# Social Psychological and Personality Science http://spp.sagepub.com/

Thought Calibration: How Thinking Just the Right Amount Increases One's Influence and Appeal Daniella M. Kupor, Zakary L. Tormala, Michael I. Norton and Derek D. Rucker Social Psychological and Personality Science 2014 5: 263 originally published online 12 September 2013

DOI: 10.1177/1948550613499940

The online version of this article can be found at: http://spp.sagepub.com/content/5/3/263

Published by:

**\$**SAGE

http://www.sagepublications.com

On behalf of:

Society for Personality and Social Psychology

Association for Research in Personality RESEARCH IN PERSONALITY

European Association of Social Psychology

European Association of Social Psychology

Society of Experimental and Social Psychology

Additional services and information for Social Psychological and Personality Science can be found at:

Email Alerts: http://spp.sagepub.com/cgi/alerts

Subscriptions: http://spp.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

>> Version of Record - Mar 6, 2014

OnlineFirst Version of Record - Sep 12, 2013

What is This?

# Thought Calibration: How Thinking Just the Right Amount Increases One's Influence and Appeal

Social Psychological and Personality Science 2014, Vol. 5(3) 263-270 © The Author(s) 2013 Reprints and permission: sagepub.com/journalsPermissions.nav DOI: 10.1177/1948550613499940 spps.sagepub.com

**\$**SAGE

Daniella M. Kupor<sup>1</sup>, Zakary L. Tormala<sup>1</sup>, Michael I. Norton<sup>2</sup> and Derek D. Rucker<sup>3</sup>

#### **Abstract**

Previous research suggests that people draw inferences about their attitudes and preferences based on their own thoughtfulness. The current research explores how observing other individuals make decisions more or less thoughtfully can shape perceptions of those individuals and their decisions and ultimately impact observers' willingness to be influenced by them. Three studies suggest that observing others make more (vs. less) thoughtful decisions generates more positive reactions when a choice is difficult but more negative reactions when a choice is easy. In essence, people perceive the quality of others' decisions to be greater when other individuals engage in the right amount of thinking for the situation. These assessments then affect observers' own decisions and openness to influence.

#### Keywords

thoughtfulness, attitudes, liking, social influence, decision difficulty

[He] was the very first plastic surgeon I visited and I knew right away I didn't need to look any further...

Customer Testimonial, novaplasticsurgery.com

I performed an extensive search of board certified plastic surgeons in the DFW area...

Customer Testimonial, realself.com

Who has more appeal and influence: Someone who makes decisions with considerable thought and analysis or someone who takes virtually no time and seems to make decisions effortlessly? Imagine searching for a plastic surgeon and encountering the two actual testimonials presented above. Which would have more influence over your own decision? Now imagine standing in line at a café. As you wait, a customer ahead of you gives his or her decision a great deal of thought, discussing his or her order with a friend and asking the barista for help. After careful deliberation, he or she orders a nonfat latte. The next customer orders an iced Americano with what appears to be no deliberation whatsoever. Which of these individuals made a better decision? Who do you like more? How would your own choice be influenced by each of these individuals?

This research examines how observing other individuals make decisions with more or less thought affects (a) our inferences about those individuals, (b) our inferences about the decisions they make, and (c) our own subsequent decisions.

Our central prediction is that other individuals' decision thoughtfulness has a dynamic impact on observers' reactions, such that observers sometimes prefer more and sometimes prefer less thoughtfulness in others. Furthermore, we posit that observers' willingness to be influenced by another person's decision—and even by that person's advice on other topics—can be shaped by whether they believe that person put the right amount of thought into making it.

# Decision Thoughtfulness

People make numerous decisions every day, from what to eat for breakfast to what brand of appliance to purchase. In some cases, people make these decisions without much thought. For example, an individual needing a new microwave might purchase the first model he or she sees without even reading the product label. In other cases, individuals devote more thought to their decisions; for example, painstakingly comparing different microwaves before deciding. Substantial research has explored the impact of

# Corresponding Author:

Daniella M. Kupor, Graduate School of Business, Stanford University, 655 Knight Way, Stanford, CA 94305, USA. Email: dkupor@stanford.edu

<sup>&</sup>lt;sup>1</sup> Graduate School of Business, Stanford University, Stanford, CA, USA

<sup>&</sup>lt;sup>2</sup> Harvard Business School, Boston, MA, USA

<sup>&</sup>lt;sup>3</sup> Kellogg School of Management, Northwestern University, Evanston, IL, USA

one's own decision thoughtfulness—that is, the amount of time and effort devoted to making a decision—on social and evaluative judgment (see Ariely & Norton, 2011; Inbar, Botti, & Hanko, 2011). For instance, considerable literature has examined whether individuals are more certain of their attitudes when they generate them quickly and effortlessly versus more slowly and thoughtfully (see Tormala, Clarkson, & Henderson, 2011).

Despite extensive literature documenting the impact of one's thoughtfulness on one's own judgments or decisions, little research has examined the inferences people draw from others' decision thoughtfulness. Researchers have explored others' decision thoughtfulness as a driver of moral perceptions (Tetlock, Kristel, Elson, Green, & Lerner, 2000) but not as a possible source of perceived decision quality and social influence. This lack of attention is surprising given the frequency with which people observe others making decisions. For example, in grocery and hardware stores, patrons frequently encounter others deliberating between different products before choosing one over another. More generally, most people have observed others deliberate very little or at great length, over both important and mundane decisions. What effects do these observations have? Are people more attracted to and influenced by others who are high or low in decision thoughtfulness?

#### The Current Research

We investigate how perceptions of the amount of thought that another individual devotes to a decision affect evaluations of that individual, the decision itself, and ultimately observers' openness to being influenced by the decision maker. One reasonable prediction is that observing an individual make a quick (low thought) decision fosters favorable evaluations, because it suggests that the optimal decision is clear or that the individual trusts his or her gut reaction. To the extent that individuals perceived as confident and decisive are more influential (see Sniezek & Van Swol, 2001; c.f., Karmarkar & Tormala, 2010), it is possible that low-thought decisions might boost observers' openness to being influenced by the decision maker. Alternatively, observing an individual devote substantial thought to a decision could lead to more favorable evaluations and openness to influence, as it suggests that the individual is more thorough and the decision more carefully considered. For example, individuals who contradict themselves can sometimes gain persuasiveness by seeming to be more thoughtful (Reich & Tormala, 2013). Furthermore, people are more confident of their attitudes when a message source appears to have considered both the positives and the negatives of a product (Rucker, Petty, & Briñol, 2008). To the extent that such consideration seems more thoughtful, these results could suggest that more thought is evaluated more favorably.

In contrast to either main effect prediction, we propose that the effect of decision thoughtfulness depends on whether the context calls for more or less thought. In particular, we investigate the moderating role of decision difficulty. Our core hypothesis is that observers perceive others as engaging in the "right" amount of thinking—that is, as being better *calibrated*—when their level of thoughtfulness matches the apparent difficulty of the decision.

We define calibration not in terms of any objective standard of accuracy but rather as the extent to which decision makers are perceived to attune their thoughtfulness to the difficulty of a decision. We posit that this calibration enhances perceptions of the decision and decision maker and increases observers' willingness to follow the decision maker's actions. There is an extensive literature on matching effects in persuasion, suggesting that matching the tone or content of a persuasive appeal to message recipients' processing style or psychological orientation generally increases persuasion by boosting perceived fit, fluency, and/or involvement (see Mayer & Tormala, 2010). The current research investigates a different type of matching, exploring whether decision makers can increase their appeal and influence by matching their decision thoughtfulness to the apparent difficulty of a decision context.

Consider the case in which one observes someone making what should be a difficult decision—for example, choosing between products that differ on nonaligning dimensions (Zhang & Fitzsimons, 1999). We hypothesize that observers will form more favorable impressions of this individual and the decision when it is made thoughtfully. Indeed, difficult decisions require greater thought, and taking time to make a careful decision should foster perceptions of better analysis. By contrast, when seemingly difficult decisions are made without much thought, observers might infer a lack of due diligence, which could attenuate perceived decision quality, produce less favorable impressions of the decision maker (which can coincide with perceptions of poor judgment; Johnson, 1989; Wakimoto & Fujihara, 2004), reduce the desirability of the chosen item, and even dampen observers' openness to influence from the decision maker.

Now consider the case in which one observes someone making what should be an easier decision—for example, choosing between products that are identical on every dimension except color. We suggest that observers form more favorable impressions of this decision, and the decision maker, when it is made *less* thoughtfully. Particularly when a decision seems as though it should boil down to a gut feeling or simple preference, less thoughtfulness might be perceived as better matching the demands of the situation. This inference may promote the perception that the target individual is a "good" decision maker (e.g., not an "overthinker"), which could increase observers' openness to being influenced by that individual.

In essence, we postulate that observers will look more favorably upon, and be more influenced by, other individuals and their decisions when those individuals display thought calibration. We present three experiments exploring this possibility. Study 1 assesses influence by measuring participants' willingness to pay for an item chosen by the decision maker. Studies 2–3 assess interest in receiving the decision maker's advice in future decisions. Across studies, we predict more favorable evaluations of the decision maker and more influence under conditions of calibrated thinking.

# Study I

Study 1 provided an initial test of the thought calibration hypothesis. We predicted that participants would evaluate an individual

Kupor et al. 265

and his decision more favorably when that individual was more thoughtful when making a difficult decision and less thoughtful when making an easy decision. Study 1 also investigated whether such calibration could impact observers' willingness to pay for the target's chosen item—a proxy for influence.

# **Method**

# Participants and Procedure

One hundred sixteen undergraduates, participating in a computer experiment for monetary payment, read a vignette in which an individual named Ted went to the store to purchase a microwave. Participants read that Ted was considering two options, and they received a list of attributes for each. Participants next learned that Ted chose Microwave 1, after which they reported their perceptions of Ted, his decision, and their willingness to pay for Microwave 1.

# Independent Variables

Decision Type. We manipulated whether the microwave comparison was easy or difficult by varying the number of dimensions along which the microwaves differed (Appendix). In the easy condition, the ovens were identical on every dimension except color. The ovens differed in color in the difficult condition, but in addition they differed along several other nonaligning dimensions. In a pretest asking participants to indicate how difficult it would be to choose between the microwaves in each condition (1 = not difficult at all; 7 = very difficult), participants perceived the decision to be more difficult in the difficult (M = 4.54, standard error [SE] = .24) rather than easy (M = 2.60, SE = .29)condition, t(107) = 5.13, p < .001. In a separate pretest asking participants how much thought would be required to choose between the microwaves (1 = very little thought; 7 = a lot of thought), participants reported that the decision required more thought in the difficult (M = 4.81, SE = .12) rather than easy (M = 2.14, SE = .11) condition, t(174) = 16.29, p < .001.

Decision Thoughtfulness. Beneath the attribute lists, we manipulated the target's thoughtfulness. In the low-thought condition, participants read, "Ted gives each option a very brief look and then quickly lifts his choice into the shopping cart. He doesn't put much time or thought into this decision, taking just 30 seconds to decide." In the high-thought condition, participants read, "Ted gives each option a thorough examination and then, after very careful consideration, lifts his choice into the shopping cart. He puts a great deal of time and thought into this decision, taking nearly 10 minutes to decide."

#### Dependent Measures

Decision Quality. Following the scenario description, we assessed perceived decision quality with two questions: How good a decision do you think Ted made? How wise do you think Ted's final decision was? Responses, provided on 1–7 scales (not at all-very), were averaged (r = .80, p < .001).

**Table 1.** Experiment 1 Measures as a Function of Decision Type and Thoughtfulness.

	Easy Decision		Difficult Decision	
		Decision Thoughtfulness		
Dependent measure	High	Low	High	Low
Decision quality				
М	4.70	5.16	4.92	3.84
SE	.21	.21	.23	.19
Willingness to pay				
М	37.46	51.32	61.00	44.06
SE	6.48	6.48	6.86	5.79
Liking				
М	3.91	4.30	4.24	3.83
SE	.15	.15	.16	.13

Note. M = mean; SE = standard error.

Willingness to Pay. Next, participants typed the dollar value that they would be willing to pay for Microwave 1.

Liking. Finally, participants completed 3 items assessing their evaluation of the target: How much do you think you would like Ted? How favorable is your impression of Ted as a person? How much would you like to be Ted's friend? Responses, provided on 1–7 scales with higher ratings indicating more liking, were averaged ( $\alpha = .87$ ).

#### Results

We submitted each dependent measure to a 2 (decision type: easy or difficult)  $\times$  2 (thoughtfulness: high or low) analysis of variance in this and all subsequent studies.

# **Decision Quality**

Analysis of the decision quality index revealed a main effect for decision type, F(1, 112) = 6.68, p < .02, but not decision thoughtfulness, F(1, 112) = 2.10, p < .16 (Table 1). Most importantly, the predicted interaction emerged, F(1, 112) = 13.25, p < .001. High (vs. low) thoughtfulness enhanced perceived decision quality when the decision was difficult, F(1, 112) = 13.21, p < .001, but this tendency reversed when the decision was easy, F(1, 112) = 2.36, p < .13.

# Willingness to Pay

There were no main effects on willingness to pay, Fs < 1.62, ps > .20, but the predicted interaction emerged, F(1, 112) = 5.77, p < .02. Participants tended to show greater willingness to pay when Ted was more (vs. less) thoughtful about a difficult decision, F(1, 112) = 3.56, p < .07, and when he was less (vs. more) thoughtful about an easy decision, F(1, 112) = 2.29, p < .14, suggesting greater influence under conditions of thought calibration.

# Liking

There were no main effects on liking, Fs < 1, but again the predicted interaction emerged, F(1, 112) = 7.48, p < .01. More (vs. less) thought fostered liking under difficult decision conditions, F(1, 112) = 4.00, p < .05, whereas less (vs. more) thought fostered liking under easy decision conditions, F(1, 112) = 3.50, p < .07.

# Study 2

The results of Study 1 were consistent with our hypothesis that people perceive the quality of others' decisions to be greater when others calibrate their thoughtfulness to the difficulty of a decision. Study 1 also revealed that this calibration fosters social influence—as reflected by the willingness to pay data—and increases liking of the decision maker. We submit that the underlying basis for these effects is that calibrated thought promotes the perception that the decision maker engaged in the right amount of thinking about the decision. Study 2 directly investigated this possibility. Study 2 also had three additional goals: to gauge the robustness of the calibration effect by changing the decision domain; to directly examine whether calibrated thinking increases observers' willingness to be influenced by the decision maker; and to modify our thoughtfulness manipulation—varying perceived effort with no mention of time.

#### **Method**

# Participants and Procedure

One hundred one participants from a national online pool read that they were participating in a survey about blackjack, a popular card game. Participants first watched a video describing the rules of blackjack. For example, the video explained that the goal of blackjack is to beat a dealer's hand without the sum of one's cards exceeding 21, and instructed that players must decide to "hit" (accept another card) or "stay" (decline another card) after the dealer deals two cards to each player. Following the tutorial, participants read a vignette in which an individual named Steve was playing blackjack. After seeing Steve's cards, participants read that he "hit", and subsequently reported their perceptions of Steve, his decision, and his thought process.

# Independent Variables

Decision Type. All participants saw the two cards dealt to Steve. We manipulated whether Steve's decision was easy or difficult by varying those cards' values. In the easy condition, Steve's cards summed to a score of 5. The unambiguously correct decision here was to "hit," because every card would bring Steve's hand closer to 21 without exceeding it. In the difficult condition, Steve's cards summed to a score of 15. In this case, the decision was complicated by the fact that a hit could lead to a bust, whereby the cards exceed 21 and the player loses. Thus, this decision was objectively more difficult.

Decision Thoughtfulness. We manipulated thoughtfulness by describing how much effort Steve devoted to his decision. In the high-thought condition, participants read, "Steve puts a lot of thought into his decision. You can see that he thinks very hard about it." In the low-thought condition, participants read, "Steve does not put a lot of thought into his decision. You can see that he does not think very hard about it."

# Dependent Measures

Thought Calibration. Following the scenario description, participants indicated the extent to which they believed that Steve engaged in the right amount of thinking before making his decision. Participants responded on a 1–7 scale (not at all–very much).

Liking. Participants reported liking using the same items as in Study 1 ( $\alpha = .88$ ).

Openness to Influence. Participants reported their openness to influence on three items: If Steve offered you his advice about how to play blackjack in the future, would you follow his advice? If Steve offered you his advice about how to play another gambling game, would you follow his advice? How much would you trust Steve to make good decisions in the future? Responses, provided on 1–7 point scales with higher values indicating greater openness to influence, were averaged ( $\alpha = .91$ ).

At the conclusion of the survey, participants reported whether they considered themselves to be blackjack experts. Because experts' familiarity with various decision rules (e.g., guidelines about when to hit) could interfere with the decision difficulty manipulation, we made an a priori decision to exclude them from our sample. Nine participants self-identified as experts, and these participants were excluded from analysis. Our results do not change in any meaningful way when these participants are retained.

#### Results

# Thought Calibration

The thought calibration data revealed a main effect of decision type, F(1, 87) = 8.56, p < .01, but not thoughtfulness, F < 1 (Table 2). Most germane, the predicted interaction emerged, F(1, 87) = 36.04, p < .001. High thought fostered perceptions that the target engaged in the right amount of thinking under difficult decision conditions, F(1, 87) = 20.00, p < .001, whereas low thought fostered these perceptions under easy decision conditions, F(1, 87) = 16.16, p < .001.

#### Liking

On liking we found a main effect for thoughtfulness, F(1, 88) = 4.02, p < .05, but not decision type, F < 1. More importantly, the predicted interaction emerged, F(1, 88) = 18.00, p < .001. High thought fostered liking under difficult decision conditions, F(1, 88) = 19.52, p < .001, but there was a reverse tendency under easy decision conditions, F(1, 88) = 2.50, p < .12.

Kupor et al. 267

**Table 2.** Experiment 2 Measures as a Function of Decision Type and Thoughtfulness.

	Easy Decision		Difficult Decision	
	Decision Thoughtfulness			
Dependent measure	High	Low	High	Low
Thought calibration				
М	3.87	5.73	4.87	2.83
SE	.32	.33	.32	.32
Liking				
M	3.86	4.28	4.56	3.39
SE	.19	.19	.19	.19
Openness to influence				
M	3.25	4.30	4.17	2.64
SE	.23	.23	.23	.23

Note. M = mean; SE = standard error.

We followed the procedures outlined by Hayes (2012) to examine whether calibration perceptions mediated the interaction between decision type and decision thoughtfulness on liking. As illustrated in Figure 1, perceived calibration mediated this interaction (confidence interval [CI]: [.50, 1.60]).

# Openness to Influence

There were no main effects on openness to influence, Fs(1, 88) < 2.63, ps > .11, but again we found the predicted interaction, F(1, 88) = 32.40, p < .001. High (vs. low) thought increased openness to influence under difficult decision conditions, F(1, 88) = 22.73, p < .001, whereas this effect reversed under easy decision conditions, F(1, 88) = 10.78, p = .001. Following the same method as mentioned earlier, we found that perceived calibration mediated this interaction (CI: [1.15, 2.88]).

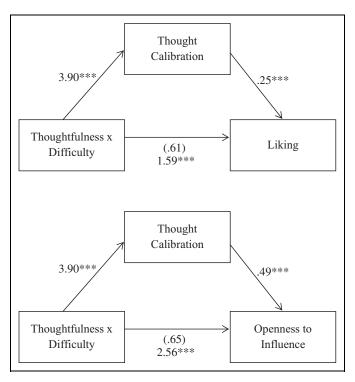
# Study 3

The results of Studies 1 and 2 were consistent with our calibration hypothesis. However, both studies employed vignette paradigms that explicitly referenced decision thoughtfulness. Although such references do occur in the real world, it is possible that in our experimental context they introduce concerns about possible demand effects. Study 3 aimed to replicate our findings using a nonvignette paradigm in which decision thoughtfulness was not explicitly stated.

#### Method

# Participants and Procedure

Three hundred forty-seven participants from an online pool were told that their session would be synced online with that of another participant named Mark. Participants were then instructed that either they or Mark would be randomly assigned to decide which of two microwaves they would choose if they needed one. All participants read that Mark had been assigned to make the decision, that they and Mark would simultaneously



**Figure 1.** Experiment 2 mediation models for liking (top panel) and openness to influence (bottom panel). *Note.* The path coefficients are unstandardized  $\beta$ s. Values in parentheses indicate the effect of the interaction on the dependent variable after controlling for the mediator. \*p < .05; \*\*p < .01; and \*\*\*p < .001.

examine the microwave choice set, and that they should view the options while Mark made his decision. Participants viewed the options on the next screen and were told that their screen would advance once Mark clicked to indicate his decision. The microwave stimuli that appeared, and the decision difficulty manipulation, were identical to those from Study 1.

To manipulate thoughtfulness, we varied the amount of time that Mark devoted to his decision (i.e., the time that the choice set was visible before the screen advanced). In the high- versus low-thoughtfulness conditions, the screen advanced after 90 and 15 s, respectively. A pilot study revealed that participants exposed to a 90-s wait (M = 4.81, SE = .12) perceived that the target devoted more thought to the decision than participants exposed to a 15-s wait (M = 2.14, SE = .11), t(175) = 16.29, p < .001.

After their screen advanced, participants learned that Mark chose Microwave 1. The supposed session sync was then deactivated, and we assessed thought calibration, liking ( $\alpha = .90$ ), and openness to influence ( $\alpha = .92$ ) using identical measures to Study 2 but framed in terms of microwaves.

#### Results

#### Thought Calibration

The thought calibration index revealed a main effect for decision type, F(1, 343) = 13.11, p < .001, but not thoughtfulness, F(1, 343) < 2.25, p > .14 (Table 3). Most important, the predicted interaction emerged, F(1, 343) = 24.43, p < .001.

Thought aniess.				
	Easy Decision		Difficult Decision	
	Decision Thoughtfulness			
Dependent measure	High	Low	High	Low
Thought calibration				
М	4.71	5.31	4.94	3.81
SE	.17	.18	.18	.18
Liking				
М	4.01	4.54	4.35	3.89
SE	.11.	.11	.11	.11

**Table 3.** Experiment 3 Measures as a Function of Decision Type and Thoughtfulness.

Note. M = mean; SE = standard error.

Openness to influence

High thought increased perceived calibration under difficult decision conditions, F(1, 343) = 20.56, p < .001; low thought increased perceived calibration under easy decision conditions, F(1, 343) = 5.98, p < .05.

3.91

.14

4.38

.14

4.27

.14

3.57

.14

#### Liking

Μ

SE

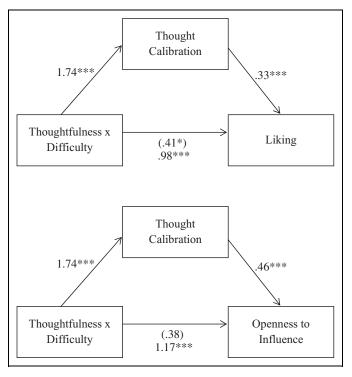
The liking index revealed no main effects, Fs < 1.96, ps > .16, but we obtained the predicted interaction, F(1, 343) = 19.73, p < .001. High thought increased liking under difficult decision conditions, F(1, 343) = 8.35, p < .01; this effect reversed under easy decision conditions, F(1, 343) = 11.51, p = .001. Following the method described in Study 2, we found that perceived calibration mediated liking (CI: [.34, .85]; Figure 2).

# Openness to Influence

There were no main effects on openness to influence, Fs(1, 343) < 2.59, ps > .11, but there was an interaction, F(1, 343) = 17.18, p < .001. High (vs. low) thought increased openness to influence under difficult decision conditions, F(1, 343) = 12.13, p = .001, whereas this effect reversed under easy decision conditions, F(1, 343) = 5.64, p < .05. Again, perceived calibration mediated this interaction (CI: [.47, 1.16]).

#### **General Discussion**

People frequently observe others making decisions. Despite the ubiquity of these observations, little research has explored the impact of a target's decision process—specifically, his or her thoughtfulness—on observers' judgments, choices, and receptiveness to influence. Our studies tested the hypothesis that individuals' perceived decision quality, general appeal, and ability to influence can increase when they devote more or less thought to their decisions, depending on the context. Study 1 revealed that under difficult decision conditions, more rather than less thoughtfulness enhanced evaluations of the decision, the decision maker, and the chosen item. Under easy decision



**Figure 2.** Experiment 3 mediation models for liking (top panel) and openness to influence (bottom panel). *Note*. The path coefficients are unstandardized  $\beta$ s. Values in parentheses indicate the effect of the interaction on the dependent variable after controlling for the mediator. \*p < .05; \*\*p < .01; \*\*\*p < .01.

conditions, the opposite pattern emerged. Using different contexts and manipulations, Studies 2 and 3 replicated the core effects on perceived thought calibration, liking, and openness to influence. Thus, rather than having a fixed preference for individuals who devote more thought to their decisions or for individuals who rely on their immediate gut reactions, our results suggest that individuals who calibrate their thought process to the demands of the situation are better liked, more influential, and viewed as making better decisions.

Interestingly, our studies revealed some variation in the strength of these opposing effects. Specifically, the effect of thoughtfulness tended to be stronger under difficult rather than easy conditions. It could be that there is a slightly greater preference for more thoughtfulness in general, which makes the optimal calibration level harder to pinpoint under easy decision conditions. Alternatively, perhaps the positive effect of low thought under easy conditions requires the perception that the target had prior knowledge or a strong gut feeling, neither of which was explicitly conveyed to participants in these studies. Although the simple effects under easy conditions were in the predicted direction in each study, the slight asymmetry in effects across easy and difficult conditions is worthy of further research.

Also important, in this initial research, we limited our examination to decision thoughtfulness, but there are numerous other decision process dimensions that could influence observers' reactions to decision makers. For example, just as individuals

Kupor et al. 269

can think more or less about a decision, they can think more rationally or emotionally, more objectively or subjectively, more abstractly or concretely, and so on. Our calibration hypothesis could be extended to each of these processing dimensions to determine whether people like others more, and are more open to their influence, when the *type* of thinking others apply to a decision matches observers' perception of the context. In addition to affecting liking and influence through perceived calibration, as we found, these kinds of matches and mismatches might have more general implications for expectancy confirmation and violation, which also play a critical role in social perception and persuasion (e.g., Clary & Tesser, 1983; Reich & Tormala, 2013).

Another possible limitation of the current research is that in each study thought calibration was likely salient to participants before they completed the liking and influence measures. In Studies 1 and 2, the target's thoughtfulness was explicitly described in the materials. In Study 3, participants completed the thought calibration measure prior to the liking and influence items. Is salience critical for the thought calibration effect to emerge? Like most psychological constructs, we assume the effect of calibration is greater when it is salient. Nevertheless, an important direction for future research would be to explore whether these effects occur spontaneously or are constrained to contexts in which a decision maker's thoughtfulness is particularly salient or explicit.

Even if the effect is restricted to such contexts, we submit that it is still likely to be relevant to many social situations, because others' decision thoughtfulness is indeed quite salient in many situations. That is, there are a number of different contexts in which a decision maker's thoughtfulness is explicitly referenced or likely to be salient for other reasons. For instance, there is ample anecdotal evidence that consumers reference their own thoughtfulness in their online product reviews and testimonials (e.g., "I thought long and hard before buying this machine"; "... I quickly decided on the turkey panini"; "...took a long time to decide what to order...", "I quickly decided on Ceviche ... "5; "I bought the Oreck Touch without much thought..."6). Moreover, third parties often explicitly describe the amount of thought that decision makers devote to their decisions (e.g., "He said there that he had 'thought carefully' about the decision and did not make it 'lightly' or 'impulsively'", "...it took the jury just fifteen minutes to acquit the defendants"; Finkelman, 1985).

In addition to explicit references, there likely are general situational cues that attune people to others' decision thoughtfulness. For instance, when people must wait for others to make a decision before making their own (e.g., waiting for a customer ahead of them in line to place an order; waiting for a fellow diner at a restaurant to choose an entrée), they might be closely attuned to others' thoughtfulness. Likewise, in the recreational domain, people might attune to others' thoughtfulness with some frequency. For instance, in games involving timed decisions (e.g., chess, backgammon), or games in which players must wait for others to place bets before they do so themselves (e.g., poker, blackjack), people might be particularly sensitive to others'

thoughtfulness. In these and other situations, individuals might spontaneously reflect upon others' thoughtfulness, and studying the current effects in these domains would be worthwhile.

Finally, if calibration effects are constrained to situations in which the salience of a person's thoughtfulness is high, the current findings may still have practical import in uncovering a novel means of persuasion. In particular, if one seeks to influence or be liked by others, calibrating one's apparent thought process to the demands of the situation might be an effective means of doing so. For example, when creating political endorsements or other promotional materials that convey an individual's decision process (e.g., "I checked out all of the other options and knew that this was the right choice for me!"), explicitly referencing one's thoughtfulness could meaningfully influence others' reactions. Our results suggest that recipients might make more positive inferences about endorsed items when they learn that the endorser engaged in the right amount of thinking before endorsing it. Future studies testing this possibility would be worthwhile.

# **Appendix**

# Easy Decision Condition

Microwave Oven I	Microwave Oven 2
Color: Dark gray 27-key touchpad control 10 power levels Turntable cooking system Auto weight defrost Automatic popcorn setting Hold warm	Color: Light gray 27-key touchpad control 10 power levels Turntable cooking system Auto weight defrost Automatic popcorn setting Hold warm

# Difficult Decision Condition

Microwave Oven I	Microwave Oven 2
Color: Dark gray 27-key touchpad control 10 power levels Turntable cooking system Auto weight defrost Automatic popcorn setting Hold warm	Color: Light gray 1.6 cubic-foot capacity 11.63-inch carousel turntable Auto-Touch control panel 11 Instant Action keys Electronic child lock Minute plus single touch

#### **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) received no financial support for the research, authorship, and/or publication of this article.

#### **Notes**

- 1. Variation in degrees of freedom stem from missing data on the calibration item from one participant.
- http://www.amazon.com/Philips-CDR600-CD-Recorder/product-reviews/B00005AY8K
- 3. http://www.yelp.com/biz/boxed-foods-company-san-francisco
- 4. http://www.yelp.com/biz/song-ngu-restaurant-milpitas-2?start=80
- 5. http://www.yelp.com/biz/the-mezzanine-at-st-germain-san-juan
- http://www.amazon.com/Oreck-Touch-Upright-Bagless-BU10000/ product-reviews/B00BI3H772
- http://www.sanluisobispo.com/2013/01/18/2361249/bruce-gibson-affair-cherie-aispuro.html

#### References

- Ariely, D., & Norton, M. I. (2011). From thinking too little to thinking too much: A continuum of decision making. *Wiley Interdisciplinary Reviews: Cognitive Science*, *2*, 39–46.
- Clary, E. G., & Tesser, A. (1983). Reactions to unexpected events: The naïve scientist and interpretive activity. *Personality and Social Psychology Bulletin*, 9, 609–620.
- Finkelman, Paul. (1985). Slavery in the courtroom. An annotated bibliography of American cases. Washington, DC: Library of Congress, Illustrated. xxvii, 312 pp. Reprinted 1998 by The Lawbook Exchange, Ltd. LCCN 98-11284. ISBN 1-886363-48-X.
- Hayes, A. F. (2012). An introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, NY: Guilford Press.
- Inbar, Y., Botti, S., & Hanko, K. (2011). Decision speed and choice regret: When haste feels like waste. *Journal of Experimental Social Psychology*, 47, 533–540.
- Johnson, M. A. (1989). Variables associated with friendship in an adult population. *Journal of Social Psychology*, 129, 379–390.
- Karmarkar, U. R., & Tormala, Z. L. (2010). Believe me, I have no idea what I'm talking about: The effects of source certainty on consumer involvement and persuasion. *Journal of Consumer Research*, 36, 1033–1049.
- Mayer, N. D., & Tormala, Z. L. (2010). "Think" versus "feel" framing effects in persuasion. *Personality and Social Psychology Bulletin*, 36, 443–454.

- Reich, T., & Tormala, Z. L. (2013). When contradictions foster persuasion: An attributional perspective. *Journal of Experimental Social Psychology*, 49, 426–439.
- Rucker, D. D., Petty, R. E., & Briñol, P. (2008). What's in a frame anyway? A meta-cognitive analysis of the impact of one versus two sided message framing on attitude certainty. *Journal of Consumer Psychology*, 18, 137–149.
- Sniezek, J. A., & Van Swol, L. M. (2001). Trust, confidence, and expertise in a judge-advisor system. *Organizational Behavior Human Decision Processes*, 84, 288–307.
- Tetlock, P. E., Kristel, O., Elson, B., Green, M., & Lerner, J. (2000). The psychology of the unthinkable: Taboo trade-offs, forbidden base rates, and heretical counterfactuals. *Journal of Personality and Social Psychology*, 78, 853–870.
- Tormala, Z. L., Clarkson, J. J., & Henderson, M. D. (2011). Does fast or slow evaluation foster greater certainty? *Personality and Social Psychology Bulletin*, 37, 422–434.
- Wakimoto, S., & Fujihara, T. (2004). The correlation between intimacy and objective similarity in interpersonal relationships. *Social Behavior and Personality*, 32, 95–102.
- Zhang, S., & Fitzsimons, G. (1999). Choice process satisfaction: The influence of attribute alignability and option limitation. Organizational Behavior and Human Decision Processes, 77, 192–214.

#### **Author Biographies**

- **Daniella M. Kupor** is a doctoral student at the Stanford University, Graduate School of Business, Stanford, CA, USA.
- **Zakary L. Tormala** received his PhD in psychology at Ohio State University and is currently an associate professor of marketing at the Stanford University, Graduate School of Business, Stanford, CA, USA.
- **Michael I. Norton** received his PhD in psychology at Princeton University and is currently an associate professor of marketing at the Harvard Business School, Boston, MA, USA.
- **Derek D. Rucker** received his PhD in psychology at Ohio State University and is currently a professor of marketing at the Northwestern University, Kellogg School of Management, Evanston, IL, USA.