

Being “Rational” Is Not Always Rational: Encouraging People to Be Rational Leads to Hedonically Suboptimal Decisions

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ABSTRACT Often, laypeople motivate themselves or others to make good decisions by encouraging the decision maker to be “rational.” However, this practice could be counterproductive. Laypeople typically think that rational decisions are anti-emotional, based only on “cold” factors such as economic value, and not influenced by “hot” factors such as hedonic experience. Paradoxically, this lay notion of rationality is in stark contrast with the utilitarian notion of rationality, which maximizes overall utility, in which feelings are essential. Demonstrating this paradox, three studies found that participants who were encouraged to be rational were more likely to choose options that yielded less happiness without other benefits and therefore were less rational in the utility-maximizing sense. The research also examines boundary conditions and discusses practical implications.

We all want to make good decisions. Often, people motivate themselves or others to make good decisions by advising the decision maker to be “rational.” Does this advice actually elicit decisions that are truly rational?

To answer the above question, we should first understand how laypeople perceive a rational choice. For centuries, philosophers and laypeople alike have classified decisions into two general categories: those based on reason and those based on feelings. Phrases such as “reason versus passion” and “heart versus mind” capture such a dichotomy. We assumed that laypeople typically consider reason-based decisions to be rational and perceive rational decisions to be the opposite of feelings-based decisions. In other words, in the minds of laypeople, rational decisions are anti-emotional: free from the influence of “hot” subjective factors, such as feelings and hedonic experiences, and instead based only on “cold” objective factors, such as economic value and quantity (Hsee et al. 2003, 2008, 2015). Even *Merriam-Webster’s Dictionary* defines “rational” as “based on facts or reason” and pits “facts and reason” against “emotions or feelings” by adding that rational is “not based on emotions and feelings” (<http://www.merriam-webster.com/dictionary/rational>). We verified our assumption about the lay interpretation of rationalism in a pilot study that we report later.

However, the word “rational” holds different connotations in the minds of laypeople (including lexicographers) versus those in “decision theory,” especially the Benthamian-Kahnemanian framework, which posits that rational decisions maximize one’s overall utility and treats overall utility as overall experienced utility, namely, treats hedonic experience as the core of utility maximization (Sen 1990; Kahneman 1994; Kahneman, Wakker, and Sarin 1997). In this research, we consider Benthamian-Kahnemanian rationality to be truly rational.

The difference between the lay notion of rationality and the Benthamian-Kahnemanian notion of rationality not only is a matter of semantics but also has behavioral consequences and practical implications. In real life, we receive advice from others, including friends, teachers, and self-help guides, for the purpose of making rational decisions. That advice comes loaded with the connotation that we should base decisions not on hot feelings but rather on cold facts, such as an economic cost-benefit analysis. For example, the popular how-to guide *wikiHow* instructs readers to distinguish between “rational mind” and “emotional mind” in order to be rational (<https://www.wikihow.com/Be-Rational>). Likewise, the online decision-making course *Boundless Management* advises people to make rational decisions, which it defines as those that favor “objective data and a formal pro-

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cess of analysis over subjectivity and intuition” (<https://courses.lumenlearning.com/boundless-management/chapter/rational-and-nonrational-decision-making/>).

Since people have been conditioned to interpret rationality as the dismissal of feelings and emotions, advising people to be rational may actually lead to less rational decisions in the Benthamian-Kahnemanian utility-maximizing sense; namely, it may prevent people from maximizing their overall utility.

This research focuses on decision situations with three defining characteristics: first, the choice options involve a trade-off between economic value and hedonic experience; second, decision makers can predict which option will generate the better hedonic experience; third, the economic values are largely specious and entail negligible costs and benefits, and overall utility is largely a hedonic experience.

In such situations, the truly (Benthamian-Kahnemanian) rational choice is the option that is predicted to yield the best hedonic experience. However, we hypothesize that encouraging decision makers to be rational will lead them to discount predicted hedonic experience and focus on economic value, thereby decreasing their likelihood of choosing the truly rational option.

PILOT STUDY

The pilot study aimed to test whether the layperson’s interpretation of rationality does indeed focus on cold factors, such as economic value, and downplay hot factors, such as feelings. In this study, we described three pairs of general options, each containing one option that was superior on cold factors and one option that was superior on hot factors. Participants were assigned randomly to a control condition and a rational condition and then were asked to choose one option from each pair.

Method

Participants were 120 workers recruited from Amazon Mechanical Turk (MTurk) in the United States (66 females, $M_{\text{age}} = 38.30$). Participants read one of two versions of a questionnaire that corresponded to the assigned “control” and “rational” conditions. We reproduce the questionnaire below, italicizing the parts that differed between conditions:

Suppose you have the following two options:
Option A subjectively feels better to you.
Option B is better on objective factors.
[Control condition] Which option would you choose?
[Rational condition] If you want to be superrational, which option would you choose?

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Suppose you have the following two options:
Option C makes you feel better emotionally.
Option D is a much better deal financially.
[Control condition] Which option would you choose?
[Rational condition] If you want to be superrational, which option would you choose?

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Suppose you have the following two options:
Option E is better according to your gut feelings.
Option F is better according to economic cost-and-benefit analysis.
[Control condition] Which option would you choose?
[Rational condition] If you want to be superrational, which option would you choose?

Results and Discussion

Among all three pairs of options, a larger percentage of participants preferred the option superior on cold factors in the rational condition than in the control condition: 73.3% versus 38.3% in the first pair ($\chi^2(1, N = 120) = 14.90, p < .001$), 86.7% versus 63.3% in the second pair ($\chi^2(1, N = 120) = 8.71, p = .003$), and 76.7% versus 51.7% in the third pair ($\chi^2(1, N = 120) = 8.16, p = .004$).

The study showed that asking people to be rational indeed increased their tendency to choose options superior on cold factors over options superior on hot factors, as we assumed.

STUDY 1 (NECKLACE)

The study examined the choice between two equally expensive fictitious gold necklaces, one of which was superior on weight and original price—two factors related to economic values—and the other was superior on attractiveness of design, a factor related to predicted hedonic experience. The study consisted of three between-participants conditions: control, rational, and experience-prediction.

Method

Participants were 276 female workers recruited from MTurk in the United States ($M_{\text{age}} = 35.60$). We recruited only female participants because the target products were necklaces that were primarily for women.

Depending on their condition (control, rational, or experience-prediction), participants responded to one of three versions of a questionnaire. We reproduce the questionnaire

below, italicizing the parts that differed among the three versions:

You love gold necklaces but do not own one. You have just found a new job with a good salary, and so you are inclined to buy a gold necklace. You plan to wear it yourself and have no intention to sell it [see fig. 1 below].

[Control condition] Which necklace would you choose?

[Rational condition] When deciding which necklace to choose, try to be rational. As a rational decision maker, which one would you choose?

[Experience-prediction condition] When deciding which necklace to choose, try first to predict which one would bring you better overall well-being. Given your prediction, which one would you choose?

Afterward, participants were asked to indicate whether they preferred the design of necklace A or the design of necklace B.

Note that of the two necklaces, necklace A was heavier and valued at a higher original price, while necklace B had a more attractive design for most people (see below for verification). Also note that the initial instructions stated that the necklace would be for participants themselves to wear, not to sell. In other words, necklace A's superiority in weight and original price had little to no real benefit. Thus, for those who preferred the design of necklace B, necklace B was the truly rational choice.

Results and Discussion

Assumption Test. We assumed that most people would prefer the design of necklace B to that of necklace A. Indeed, of the 276 participants, the majority (70.3% participants) preferred the design of necklace B ($\chi^2(1) = 45.45$, $p < .001$, compared with 50%), and this preference did not vary among the three conditions, $\chi^2(2, N = 276) = 1.83$, $p = .401$ (71.7% in the control condition, 65.2% in the rational condition, and 74.1% in the experience-prediction condition).

Choice. First, we performed an analysis of all participants and found a significant difference in choice among the three conditions, $\chi^2(2, N = 276) = 18.06$, $p < .001$. Specifically, a smaller proportion of participants chose necklace B (the more attractive option) in the rational condition (38.0%) than in the control condition (57.6%), $\chi^2(1, N = 191) = 7.29$, $p = .007$. On the other hand, a larger proportion of participants chose necklace B in the experience-prediction condition (69.4%) than in the control condition, $\chi^2(1, N = 184) = 2.75$, $p = .097$.

Then we focused exclusively on participants who preferred the design of necklace B, because only for those participants did the choice between the two necklaces involve a trade-off between economic values and hedonic experience. Again, we found a significant difference in choice among the three conditions, $\chi^2(2, N = 194) = 23.32$, $p < .001$. Specifically, a smaller proportion of participants chose necklace B (the more attractive option) in the rational condition (56.7%) than in the control condition (77.5%), $\chi^2(1, N = 131) =$

	Necklace A	Necklace B
Picture		
Weight	7.05g	5.92g
Original Price	\$999	\$799
Sale Price	\$699	\$699

Figure 1. Information about the two necklaces in study 1.

6.46, $p = .011$. On the other hand, a larger proportion of participants chose necklace B in the experience-prediction condition (93.7%) than in the control condition, $\chi^2(1, N = 134) = 6.89, p = .009$.

These results supported our hypothesis that, ironically, asking people to be rational led their choice away from the truly rational direction in the utility-maximizing sense. On the other hand, asking people to predict experience led their choice toward the truly rational direction.

STUDY 2 (ANIMAL PICTURES)

Study 2 was a strategic replication of study 1 with real consequences rather than hypothetical choices, and it showed that people who were advised to be rational actually chose the option that made them feel worse. In the study, participants chose between two tasks: one that had a higher pay rate (higher economic value) and another that was more enjoyable (better hedonic experience). Importantly, the difference in pay rates was specious and would not influence the final economic outcome. Similar to study 1, study 2 comprised three between-participants conditions: a control condition, a rational condition, and an experience-prediction condition.

Method

Participants were 184 workers (113 females, $M_{\text{age}} = 34.14$) recruited from MTurk in the United States. Participants were told that their task was to rate a set of animal pictures over a 240-second period, and they could choose to rate either a set of cat pictures with a lower per-picture pay rate or a set of mouse pictures with a higher per-picture pay rate. Specifically, the first set contained 36 cat pictures with a per-picture pay rate of 1.5 cents; the second set contained 18 mouse pictures with a per-picture pay rate of 3.0 cents. Therefore,

participants would earn the same total payment— $36 \times 1.5 \text{ cents} = 54 \text{ cents}$; $18 \times 3.0 \text{ cents} = 54 \text{ cents}$ —regardless of their choice, and participants were told so explicitly.

Participants were then presented with a sample picture (fig. 2) from each set. After receiving the instructions and viewing the sample pictures, participants made their choice after reading one of the following three prompts:

[Control condition] Which option would you choose?

[Rational condition] When deciding which option to choose, be rational. As a rational decision maker, which option would you choose?

[Experience-prediction condition] Before making your choice, first make a prediction as to which option would make you feel better (or less bad) while viewing and rating the pictures. Given your prediction, which option would you choose?

After participants made their choice, they began to view and rate their chosen set of pictures. The pictures were displayed one by one on the screen. Specifically, each cat picture was displayed for 6.7 seconds, and each mouse picture was displayed for 13.3 seconds, so the two sets of pictures had the same total display duration. While each picture was displayed, participants answered three questions: (1) “How clear is this picture?”; (2) “How good is the composition of the picture?” and (3) “How do you feel now?” Of the three questions, the first two questions represented the ostensible purpose of the study but were not actually important for testing our theory. On the other hand, the third question measured momentary hedonic experience and was our main dependent variable. Participants answered on a 7-point scale on which 1 meant “not very good” and 7 meant “extremely good.” (Pretests indicated that most participants were able to answer all three questions within the display



Figure 2. Sample cat picture and sample mouse picture used in study 2.

duration of each picture. In case a participant needed more time to answer all the questions for a certain picture, the picture remained on the screen until the participant answered all the questions.)

Besides measuring participants' momentary hedonic experiences (i.e., their feelings while viewing the pictures), we also measured their retrospective hedonic experiences. Specifically, after viewing all of the pictures, participants were asked to rate their overall feeling for the last 240 seconds on the same 7-point scale. Finally, participants were asked which type of pictures they predicted they would enjoy more according to the sample pictures they had seen.

Note that of the two sets of pictures, the mouse pictures had a superior per-picture pay rate, and the cat pictures were more enjoyable for most participants (see below for verification). Importantly for the manipulation, however, the total payment was identical for the two sets of pictures, and participants received their total payment only after viewing all the pictures. Thus, the difference in the economic values of the two options was only specious; the final economic outcomes were actually the same. The only real difference between the two sets of pictures was the enjoyment associated with viewing them. If a participant predicted he/she would enjoy viewing the cat pictures more, the truly rational choice would be to choose the cat pictures.

Results and Discussion

Assumption Test. We assumed that most participants would enjoy viewing the cat pictures more than viewing the mouse pictures. Indeed, of the 184 participants, the majority (84.2% participants) predicted that they would enjoy viewing the cat pictures more, $\chi^2(1) = 86.28, p < .001$ (compared with 50%), and this preference did not vary among the three conditions, $\chi^2(2, N = 184) = 2.92, p = .232$ (83.1% in the control condition, 90.3% in the rational condition, and 79.4% in the experience-prediction condition).

Choice. First, we analyzed the choices of all participants and found a significant difference in choice among the three conditions, $\chi^2(2, N = 184) = 18.50, p < .001$. Specifically, a smaller proportion of participants chose to view the cat pictures in the rational condition (11.3%) than in the control condition (35.6%), $\chi^2(1, N = 121) = 10.04, p = .002$. This result replicated the corresponding choice result in Study 1 and supported our hypothesis that decision makers who were advised to be rational would be less likely to select the truly rational choice in the utility-maximizing sense. On the other hand, a somewhat larger proportion of participants

chose to view the cat pictures in the experience-prediction condition (46.0%) than in the control condition, although this difference was not statistically significant, $\chi^2(1, N = 122) = 1.37, p = .241$.

Then we focused exclusively on participants who predicted that they would enjoy the cat pictures more, because only for those participants did the choice between the two sets of pictures involve a trade-off between economic value and hedonic experience. Again, we found a significant difference in choice among the three conditions, $\chi^2(2, N = 155) = 24.66, p < .001$. Specifically, a smaller proportion of participants chose to view the cat pictures in the rational condition (12.5%) than in the control condition (42.9%), $\chi^2(1, N = 105) = 12.32, p < .001$. On the other hand, a somewhat larger proportion of participants chose to view the cat pictures in the experience-prediction condition (58.0%) than in the control condition, although this difference was not statistically significant, $\chi^2(1, N = 99) = 2.27, p = .132$.

Happiness (Momentary Experience). Including all participants, we found a significant difference in momentary experience (the average of the experiences associated with viewing the individual pictures) among the three conditions, $F(2, 181) = 13.82, p < .001$. More specifically, planned contrasts showed that participants in the rational condition were less happy ($M = 4.42, SD = 1.56$) than participants in the control condition ($M = 4.87, SD = 1.37$), $p = .061$, whereas participants in the experience-prediction condition were more happy ($M = 5.65, SD = 1.01$) than participants in the control condition, $p = .001$.

These results held when we focused exclusively on the subset of participants who predicted that they would enjoy the cat pictures more, $F(2, 152) = 16.15, p < .001$. More specifically, planned contrasts showed that participants in the rational condition were less happy ($M = 4.31, SD = 1.59$) than participants in the control condition ($M = 4.93, SD = 1.32$), $p = .019$, whereas participants in the experience-prediction condition were more happy ($M = 5.77, SD = 0.92$) than participants in the control condition, $p = .002$.

Happiness (Retrospective Experience). Including all participants, we found a significant difference among the three conditions, $F(2, 181) = 12.21, p < .001$. Planned contrasts showed that participants in the rational condition were less happy ($M = 4.44, SD = 1.81$) than participants in the control condition ($M = 5.03, SD = 1.40$), $p = .034$, whereas participants in the experience-prediction condition were

more happy ($M = 5.79$, $SD = 1.37$) than participants in the control condition, $p = .007$.

Again, these results held when we focused exclusively on the subset of participants who predicted that they would enjoy the cat pictures more, $F(2, 152) = 13.15$, $p < .001$. Planned contrasts showed that participants in the rational condition were less happy ($M = 4.34$, $SD = 1.87$) than participants in the control condition ($M = 5.06$, $SD = 1.39$), $p = .020$, whereas participants in the experience-prediction condition were more happy ($M = 5.90$, $SD = 1.33$) than participants in the control condition, $p = .008$.

Discussion. Using real-consequence choices, study 2 showed that advising people to be rational decreased the likelihood that they would choose the truly rational option, thereby decreasing both their momentary and retrospective hedonic experiences.

We should note that previous research found that even specious financial advantages may make people happier (Lee and Tsai 2014), which suggests that in this study, the specious higher per-picture pay rate of the mouse pictures might have made those who chose the mouse pictures happier. However, even if that were the case, this happiness did not offset the relative misery of viewing the mouse pictures: compared with participants who chose the cat pictures, participants who chose the mouse pictures reported both lower momentary hedonic experiences ($M_{\text{cat}} = 5.91$, $SD_{\text{cat}} = 0.85$, $M_{\text{mouse}} = 4.57$, $SD_{\text{mouse}} = 1.43$; $t(182) = 6.62$, $p < .001$) and retrospective hedonic experiences ($M_{\text{cat}} = 6.12$, $SD_{\text{cat}} = 1.00$, $M_{\text{mouse}} = 4.63$, $SD_{\text{mouse}} = 1.65$; $t(182) = 6.32$, $p < .001$).

STUDY 3 (CONDO)

While the previous two studies showed that the be-rational advice could be counterproductive in helping people make truly rational choices, study 3 aimed to specify when the be-rational advice hurts and when it helps. We hypothesize that the answers depend on which type of factors—hot or cold—is more predictive of overall utility. Specifically, when hot factors are more predictive of overall utility, the be-rational advice will lead to worse decisions; when cold factors are more predictive of overall utility, the be-rational advice will lead to better decisions. The previous studies focused on the former situation only, but Study 3 included both situations and tested our above proposition.

Method

Participants were 480 workers recruited from MTurk in the United States (259 females, $M_{\text{age}} = 37.06$). The study fol-

lowed a 2 (purpose: “to sell” vs. “to live”) $\times$ 3 (instructions: control vs. rational vs. overall utility) between-participants design. Participants were assigned randomly to one of the six conditions and viewed the corresponding questionnaire. We reproduce the questionnaire below, italicizing the parts that differed among the six versions:

Imagine the following: You are single and live by yourself. You have participated in a lottery drawing sponsored by a real estate developer and have won the grand prize—a new 1-bedroom condo.

[To-live condition]:
According to the rules of the lottery, you can use the new condo only for yourself and cannot sell it. You currently don’t own a home. So you plan to move into the new condo as soon as you receive it from the developer.

[To-sell condition]:
According to the rules of the lottery, you can either use the new condo yourself or sell it. You already own a home and don’t need the new condo. So you plan to sell it as soon as you receive it from the developer.

The developer gives you two new condos to choose from. Their specifications are as follows [see table 1]:

According to all the objective specifications, condo A is better than condo B. However, when you visit the two condos, you somehow feel more comfortable in condo B than in condo A. You are not sure why you have such feelings. You know, however, that these feelings are subjective; they are applicable only to you and not to others.

You are about to make your choice.
[Control condition]: Which condo would you choose?

Table 1. Condo Specifications Presented to Participants in Study 3

	Condo A	Condo B
Total square footage	860 square feet	840 square feet
Size of the living room	255 square feet	250 square feet
Size of the kitchen	110 square feet	105 square feet
Size of the bedroom	150 square feet	145 square feet
Estimated market value	\$190,000	\$180,000

[Rational condition]: Please be rational. As a rational decision maker, which condo would you choose?

[Overall utility/to-live condition]: Because you will use the condo yourself and will not sell it, your goal is to choose a condo that will maximize your subjective well-being when you live in it. Given that, which condo would you choose?

[Overall-utility/to-sell condition]: Because you will not use the condo yourself and will sell it immediately, your goal is to choose a condo that will maximize your financial returns when you sell it. Given that, which condo would you choose?

(Within the overall-utility condition, we used different wordings in the to-live and to-sell conditions because, unlike the other studies, which did not vary the purpose of the decision, the present study manipulated the purpose of the decision so that the meanings of overall utility were different between the to-live and to-sell conditions.) Participants answered on a 6-point scale where 1 meant “definitely condo A” and 6 meant “definitely condo B.”

Note that of the two condos, condo A was superior on cold factors (better objective specifications and a higher market value), and condo B was superior on hot factors (better subjective feelings); thus, the lay rational option was condo A. If the condo was to be used by oneself, overall utility would depend primarily on hot factors such as comfort, and the truly rational choice in the utility-maximizing sense would be condo B, which was different from the lay rational option (condo A). By contrast, if the condo was to be sold immediately, overall utility would depend primarily on cold factors such as the condo’s market value, and the truly rational choice in the utility-maximizing sense was the same as the lay rational option (condo A).

According to our theory, the be-rational advice would invariably increase the choice share of the lay rational option (condo A) regardless of the chooser’s purpose for the condo. Thus, the advice would be harmful in the to-live condition but helpful in the to-sell condition.

Results and Discussion. Figure 3 displays the results; note that higher numbers indicate a greater preference for the option superior on subjective feelings (condo B), and lower numbers indicate a greater preference for the option superior on objective values (condo A). A 2 (purpose) $\times$ 3 (instructions) analysis of variance on preference ratings yielded a main effect of purpose, $F(1, 474) = 58.92$, $p < .001$, a

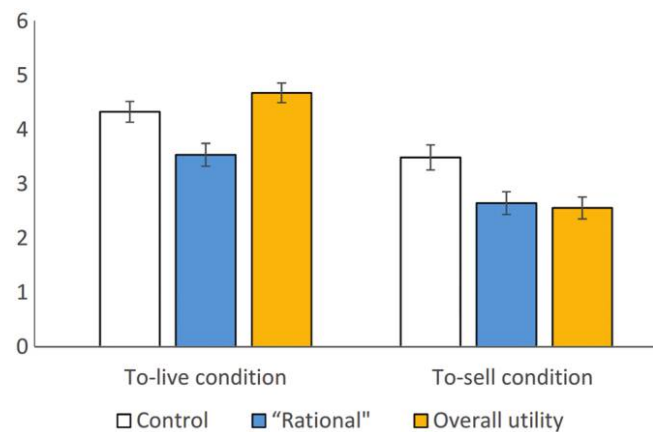


Figure 3. Study 3 results, showing that the be-rational advice hurt in the to-live condition but helped in the to-sell condition. (Ratings were made on a 6-point scale, with larger numbers meaning a stronger preference for condo B, superior on hot factors.)

main effect of instructions, $F(2, 474) = 8.13$, $p < .001$, and an interaction effect, $F(2, 474) = 6.32$, $p = .002$.

In the to-live condition (in which the truly rational choice was condo B, superior on subjective feelings), we found a significant difference in preference among the three instruction conditions, $F(2, 237) = 8.97$, $p < .001$. Specifically, planned contrasts showed that participants in the rational condition were less likely to choose condo B ($M = 3.54$, $SD = 1.89$) than were participants in the control condition ($M = 4.33$, $SD = 1.71$), $p = .005$, and participants in the overall-utility condition ($M = 4.68$, $SD = 1.61$), $p < .001$. There was no significant difference between the control and overall-utility conditions, $p = .196$. These results replicated the corresponding choice results in studies 1 and 2 and supported our hypothesis that the be-rational advice ironically makes one’s decision less rational in the Benthamian-Kahnemanian utility-maximizing sense.

In the to-sell condition (in which the truly rational choice was condo A, superior on objective specifications and market value), we also found a significant difference in preference among the three instruction conditions, $F(2, 237) = 5.77$, $p = .004$. Specifically, according to the results of planned contrasts, compared with participants in the control condition ($M = 3.49$, $SD = 2.06$), participants in the rational condition were more likely to choose condo A ($M = 2.65$, $SD = 1.86$), $p = .006$. Participants in the overall-utility condition had a similar preference to participants in the rational condition ($M = 2.56$, $SD = 1.82$), $p = .780$, and a stronger preference for condo A than participants in the control condition, $p = .002$.

In short, regardless of the purpose of the decision (to live or to sell), the be-rational advice invariably steered people away from the better-subjective-experience option (condo B) and toward the greater-objective-value option (condo A), thus making the choice less consistent with the purpose of the decision (and hence less utility-maximizing) in the to-live condition but more consistent with the purpose of the decision (and hence more utility-maximizing) in the to-sell condition.

A limitation of the study is that in the overall-utility condition, we used different instructions between the to-live and to-sell conditions. As noted earlier, we did so in order to reflect the difference in the meaning of overall utility between the two conditions. Theoretically, we should have simply asked participants in both the to-live and to-sell conditions to maximize their overall utility, but we doubted that laypeople would understand our jargon of "overall utility." Future research may try instructions such as "to make the best decision" or "to choose the option that best serves your purpose."

GENERAL DISCUSSION

Three experiments found that people who were advised to be rational could make decisions that actually were less rational in the utility-maximizing sense. This research carries both theoretical and practical implications. Theoretically, this research contributes to the extant literature on the notion of rationality, suggesting that it entails distinct connotations for laypeople and academics, especially those who believe in maximizing overall experienced utility. The lay notion of rationality treats feelings and emotions as demons that the rational decision maker ought to despise, whereas the utility-maximizing notion of rationality treats feelings and emotions as gods that the rational decision maker ought to revere.

The present work extends existing work on "lay rationalism" in three ways. First, while the previous research on lay rationalism is about individual differences (Hsee et al. 2015), the present research studies the effect of an instant experimental manipulation (the be-rational advice) and shows that this simple manipulation can influence people to make different decisions. Second, while the previous research on lay rationalism makes no predictions as to whether people high or low in lay rationalism make worse decisions, the present research shows that the be-rational advice can lead to worse decisions, thus corroborating existing research that highlights the importance of affect and emotions in decision making (Zajonc 1980; Lee, Amir, and Ariely 2009; Greifene-

der, Bless, and Pham 2011; Avnet, Pham, and Stephen 2012; Pham, Lee, and Stephen 2012). Finally, the present research identifies conditions in which the be-rational advice hurts or helps. Specifically, we find that the be-rational advice hurts if hot factors are more predictive of overall utility and helps if cold factors are more predictive of overall utility.

Our results also enrich existing research showing the negative effect of introspection on decisions (Wilson and Schooler 1991; Wilson et al. 1993). To the extent that asking people to be rational leads to increased introspection, our findings are consistent with Wilson and coauthors' findings. However, our research is different from the previous work in at least two ways. First, while introspection makes people focus on factors that are easy to verbalize, we propose and find that people who are instructed to be rational tend to focus on cold factors such as economic values rather than hot factors such as emotions. Second, we specify when the be-rational advice helps and when it hurts, and we offer empirical evidence.

Practically, the present research cautions people that the age-old and widespread advice to be rational in decision making can be counterproductive, leading decision makers to sacrifice their happiness with no real benefits. Although it is beneficial to be rational in the lay sense when cold factors are more predictive of overall utility, people are not sensitive to situational variations and tend to overgeneralize rules and heuristics from one situation to another (Tversky and Kahneman 1974; Arkes and Ayton 1999). Thus, even in situations in which hot factors are more predictive of overall utility and cold factors have little additional predictive power, people may still advise themselves or others to be rational in the lay sense and thus may motivate worse decisions.

This research also raises open questions that await future research. First, we have shown that the be-rational advice influences decision makers to give more weight to factors related to economic values, such as product price and task pay rate, than to factors related to hedonic experience, such as design attractiveness and picture enjoyment. We have argued more generally that the be-rational advice causes decision makers to give more weight to cold factors than to hot factors. However, a more comprehensive and precise theory is needed to determine what factors are cold and what factors are hot, and to elucidate how the distinction between hot and cold factors maps onto other potentially related distinctions (e.g., between material possessions and experiential consumption [Carter and Gilovich 2010], between utilitarian factors and hedonic factors [Dhar and Wertenbroch 2000], between easy-to-evaluate factors and hard-

to-evaluate factors [Hsee 1996b; Hsee et al. 1999; Hsee and Zhang 2010], between comparable factors and enriched factors [Nowlis and Simonson 1997, and between affect-rich factors and affect-poor factors [Hsee and Rottenstreich 2004; Rottenstreich and Hsee 2001]].

Second, this research shows that the be-rational advice may lead to a worse decision in the utility-maximizing sense, so we naturally wonder, what advice would improve decision making? One possible answer is to advise decision makers to predict their experience before they make their choice. Indeed, we included such a condition in all experiments. This manipulation produced a significant effect on choice in study 1 but only a directional and nonsignificant effect on choice in studies 2 and 3. It is not clear whether this advice could reliably change choices, nor is it clear whether people can always accurately predict their future experience. In fact, extant research suggests that people often predict their future experience inaccurately (Gilbert and Wilson 2000; Loewenstein, O'Donoghue, and Rabin 2003; Hsee and Zhang 2004; Wilson and Gilbert 2005; Morewedge et al. 2010).

Third, while this research focuses on lay rationalism, future research needs to explore its relationship with other similar constructs. For example, one of such constructs is justifiability, which refers to the extent to which people regard judgment and decisions as fair and accountable to oneself and others (Hsee 1995, 1996a; Bazerman, Tenbrunsel, and Wade-Benzoni 1998; Lerner and Tetlock 1999; Norton, Vandello, and Darley 2004; Keinan, Kivetz, and Netzer 2016). Lay-rational decisions are based on cold objective factors and are presumably more justifiable (Shafir, Simonson, and Tversky 1993). But the two constructs are not the same. For example, a marital decision based on love is likely considered more justifiable than a marital decision based on monetary calculations, even though the former is based on hot factors and the latter is based on cold factors. To investigate whether asking people to make justifiable decisions would yield the same results as asking people to make rational decisions, we included a "justifiable" condition ($N = 60$) in our pilot study in addition to the control and rational conditions. In the justifiable condition, participants were given the same three pairs of choices as in the other conditions and were asked, "If you want to make your decision justifiable to yourself and others, which option would you choose?" On average, a smaller proportion of participants chose the options superior on cold factors in the justifiable condition (46.7%, 56.7%, and 56.7% in the three pairs, respectively) than in the rational condition, and the

proportions were similar in the justifiable and control conditions, suggesting that being justifiable is not identical to being rational.

The present research also relates to the notions of extrinsic and intrinsic rewards (Deci, Koestner, and Ryan 1999; Ryan and Deci 2000; Woolley and Fishbach 2015). The be-rational advice may cause people to focus on extrinsic rewards rather than on intrinsic rewards, because extrinsic rewards are often cold factors (e.g., money) and intrinsic rewards are often hot factors (e.g., passion and fulfillment). However, existing research on extrinsic and intrinsic rewards mainly concerns people's motivation in an ongoing activity (e.g., how the presence of an extrinsic reward crowds out one's intrinsic motivation in a drawing task), whereas the present research mainly concerns people's choice when faced with options involving a trade-off between cold and hot factors.

To conclude, depending on the situation, rationality in the lay sense can be consistent or inconsistent with rationality in the Benthamian-Kahnemanian utility-maximizing sense. When hot factors are most predictive of overall utility, the be-rational advice can lead a decision maker astray from the truly rational choice. Being "rational" is not always rational.

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