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Authors

Oktar, Kerem
Lombrozo, Tania

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Deciding to be Authentic: Intuition is Favored Over Deliberation for Self-Reflective Decisions

Kerem Otkar (oktar@princeton.edu)

Tania Lombrozo (lombrozo@princeton.edu)

Department of Psychology, Princeton University
Princeton, NJ 08540 USA

Abstract

People think they ought to make some decisions on the basis of deliberative analysis, and others on the basis of intuitive, gut feelings. What accounts for this variation in people's preferences for intuition versus deliberation? We propose that intuition might be prescribed for some decisions because people's folk theory of decision-making accords a special role to authenticity, where authenticity is uniquely associated with intuitive choice. Two pre-registered experiments find evidence in favor of this claim. In Experiment 1 ($N = 631$), we find that decisions made on the basis of intuition (vs. deliberation) are more likely to be judged authentic, especially in domains where authenticity is plausibly valued. In Experiment 2 ($N = 177$), we find that people are more likely to prescribe intuition as a basis for choice when the value of authenticity is heightened experimentally. These effects hold beyond previously recognized influences on intuitive vs. deliberative choice, such as computational costs, presumed efficacy, objectivity, complexity, and expertise.

Keywords: intuition; deliberation; decision domain; authenticity; decision-making; social signaling; normative

Introduction

In the months leading up to his engagement, Charles Darwin evaluated the merits of marriage. An entry in his journal reveals systematic deliberation and analysis: a list of reasons favoring 'marry' on one side, those favoring 'not marry' on the other (Darwin, 1838). Darwin's analysis is amusing not only because of the tragically outdated reasons he enumerates (notably "charms of music and female chit-chat" up against "terrible loss of time"), but because he engaged in this analysis at all. For some modern readers, decisions about marriage should reflect love and commitment, not deliberation and enumeration. And yet, for plenty of other decisions—from choosing a stock portfolio to a medical treatment—Darwin's strategy seems just right.

What accounts for this variation in decision-making across domains? Prior work offers partial answers: Deliberation requires time and effort (e.g., Tversky & Kahneman, 1974), and intuition can sometimes be a reliable basis for choice (e.g., Mikels et al., 2011). Research also suggests that decisions made on the basis of intuition are associated with greater authenticity (Maglio & Reich, 2018; Otkar & Lombrozo, 2020) and reflect stronger commitment (Critcher et al., 2012; Morewedge et al., 2014). Could judgments about how decisions ought to be made stem from these considerations? In particular, could a concern for authenticity

in some domains drive the prescription of intuition as a basis for choice?

In the current paper, we explore people's intuitive theories of decision-making, including the prescribed roles of intuition and deliberation. Across two studies, we make the following novel contributions. First, we show that the basis for a decision (intuition vs. deliberation) affects evaluations of decision-makers, even after controlling for the computational cost of each process, as well as the evidence each process offers about the value of each choice. Second, we show that judgments of a decision's authenticity, but not of the decision-maker's confidence or commitment, track how such judgments differ across domains. Third, we show a causal influence of authenticity: when it's important to make a decision authentically, intuition is more likely to be favored. And fourth, we show that judgments of authenticity have downstream consequences: to the extent a decision's authenticity is valued, people are less likely to prescribe following expert advice, be it from humans or machines.

Decision-making Across Domains

Prior work has found that the extent to which people rely on intuition and deliberation varies across domains. For instance, Inbar et al. (2010) presented participants with 25 choices (e.g., "selecting an entrée"). Participants rated either how much they thought one should rely on intuition vs. reason in making that decision, or how objectively evaluable outcomes are in that domain. They found systematic variation across domains in ratings for intuition vs. deliberation, and that deliberation judgments were correlated with ratings of objective evaluability. A subsequent study also found an association between complexity and deliberation. They explained these results with a task-cuing hypothesis, whereby features of decision problems, such as objectivity and complexity, cue associated modes of processing.

Pachur and Spaar (2015) also found evidence for systematic variation across domains in preferences for intuition vs. deliberation. They asked participants to complete a decision-style questionnaire for decisions in six domains ranging from clothing shopping to medical decisions. They found that preferences for intuition (but not deliberation) were correlated with self-rated domain expertise ($r \sim .40$), a factor argued to bolster the reliability of intuition as a guide to better decision-making.

These results suggest that preferences for intuition vs. deliberation could stem from intuitive beliefs about the

reliability of each process across domains, and about whether the cost of deliberation is likely to pay off in better decisions. However, two recent results suggest that the computational cost of deliberation does not fully explain variation across domains. First, Berman et al. (2018) found cross-domain variation in the extent to which people think they ought to rely on ‘objective measures’ vs. ‘personal feelings’ in decision-making, as well as corresponding variation in the *use* of objective metrics, even when they were available in all domains (and hence incurred no additional cost). Second, Otkar and Lombrozo (2020) found cross-domain variation in whether people recommended following intuition or deliberation, even once deliberation had taken place (and hence its cost had been incurred). In fact, people sometimes ignore costless and useful information to make and protect sub-optimal, intuitive decisions (Woolley & Risen, 2018). These results suggest that cross-domain processing preferences are driven by factors beyond efficiency. However, they do not fully rule out the role of perceived reliability, nor incorporate a role for authenticity or commitment – the two factors to which we now turn.

Authenticity

Beyond considerations of efficiency or reliability, intuition could be favored for decisions that are thought to reflect one’s authentic, ‘true’ self. There is a rich body of work that details the properties of this folk psychological notion (see Strohminger, Knobe, & Newman, 2017). This work suggests that one’s true self is seen as inherently good (e.g., Molouki & Bartels, 2017) and moral (e.g., Prinz & Nichols, 2016). If decisions based on intuition (vs. deliberation) are seen as more authentic or self-reflective, then people may think at least some decisions ought to be made on this basis.

Two recent studies provide evidence in support of the link between intuition and judgments of the self. Morewedge et al. (2014) asked participants to recall events from their past and to evaluate the self-insight that would be generated if these recollections had occurred spontaneously or deliberately. Spontaneous thoughts (including intuitions) were rated as generating significantly more self-insight than deliberative methods of reasoning. Relatedly, Maglio and Reich (2020) found that when individuals made decisions based on feelings (vs. deliberation), they perceived their choices as reflecting their true selves to a greater extent, and they reported increased certainty in their decision-making.

To test whether the perceived link between intuition and authenticity/true-self might drive prescriptions regarding how decisions ought to be made, Otkar and Lombrozo (2020) presented participants with vignettes in which a character makes a binary decision in one of 12 domains, where intuition points to one choice, and deliberation to the other. They found robust cross-domain variation in the extent to which participants thought that a decision ought to be made on the basis of intuition vs. deliberation. Crucially, they also found cross-domain variation in the extent to which a decision based on intuition was judged to be authentic, where this variation closely matched the domain-based variation for

prescriptions of intuition. This is consistent with the idea that intuition is prescribed in some domains partially because it is taken to be more authentic or to better reflect the self.

Commitment

A second hypothesis is that intuition is favored over deliberation when it is important to signal confidence in, or commitment to, one’s decision or one’s values. Research in moral psychology finds that in some cases, people look harshly upon those who deliberate about moral decisions (e.g., Merritt & Monin, 2011; Tetlock, 2003), and that this is in part because deliberation signals weak commitment to values that guide choice (Critcher, Inbar, & Pizarro, 2012).

Relatedly, Barasch et al. (2014) found that emotionally motivated decision-making signals sincerity and good moral character, and Simmons and Nelson (2006) found that the ease with which spontaneous thoughts come to mind determines people’s confidence in their intuitive options (see also Maglio & Reich, 2018). Generalizing from moral to non-moral domains, these findings suggest that intuition may be favored over deliberation when it is important to signal confidence in one’s decisions and commitment to one’s values (see Frank, 1988).

Otkar and Lombrozo (2020) also tested this commitment hypothesis. They found that while intuitive decision makers were generally judged to be more confident and committed to their choices, these judgments did *not* track domain variation in the extent to which intuition vs. deliberation were prescribed. This challenges the idea that concerns about signaling confidence or commitment drive differential reliance on intuition, at least outside the moral domain.

Overview of Experiments

In sum, prior work supports the claims that intuition and deliberation are differentially prescribed across domains, and that intuition is associated with greater authenticity and commitment. However, it remains unclear whether and how these two claims are related. Do concerns about authenticity or commitment drive the judgment that some decisions ought to be made on the basis of intuition? And can such effects be successfully isolated from concerns about the cost or relative reliability of deliberation? In this paper, we present two pre-registered experiments that tackle these questions.

In Experiment 1 we take up the latter challenge by presenting participants with what we call “matched information” scenarios. In these scenarios, two decision-makers approach a binary decision (P vs. Q) in a specified domain, where both their intuition and deliberative analysis point to the same option (P). However, one decision-maker bases her decision to pursue P *on her intuition*, and the other opts for P *because of her deliberation*. Both decision makers have thus incurred any cost associated with deliberation, and so differences in judgments cannot stem from computational costs or the fact that deliberation was pursued (cf. Critcher et al., 2012). Unlike past work, however, intuition and deliberation always point to the same choice (cf. Otkar & Lombrozo, 2020). Thus, in a matched information scenario,

different evaluations of a decision-maker must reflect the decision basis alone, in isolation from the cost of pursuing deliberation, the fact that deliberation was pursued, or the evidence from intuition or deliberation regarding the quality of each choice (which we call “process-specific evidence”).

In Experiment 2, we take up the causal challenge, testing whether the association between authenticity and prescriptions regarding intuition found in Experiment 1 stem from a causal relationship between authenticity and prescriptive processing preferences. We also test the downstream consequences of beliefs about authenticity for reliance on expert advice.

Together, these studies fill important lacunas in our understanding of why people sometimes choose to rely on their guts over their thoughts. Intuition is believed to possess unique capacities, such as access to one’s authentic self, that make it a more appropriate basis for important decisions in self-reflective domains.

Experiment 1

Experiment 1 had two core aims. The first was to isolate effects of decision basis on how decision makers are evaluated across domains, eliminating plausible confounds by using matched information scenarios. We predicted that even with such controls, we would observe different judgments for intuitive vs. deliberative decision makers, and that the magnitude of these differences would vary across domains. The second aim was to see how evaluations of authenticity and commitment relate to the prescribed role of intuition vs. deliberation. We predicted that to the extent an intuitive (vs. deliberative) decision maker is perceived to be authentic, intuition is more likely to be prescribed.

Methods

Participants Participants were 631 adults (266 male, 362 female, 2 other, mean age = 42) recruited on Prolific Academic in exchange for monetary compensation (\$0.60 for a 5 minute study). An additional 170 participants were excluded for failing to meet pre-registered criteria for total time (≥ 1.5 mins) or failing any of three comprehension/attention checks. Participation across both studies was restricted to American users with an approval rating $\geq 98\%$ on 500 or more previous tasks. Repeat participation was restricted using the Prolific platform.

Materials and Procedure Participants were randomly assigned to one of three decision domains: romance, donations, or investment. These domains were chosen, based on prior research, to range from the highly intuitive (romance) to the highly deliberative (investment). Participants read about two characters making a binary decision within that domain, where for both characters, intuition and deliberation pointed to the same choice. However, one character ultimately bases her choice on intuition, and the other on deliberation. In the domain of romance, for example, participants read:

Sarah is interested in starting a new romantic relationship. She was recently at a café and met two individuals: Alex and Taylor. At the café, she really felt in her gut that she and Alex were likely to be a good fit for each other. When she was interacting with Taylor, she did not feel like she and Taylor were a good fit for each other at all.

Later, Sarah spends an afternoon listing out and weighting the characteristics that are important to her about potential romantic partners like Alex and Taylor (such as their personality, priorities, etc.). She scores Alex and Taylor using this list, and concludes Alex is a much better fit for her than Taylor, in line with her intuition.

They then read a similar prompt about another character (Jane) deciding between two different romantic partners (Sam vs. Casey), where once again intuition and deliberation point to the same choice. Participants then read:

Here is how Sarah and Jane ultimately make their decisions.

Sarah, on the basis of her intuitive, gut reaction, decides to ask Alex out. That is, although both her intuition and her deliberative analysis point to Alex, it is her intuition and gut feeling that makes Sarah ultimately decide to pursue Alex.

Jane, on the basis of her deliberative analysis, decides to ask Sam out. That is, although both her intuition and her deliberative analysis point to Sam, it is her deliberative analysis that makes Jane ultimately decide to pursue Sam.

Participants then answered three sets of questions (order of items within each randomized). The first set was comprised of Likert items from ‘definitely [decision-maker A]’ to ‘definitely [decision-maker B]’ [1-6], with no neutral midpoint. These items are reproduced below:

Decision process: (i) Who made her decision in the right way? (ii) Who made her decision for the right reasons?

Authenticity: (i) Who made her decision more authentically? (ii) Whose decision is more reflective of her true self?

Commitment: (i) Who is more committed to her decision? (ii) Who has greater confidence in her decision?

Reliability: (i) Who would you expect to choose the better option in this domain in the future? (ii) Who followed a better strategy for making decisions in this domain?

Participants responded to four additional items designed to identify relevant aspects of authenticity; we omit these here in the interest of space.

Prior to providing demographics, participants responded to the following two prescriptive processing items, both Likert scales from ‘strongly disagree’ to ‘strongly agree’ [1-7]:

Intuition: One ought to rely on intuition and gut feeling when making [domain] decisions like this one.

Deliberation: One ought to rely on reasoning and deliberative analysis when making [domain] decisions like this one.

Results and Discussion

As pre-registered, we created composite scores for the pairs of items measuring decision process ($\alpha = .83$), reliability ($\alpha = .83$), and commitment ($\alpha = .72$). The two items measuring authenticity were not collapsed, as they did not meet our specified level of .7 for Cronbach's α ($\alpha = .52$). Scores were then analyzed in linear regressions with domain as a categorical predictor, using romance as the reference category (see Table 1).

These analyses revealed effects of domain on decision process, reliability, and authenticity (see Figure 1). Deliberative decision-makers were seen as having relied on a better decision process and as more likely to be reliable in the future for investment decisions, but not for romantic decisions. By contrast, intuitive decision-makers were judged more authentic for romantic decisions, but not for investment decisions. Donation decisions fell in between.

Judgments for self-reflection revealed a different pattern: while the intuitive decision maker's decision was reliably judged to be more self-reflective than the deliberative decision-maker's, this pattern did not vary across domains.

And finally, consistent with Oktar and Lombrozo (2020), commitment and confidence judgments did not show significant domain variation, nor effects of decision basis.

For prescriptive processing ratings, we replicated Oktar and Lombrozo (2020), with deliberation judged more appropriate for investment than for romance ($M_{del} = 4.45$ vs. $M_{del} = 5.96$), intuition judged more appropriate for romance than for investment ($M_{int} = 4.83$ vs. $M_{int} = 3.04$), and donation falling in between ($M_{del} = 5.16$, $M_{int} = 4.05$).

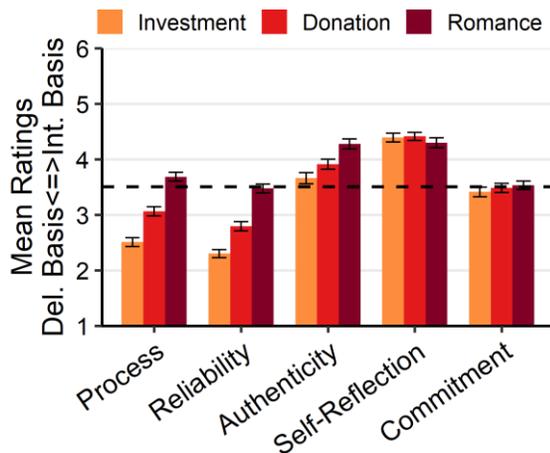


Figure 1: Mean ratings for inferential judgements between two characters based on their basis for choice. Error bars show the standard error of the mean, dotted line shows the average expected response under a null effect.

Finally, we considered the relationship between inferences about the decision-maker and prescriptive processing ratings with the following pre-registered analysis. We created a difference score from the two processing ratings (intuition – deliberation) and then regressed this difference score on each of our core variables, with domain as a potential moderator. These analyses revealed reliable relationships between inferences and difference scores for all measures (Figure 2). However, only authenticity and self-reflection predicted processing ratings in a manner that depended on domain.

In sum, our results support the hypothesis that decision makers are evaluated differently depending on the basis for their decision, even when decision basis is unconfounded from the cost of deliberation, the choice to deliberate, and the evidence for choice quality suggested by each processes' output. Moreover, this evaluation varies by domain, with authenticity uniquely tracking the prescribed role of intuition in a domain-dependent manner.

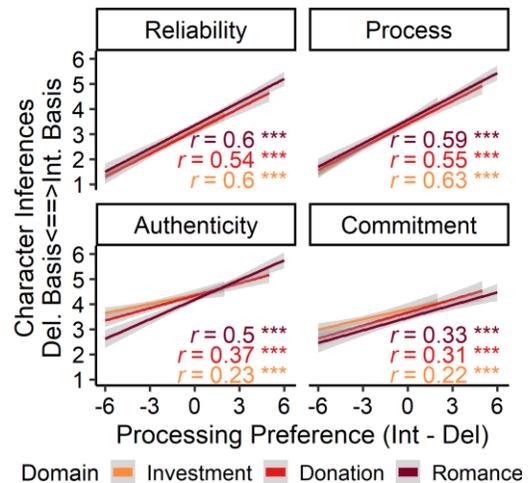


Figure 2: Correlations between processing preference difference scores and inference judgments, by domain. Shaded area indicates the 95% CI. Authenticity and Self-reflection are collapsed for this graph only, as they show the same trends.

Experiment 2

In Experiment 2 we go beyond correlation to test the causal role of authenticity on prescriptive processing preferences. We hypothesized that (i) more authentic decisions would be prescribed a greater role for intuition, (ii) that this impact would not be reducible to effects of previously-established predictors (e.g., objectivity), and (iii) that authenticity would have consequential downstream effects, namely the endorsement of pursuing expert/algorithmic advice.

Methods

Participants Participants were 177 adults (85 male, 89 female, 3 other, mean age = 37) recruited on Prolific Academic in exchange for monetary compensation (\$0.37 for a 3 minute study). An additional four participants were

Table 1: Regression analyses predicting outcome variables of interest from domain.

Dependent Variable	Intercept	Intercept 95% CI [LL, UL]	<i>b</i>				<i>R</i> ²	<i>R</i> ² 95% CI [LL, UL]
			<i>b</i>		95% CI [LL, UL]			
			Donation	Investment	Donation	Investment		
Decision Process	3.68**	[3.52, 3.84]	-0.62**	-1.18**	[-0.85, -0.39]	[-1.40, -0.95]	.15**	[.10, .19]
Authenticity	4.27**	[4.08, 4.46]	-0.37**	-0.61**	[-0.63, -0.10]	[-0.87, -0.35]	.03**	[.01, .07]
True Self	4.29**	[4.13, 4.45]	0.12	0.10	[-0.11, 0.34]	[-0.13, 0.32]	.00	[.00, .01]
Commitment	3.53**	[3.36, 3.69]	-0.05	-0.12	[-0.28, 0.18]	[-0.35, 0.11]	.00	[.00, .01]
Reliability	3.47**	[3.31, 3.63]	-0.68**	-1.17**	[-0.90, -0.46]	[-1.39, -0.95]	.15**	[.10, .20]
Intuition	4.83**	[4.63, 5.03]	-0.78**	-1.79**	[-1.06, -0.51]	[-2.07, -1.52]	.21**	[.16, .26]
Deliberation	4.45**	[4.30, 4.61]	0.71**	1.51**	[0.49, 0.92]	[1.29, 1.72]	.24**	[.18, .29]

Note. Each line is a separate regression predicting the dependent variables (leftmost column) from domain, with romance as the reference category. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of the confidence interval. * indicates $p < .05$. ** indicates $p < .01$

eliminated for failing to meet pre-registered criteria for total time (≥ 1 mins) or failing the same attention check as Experiment 1.

Materials and Procedure Participants were randomly assigned to one of two conditions: *authentic* or *inauthentic*. Participants first read one of two versions of the same vignette [authentic / inauthentic]:

Imagine Alex is making an important decision. Alex thinks that it is [extremely important / not important at all] that he makes this decision in a way that reflects his true, authentic self. That is, Alex thinks that this decision [should / need not] reflect his deep, most sincere sense of who he is.

Participants then responded to the objectivity, intuition, and deliberation items from the previous study, in addition to the following items, presented in a random order and with Likert scales from ‘strongly disagree’ to ‘strongly agree’ [1-7]:

- Complexity:** “Alex faces a complex choice.”
- Expertise:** “Alex has significant expertise in making decisions like this.”
- Expert Advice:** “Alex should base his decision on an expert’s recommendation.”
- Algorithmic Advice:** “Alex should base his decision on an artificial intelligence’s recommendation.”

Finally, participants provided demographic information.

Results and Discussion

To test our hypothesis that the authenticity manipulation would have an effect on prescriptive processing judgments, we performed linear regressions predicting these judgments from authenticity as a binary categorical variable. As predicted, this analysis revealed positive and significant effects of authenticity on intuition ratings, $b = 1.36$, $t(175) = 5.73$, $p < .001$, $R^2 = .15$, $F(1, 175) = 32.87$, $p < .001$. However, there was no significant effect on deliberation, $b = -0.33$,

$t(175) = -1.42$, $p = .16$, $R^2 = .01$, $F(1, 175) = 2.02$, $p = .16$, though the effect was in the expected direction (see Figure 3).

To test our hypothesis that these effects were not aliasing for the impact of authenticity on other determinants of processing preferences, we included three of the strongest predictors identified in the literature: objectivity, complexity (Inbar et al., 2010), and expertise (Pachur & Spaar, 2015). The inclusion of these covariates did not eliminate effects of authenticity—in fact, the estimated effect was remarkably robust to the controls, $b = 1.12$, $t(175) = 4.12$, $p < .001$. Among the covariates, only objectivity had a significant (though small) effect on intuition ratings, $b = -0.14$, $t(175) = -3.09$, $p < .001$.

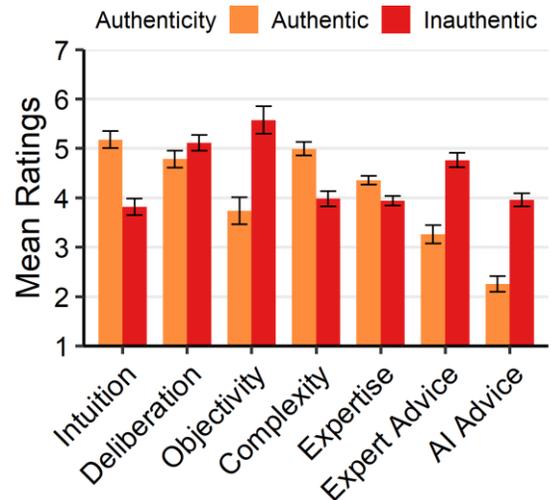


Figure 3: Mean ratings for seven inferential judgements from Experiment 2. Error bars show the standard error of the mean.

To investigate whether the authenticity manipulation had downstream consequences for advice, we conducted linear regression analyses predicting Expert and AI advice ratings from authenticity condition. Authenticity had a negative impact on advice utilization for both Expert, $b = -1.50$, $t(175)$

= -6.44, $p < .001$, $R^2 = .19$, $F(1, 175) = 41.48$, $p < .001$, and Algorithmic, $b = -1.70$, $t(175) = -8.26$, $p < .001$, $R^2 = .28$, $F(1, 175) = 68.15$, $p < .001$, recommendations. Again, the effect of authenticity was not eliminated by including covariates, for either Expert advice, $b = -1.35$, $t(172) = -5.23$, $p < .001$, or Algorithmic advice, $b = -1.48$, $t(172) = -6.38$, $p < .001$. In the former case, objectivity, $b = 0.16$, $t(172) = 3.90$, $p < .001$, and complexity, $b = 0.22$, $t(172) = 2.79$, $p < .001$, both had significant effects. In the latter case, the only significant factor besides authenticity was objectivity, $b = 0.16$, $t(172) = 4.20$, $p < .001$.

These analyses confirm our hypothesis that manipulating authenticity not only has a causal impact on processing judgments, but also has downstream effects on advice-taking judgments, beyond relevant covariates.

General Discussion

We began this paper with a puzzle: why is deliberation prescribed when making some decisions, and intuition prescribed for others? We found that people's folk theory of decision-making accords a special role to authenticity. Decisions made on the basis of intuition are more likely to be judged authentic, especially in domains where authenticity is plausibly valued (Experiment 1).

When the value of authenticity is manipulated experimentally, people are more likely to prescribe intuition as a basis for choice (Experiment 2). Importantly, these effects hold above and beyond previously recognized factors, such as computational costs, presumed efficacy, objectivity, complexity, and expertise, which were experimentally or statistically controlled. A noteworthy aspect of these findings is that effects of authenticity are not explicable on grounds of valence or virtue either (i.e., indiscriminately attributing positive characteristics to the "better" choice or decision process), given that measures of *commitment* failed to account for relevant variation in the data.

Experiment 2 also revealed that effects of authenticity extend beyond prescriptions concerning internal processing to prescriptions concerning the role of outside advice: when authenticity was valued, participants were less likely to indicate that the decision-maker should rely on expert or algorithmic advice. Given recent findings connecting cross-domain variation in processing preferences to algorithm aversion in real-world settings (Castelo, Bos, & Lehmann, 2019), our studies pave the way towards an exciting avenue for future research: What role does authenticity play in mediating attitudes towards (and judgments of) algorithmic advice?

Another important question to pursue is what, precisely, authenticity amounts to (Newman & Smith, 2016), and why authenticity has the unique relationship to prescribed intuition that our studies reveal. Put more concretely, which aspects of decisions in intuitive domains is authenticity tracking, and why? One plausible answer is that authenticity might be tracking differences in the relevant *goals* that decision-makers attempt to achieve across domains. For decisions where the core desideratum being satisfied is one's

own experience, intuition might be seen as being a better process by virtue of its unique ability to reflect or capture one's values or emotional state (see also Gallo, Sood, Mann, & Gilovich, 2017).

Our experiments not only raise critical questions but also outline a possible set of answers to our motivating puzzle: People may devalue deliberation because of a perceived connection between intuition and authenticity, and Darwin's decision may seem inappropriate not because he deliberated, but rather because he did not appropriately favor intuition. That is, he did not decide to be authentic.

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