovered in four studies that varied in terms of methods, participant samples, performance tasks, and collaboration measures. Finally, our investigation lays the groundwork for future research regarding how perceptions of others' decision-making styles influence a perceiver's social interactions with the others.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by the Singapore Ministry of Education Academic Research Fund Tier 1 (Grant C242/MSS13S015).

Supplemental Material

Supplemental material is available online with this article.

Notes

1. The results of confirmatory factor analyses in Studies 1 and 2 supported separation of rational and intuitive decision-making styles (see the results on page 10 in the supplemental materials).
2. The results from Study 4 support the association between decision-making style match and collaboration (see the results on page 13 in the supplemental materials).

ORCID iD

Ming-Hong Tsai  <https://orcid.org/0000-0003-4524-2866>

References

- Barnard, C. (1938). *The functions of the executive*. Cambridge, MA: Harvard University Press.
- Batool, N., Riaz, M. N., Riaz, M. A., & Akhtar, M. (2017). Self-related factors and decision making styles among early adults. *Journal of Pakistan Medical Association, 67*, 731-734.
- Bayram, N., & Aydemir, M. (2017). Decision-making styles and personality traits. *International Journal of Recent Advances in Organizational Behaviour and Decision Sciences, 3*, 905-915.
- Bear, J. B., & Woolley, A. W. (2011). The role of gender in team collaboration and performance. *Interdisciplinary Science Reviews, 36*, 146-153.
- Beersma, B., & De Dreu, C. (2003). Social motives in integrative negotiation: The mediating influence of procedural fairness. *Social Justice Research, 16*, 217-239.
- Berger, J., Rosenholtz, S. J., & Zelditch, M. (1980). Status organizing processes. *Annual Review of Sociology, 6*, 479-508.
- Betsch, C. (2004). Präferenz für intuition und deliberation [Preference for intuition and deliberation] (PID). *Zeitschrift für Differentielle und Diagnostische Psychologie, Journal of Differential and Diagnostic Psychology, 25*, 179-197.
- Bodenhausen, G. V., & Hugenberg, K. (2009). Attention, perception, and social cognition. In F. Strack & J. Förster (Eds.), *Social cognition: The basis of human interaction* (pp. 1-22). Philadelphia, PA: Psychology Press.
- De Dreu, C. K. W. (2003). Time pressure and closing of the mind in negotiation. *Organizational Behavior and Human Decision Processes, 91*, 280-295.
- De Dreu, C. K. W., & van Vianen, A. E. M. (2001). Managing relationship conflict and the effectiveness of organizational teams. *Journal of Organizational Behavior, 22*, 309-328.

- Delaney, R., Strough, J., Parker, A. M., & de Bruin, W. B. (2015). Variations in decision-making profiles by age and gender: A cluster-analytic approach. *Personality and Individual Differences, 85*, 19-24.
- Dewberry, C., Juanchich, M., & Narendran, S. (2013). Decision-making competence in everyday life: The roles of general cognitive styles, decision-making styles and personality. *Personality and Individual Differences, 55*, 783-788.
- Dik, G., & Aarts, H. (2007). Behavioral cues to others' motivation and goal pursuits: The perception of effort facilitates goal inference and contagion. *Journal of Experimental Social Psychology, 43*, 727-737.
- Driskell, J. E., & Mullen, B. (1990). Status, expectations, and behavior: A meta-analytic review and test of the theory. *Personality and Social Psychology Bulletin, 16*, 541-553.
- Edmondson, A. C., Kramer, R. M., & Cook, K. S. (2004). Psychological safety, trust, and learning in organizations: A group-level lens. In R. Kramer & K. Cook (Eds.), *Trust and distrust in organizations: Dilemmas and approaches* (Vol. 12, pp. 239-272). New York, NY: Russell Sage Foundation.
- Ellinger, A. E. (2000). Improving marketing/logistics cross-functional collaboration in the supply chain. *Industrial Marketing Management, 29*, 85-96.
- Erenda, I., Mesko, M., & Bukovec, B. (2014). Intuitive decision-making and leadership competencies of managers in Slovenian automotive industry. *Journal of Universal Excellence, 3*, 87-101.
- Friedrich, J. (1993). Primary error detection and minimization (PEDMIN) strategies in social cognition: A reinterpretation of confirmation bias phenomena. *Psychological Review, 100*, 298-319.
- Gambetta, D. (1988). *Trust: Making and breaking cooperative relations*. New York, NY: Basil Blackwell.
- Geisler, M., & Allwood, C. M. (2018). Relating decision-making styles to social orientation and time approach. *Journal of Behavioral Decision Making, 31*, 415-429.
- Gigerenzer, G., & Gaissmaier, W. (2010). Heuristic decision making. *Annual Review of Psychology, 62*, 451-482.
- Harkins, S. G., & Petty, R. E. (1982). Effects of task difficulty and task uniqueness on social loafing. *Journal of Personality and Social Psychology, 43*, 1214-1229.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Hinds, P. J., Carley, K. M., Krackhardt, D., & Wholey, D. (2000). Choosing work group members: Balancing similarity, competence, and familiarity. *Organizational Behavior and Human Decision Processes, 81*, 226-251.
- Hinds, P. J., & Weisband, S. P. (2003). Knowledge sharing and shared understanding in virtual teams. In C. B. Gibson & S. G. Cohen (Eds.), *Virtual teams that work: Creating conditions for virtual team effectiveness* (pp. 21-36). San Francisco, CA: Jossey-Bass.
- Hinsz, V. B., Tindale, R. S., & Vollrath, D. A. (1997). The emerging conceptualization of groups as information processors. *Psychological Bulletin, 121*, 43-64.
- Ho, G. C., Shih, M., & Walters, D. J. (2012). Labels and leaders: The influence of framing on leadership emergence. *The Leadership Quarterly, 23*, 943-952.
- Janis, I. L. (1989). *Crucial decisions: Leadership in policymaking and crisis management*. New York, NY: Free Press.
- Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice and commitment*. New York, NY: Free Press.
- Jarvenpaa, S. L., & Staples, D. S. (2000). The use of collaborative electronic media for information sharing: An exploratory study of determinants. *The Journal of Strategic Information Systems, 9*, 129-154.
- Johnston, J. H., Driskell, J. E., & Salas, E. (1997). Vigilant and hypervigilant decision making. *Journal of Applied Psychology, 82*, 614-622.
- Jonas, E., & Frey, D. (2003). Information search and presentation in advisor-client interactions. *Organizational Behavior and Human Decision Processes, 91*, 154-168.
- Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *The American Economic Review, 93*, 1449-1475.
- Kahneman, D., & Tversky, A. (1973). On the psychology of prediction. *Psychological Review, 80*, 237-251.
- Khatri, N., & Ng, H. A. (2000). The role of intuition in strategic decision making. *Human Relations, 53*, 57-86.
- Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay-inferences: Effects on impression primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology, 19*, 448-468.
- Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin, 127*, 187-208.
- Ladbury, J. L., & Hinsz, V. B. (2012). Gaining insight into team processes on cognitive tasks with member expectations and the social relations model. In E. Salas, S. M. Fiore, & M. P. Letsky (Eds.), *Theories of team cognition: Cross-disciplinary perspectives* (pp. 373-401). New York, NY: Routledge.
- Ladbury, J. L., & Hinsz, V. B. (2018). How the distribution of member expectations influences cooperation and competition in groups: A social relations model analysis of social dilemmas. *Personality and Social Psychology Bulletin, 44*, 1502-1518.
- Leggett Dugosh, K., & Paulus, P. B. (2005). Cognitive and social comparison processes in brainstorming. *Journal of Experimental Social Psychology, 41*, 313-320.
- Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science, 50*, 1477-1490.
- Lieberman, M. D. (2007). Social cognitive neuroscience: A review of core processes. *Annual Review of Psychology, 58*, 259-289.
- Mitchell, R., Nicholas, S., & Boyle, B. (2009). The role of openness to cognitive diversity and group processes in knowledge creation. *Small Group Research, 40*, 535-554.
- Nijstad, B. A., Stroebe, W., & Lodewijckx, H. F. M. (2002). Cognitive stimulation and interference in groups: Exposure effects in an idea generation task. *Journal of Experimental Social Psychology, 38*, 535-544.
- Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychology: General, 130*, 466-478.
- Parker, A. M., De Bruin, W. B., & Fischhoff, B. (2007). Maximizers versus satisficers: Decision-making styles, competence, and outcomes. *Judgment and Decision Making, 2*, 342-350.

- Paulus, P. B., & Brown, V. R. (2007). Toward more creative and innovative group idea generation: A cognitive-social-motivational perspective of brainstorming. *Social and Personality Psychology Compass*, 1, 248-265.
- Phillips, S. D., Paziienza, N. J., & Ferrin, H. H. (1984). Decision-making styles and problem-solving appraisal. *Journal of Counseling Psychology*, 31, 497-502.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.
- Raab, M., & Laborde, S. (2011). When to blink and when to think: Preference for intuitive decisions results in faster and better tactical choices. *Research Quarterly for Exercise and Sport*, 82, 89-98.
- Rand, D. G., Peysakhovich, A., Kraft-Todd, G. T., Newman, G. E., Wurzbacher, O., Nowak, M. A., & Greene, J. D. (2014). Social heuristics shape intuitive cooperation. *Nature Communications*, 5, Article 3677.
- Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement*, 55, 818-831.
- Seong, J. Y., Kristof-Brown, A. L., Park, W.-W., Hong, D.-S., & Shin, Y. (2015). Person-group fit: Diversity antecedents, proximal outcomes, and performance at the group level. *Journal of Management*, 41, 1184-1213.
- Somech, A., Desivilya, H. S., & Lidogoster, H. (2009). Team conflict management and team effectiveness: The effects of task interdependence and team identification. *Journal of Organizational Behavior*, 30, 359-378.
- Tead, O. (1935). *The art of leadership*. New York, NY: McGraw-Hill.
- Teevan, J., & Yu, L. (2017, May). *Bringing the wisdom of the crowd to an individual by having the individual assume different roles*. Paper presented at the CHI Conference on Human Factors in Computing Systems, Denver, CO.
- Tjosvold, D., & Sun, H. F. (2003). Openness among Chinese in conflict: Effects of direct discussion and warmth on integrative decision making. *Journal of Applied Social Psychology*, 33, 1878-1897.
- Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods*, 43, 692-700.
- Tröster, C., & van Knippenberg, D. (2012). Leader openness, nationality dissimilarity, and voice in multinational management teams. *Journal of International Business Studies*, 43, 591-613.
- Tsai, M.-H., & Bendersky, C. (2016). The pursuit of information sharing: Expressing task conflicts as debates vs. disagreements increases perceived receptivity to dissenting opinions in groups. *Organization Science*, 27, 141-156.
- Tseng, H., Wang, C.-H., Ku, H.-Y., & Sun, L. (2009). Key factors in online collaboration and their relationship to teamwork satisfaction. *Quarterly Review of Distance Education*, 10, 195-206.
- van de Calseyde, P. P. F. M., Keren, G., & Zeelenberg, M. (2014). Decision time as information in judgment and choice. *Organizational Behavior and Human Decision Processes*, 125, 113-122.
- van der Veegt, G. S., van de Vliert, E., & Oosterhof, A. A. D. (2003). Informational dissimilarity and organizational citizenship behavior: The role of intrateam interdependence and team identification. *Academy of Management Journal*, 46, 715-727.
- Vazire, S. (2010). Who knows what about a person? The Self-Other Knowledge Asymmetry (SOKA) model. *Journal of Personality and Social Psychology*, 98, 281-300.
- Wilson, T. D., & Schooler, J. W. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, 60, 181-192.
- Wood, N. L., & Highhouse, S. (2014). Do self-reported decision styles relate with others' impressions of decision quality? *Personality and Individual Differences*, 70, 224-228.
- Woolley, A. W., Hackman, J. R., Jerde, T. E., Chabris, C. F., Bennett, S. L., & Kosslyn, S. M. (2007). Using brain-based measures to compose teams: How individual capabilities and team collaboration strategies jointly shape performance. *Social Neuroscience*, 2, 96-105.
- Wu, C.-H., Parker, S. K., & de Jong, J. P. J. (2014). Need for cognition as an antecedent of individual innovation behavior. *Journal of Management*, 40, 1511-1534.