



UvA-DARE (Digital Academic Repository)

Fit between decision mode and processing style predicts subjective value of chosen alternatives

Dijkstra, K.A.; van der Pligt, J.; van Kleef, G.A.

DOI

[10.1002/ejsp.2217](https://doi.org/10.1002/ejsp.2217)

Publication date

2017

Document Version

Final published version

Published in

European Journal of Social Psychology

[Link to publication](#)

Citation for published version (APA):

Dijkstra, K. A., van der Pligt, J., & van Kleef, G. A. (2017). Fit between decision mode and processing style predicts subjective value of chosen alternatives. *European Journal of Social Psychology*, 47(1), 72-81. <https://doi.org/10.1002/ejsp.2217>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (<https://dare.uva.nl>)

RESEARCH ARTICLE

Fit between decision mode and processing style predicts subjective value of chosen alternatives

Koen A. Dijkstra^{*,†}, Joop van der Pligt^{*} & Gerben A. van Kleef^{*}

* University of Amsterdam, Amsterdam, The Netherlands

† Leeds University Business School, Leeds, UK

Correspondence

Koen Dijkstra, CUHK Business School, The Chinese University of Hong Kong, Cheng Yu Tung Building, 12 Chak Cheung Street, Shatin, N.T., Hong Kong.
E-mail: dijkstra@baf.cuhk.edu.hk

Received: 6 December 2015

Accepted: 17 April 2016

<http://dx.doi.org/10.1002/ejsp.2217>

Keywords: global versus local processing style, judgment and decision-making, intuition, deliberation, decisional fit

Abstract

Intuition is associated with a global processing style, whereas deliberation is associated with a local processing style. Drawing on previous research on the effects of decisional fit on the subjective value attached to chosen alternatives, we examined the possibility that a fit between processing style and decision mode results in greater subjective value than a lack of fit. In three experiments employing various combinations of naturally occurring and experimentally manipulated processing styles and decision modes, we found that when congruence was high (i.e., global processing style and intuitive judgment, or local processing style and deliberative judgment), participants judged their chosen item to be more expensive than when congruence was low. These findings indicate that increased fit resulted in higher estimated value. We discuss implications for judgment and decision-making.

Research has shown that relying on intuition can yield more advantageous judgments and decisions than relying on reasons and an extensive deliberation about pros and cons, at least in some domains (e.g., Dijkstra, Van der Pligt, & Van Kleef, 2012; Dijkstra, Van der Pligt, Van Kleef, & Kertsholt, 2012; Halberstadt & Green, 2008; Wilson & Schooler, 1991). Deliberation induces a local processing style in which people are focused on details and accessible and easy-to-verbalize information. In contrast, intuition is related to a global processing style in which people attend to the global picture and take information into account that is difficult to verbalize and more experiential in nature (Dijkstra, Van der Pligt, & Van Kleef, 2014; Dijkstra, Van der Pligt, et al., 2012; Tordesillas & Chaiken, 1999; Wilson, Hodges, & LaFleur, 1995). In the present article, we extend this literature by examining the effects of (lack of) fit between a person's decision mode (intuitive vs. deliberative) and processing style (global vs. local) on the perceived value of the decision outcome.

Decision Mode and Processing Style

Decision strategies are often divided into intuitive strategies, which are fast, parallel, and high capacity, versus deliberate strategies, which are slow, sequential, and low capacity (refer for an overview to Evans, 2008, 2010). Here, we adopt the definition of intuition as formulated by Hogarth (2001): "The essence of intuition or intuitive responses is that they are reached with little apparent effort and typically without conscious awareness. They involve little or no conscious deliberation" (Hogarth, 2001, p. 14). Furthermore, as noted by Hogarth (2010), "intuitive judgments are typically—but not always—correlated with speed and often a sense of confidence. Moreover, they may have cognitive or emotional origins that result from pattern recognition (e.g., Klein, 1993) or feelings such as, say, fear (e.g., Damasio, 1994; Le Doux, 1996). Most authors also agree that intuitions are experienced in a holistic manner (e.g., Sadler-Smith, 2008); that is, conclusions are based on overall impressions as opposed to cognitively combining separate elements of a problem" (p. 339).

As noted earlier, processing style mediates the effect of decision mode on the quality of decision-making. Processing style refers to the way people attend to information. People can either attend to the Gestalt of a stimulus or pay more attention to its details. A collection of trees for example can be seen as a forest, but people can also direct their attention to the individual trees (Gasper & Clore, 2002; Navon, 1977; Schooler, 2002). This attentional selection mechanism operating on a perceptual level is correlated with the attentional mechanism used to select conceptual nodes within the semantic network. Both regulate perceptual and conceptual processes (Derryberry & Tucker, 1994; refer also to Förster, 2009 and Förster, Friedman, Özelsel, & Denzler, 2006). A local processing style is related to searching for details and attending to this information in sense making. In contrast, when in a global processing style people make sense of a stimulus by attending to the stimulus on a holistic level, integrating it into superordinate, inclusive knowledge structures. In other words, local processors focus on information that is central to the task at hand. Global processors, in contrast, also take peripheral information into account in decision-making and judgment (Dijkstra *et al.*, 2014). Generally, a global processing style supports creativity and metaphor understanding, while a local processing style supports analytical thinking and concrete construals (Förster & Dannenberg, 2010).

Further evidence for an association between processing style and decision mode was obtained by Friedman, Fishbach, Förster, and Werth (2003). They showed, among other findings, that participants exhibited less analytic thought after the induction of a global compared with a local processing style. Consistent with these findings, Förster, Epstude, and Özelsel (2009) demonstrated that a local processing style supports analytical and logical thinking (refer also to Friedman & Förster, 2000 and Markman, Lindberg, Kray, & Galinsky, 2007).

Decisional Fit

Research has found that the way people make decisions can affect how they value the decision outcome. People experience value of the decision outcome when the strategy they used fits their dispositional preference or current orientation. Examples can be found in work on promotion versus prevention focus (Higgins, 2000). For instance, people who are generally concerned with the presence or absence of positive outcomes are likely to decide on the basis of possible gains rather than possible losses. Fit effects are commonly demonstrated by revealing a higher estimated price for a chosen item for participants in conditions where their dispositional preference or current orientation fits the used choice strategy compared with conditions where there is a lack of fit (e.g., Betsch & Kunz, 2008; De Vries, Holland, & Witteman, 2008; Förster & Higgins, 2005; Higgins, Idson, Freitas, Spiegel, & Molden, 2003). Decisional fit makes people feel right about the used strategy and

leads to the experience of value. This experience of value is derived from the manner in which a goal is pursued rather than from relevance to desired end-states (Higgins *et al.*, 2003).

The effects of fit have been studied extensively in the domain of regulatory focus (e.g., Avnet & Higgins, 2003; Higgins, 2000; Higgins *et al.*, 2003). Promotion-oriented individuals—who are generally concerned with the presence or absence of positive outcomes—experience value when focusing on gains. In contrast, prevention-oriented individuals—who are generally focused on the presence or absence of negative outcomes—experience value when avoiding losses. Research has shown that this experience of fit is translated into subjective value. For instance, Higgins *et al.* (2003) asked participants to choose to receive a pen or a mug. Half of the participants were instructed to think about what they would gain by choosing the pen and what they would gain by choosing the mug. The other half were instructed to think about what they would lose by not choosing the pen or not choosing the mug. Promotion-oriented individuals who focused on gains and prevention-oriented individuals who focused on losses estimated the value of the chosen product to be higher than participants in the non-fit conditions.

Fit or congruence can also be experienced as a consequence of a match between situationally induced processing style and decision strategy. A global processing style for example fits a decision strategy focusing on gains, while a local processing style fits a strategy focusing on losses (Förster & Higgins, 2005). Förster and Higgins (2005) argued that in case of a threat, the cautious encoding of local details is crucial. In contrast, when focusing on accomplishments, processing the concrete surroundings would be insufficient or even detrimental for effective goal pursuit. Instead, information processing that goes beyond the given information and that leads to an explorative and global processing style might be more appropriate.

Other fit effects have been demonstrated for mood (happy vs. sad) and intuitive or deliberative decision strategies (De Vries *et al.*, 2008). Betsch and Kunz (2008) also examined fit effects in intuitive or deliberative decision strategies and focused on the fit between participants' dispositional preference for decision strategies on a continuum between intuition and deliberation and the decision strategy they used. Their findings showed clear effects of the fit between dispositional preference and decision strategy. In the present series of experiments, we extend such fit effects by examining the effects of fit between processing style (global vs. local) and decision mode (relying on intuition vs. deliberation).

As stated earlier, people experience value of the decision outcome when the strategy they used fits their dispositional preference or current orientation. Given that people appear to process information in a holistic manner when relying on intuition (e.g., Förster & Dannenberg, 2010; Sadler-Smith, 2008), and in a more detailed and analytical manner when deliberating

(e.g., Dijkstra, Van der Pligt, et al., 2012; Förster et al., 2009; Friedman & Förster, 2000; Markman et al., 2007), we expected that processing information in a holistic or detailed manner when relying on compatible decision modes (intuitive and deliberative, respectively) would feel natural and hence result in fit effects. We test this hypothesis in various combinations of naturally occurring and experimentally manipulated processing styles and decision modes.

Overview of the Experiments

In Experiment 1, we tested whether congruency between instructed judgment mode and naturally occurring processing style has an impact on the subjective value of a chosen item. In Experiment 2, we measured preference for intuition and deliberation and induced a global or local processing style. In Experiment 3, we manipulated both judgment mode and processing style and showed that manipulated processing style and judgment mode can also result in different degrees of subjective value from decisional fit.

In the studies that involved continuous measures of processing style (Experiment 1) and preference for intuition versus deliberation (Experiment 2), we examined fit effects by computing the interaction between processing style and deliberation versus intuition based on the continuous measures and testing the effect using regression analysis. In Experiment 3, both processing style and deliberation versus intuition were manipulated categorically, and therefore, we used ANOVA in this study.

Experiment 1

In Experiment 1, we focus on the fit between decision mode (intuitive vs. deliberative) and existing preference for processing style (global vs. local) and test whether fit conditions result in higher subjective value of the chosen item than non-fit conditions. Given that dispositional preference for intuitive versus deliberative decision-making and utilization of respective decision modes leads to decisional fit (Betsch & Kunz, 2008), we expected that induced intuitive versus deliberative decision-making would lead to higher subjective value among participants using a global versus local processing style, respectively, and to lower subjective value among participants using a local versus global processing style.

Method

Participants. We recruited 110 participants online using Amazon's Mechanical Turk (www.mturk.com; Buhrmester, Kwang, & Gosling, 2011; Horton, Rand, & Zeckhauser, 2011). Sixty participants were male, 50

were female. Age ranged from 21 to 63 years old ($M=33.63$, $SD=10.32$). Participation was limited to U.S. residents only.

Materials and procedure. First, processing style was assessed by the visual matching task (Gasper, 2004; Gasper & Clore, 2002; Kimchi & Palmer, 1982). Participants were presented with a series of 24 trials. Each trial consisted of a target figure (e.g., a square composed of small triangles) and two sample figures (Figure 1). Participants indicated whether the target figure looked more like a sample figure that shared local, but not global features with the target (e.g., a triangle composed of smaller triangles), or like one that shared global, but not local features with the target (e.g., a square composed of smaller squares). Four possible targets exist (square of squares, square of triangles, triangle of squares, and triangle of triangles). Following Gasper and Clore (2002), a total of 12 different trials were created by varying the size of the figures. Each of these targets was presented twice (resulting in a total of 24 trials), so that whether its local or global, match was on the left or right could be counterbalanced. Participants were instructed to make their judgment quickly and not to dwell on the items. The number of times that participants matched the shapes on the basis of their global form rather than their local details was calculated and functioned as an indicator of processing style (Gasper & Clore, 2002).

Following the assessment of processing style, participants were informed that they participated in a lottery in which they could win a coffee thermos. They were asked to indicate which out of two thermoses they would choose to obtain if they won the lottery. Participants were randomly assigned to the intuition and deliberation conditions to make their choice of which thermos to win. Participants in the intuition condition were instructed to base their choice on their intuition and not to think too much. That is, they were asked to base their decision on their first affective reaction. In contrast, participants in the deliberation condition were instructed to examine the two thermoses closely and to take ample time to think carefully about the pros and cons of each thermos. That is, they were prompted to

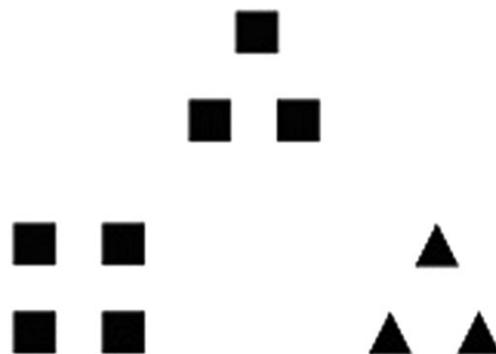


Fig. 1: Example of stimulus used in the visual matching task

make a deliberative choice based on a careful consideration of the relevant features of the thermoses. After making their choice, participants were asked to indicate the value (in dollars) of the chosen thermos. After estimating the value of the thermos, participants were asked to indicate how easy or difficult they thought the decision was on a 6-point scale anchored with *very difficult* and *very easy*.

Results and Discussion

Participants who deviated more than 2.5 standard deviation from the mean estimated value of the thermos were excluded from the analysis (five participants). In accordance with Navon (1977), we found a global superiority effect: The mean number of times that participants relied on global instead of local features in the visual matching task was 16.66 ($SD=9.29$; proportion = 69.4%). A regression analysis showed that relying on local or global features predicted the estimated value of the chosen thermos, $\beta = .28$, $t(102) = 2.90$, $p = .005$: Reliance on local compared with global features was related to a higher estimated price of the thermos.

A Processing Style by Decision Mode interaction showed that the effect of relying on local or global features differed as a function of decision mode, $\beta = .38$, $t(101) = 4.23$, $p < .001$. Simple slope analysis (Aiken & West, 1991) revealed that within the deliberation condition, a local processing style was associated with higher perceived value than a global processing style, $\beta = .72$, $t(101) = 5.25$, $p < .001$. The effect of processing style on estimated value was not significant when choice for the thermos was based on intuition, $\beta = .04$, $t(101) = 0.34$, $p = .73$. This indicates that reliance on local as opposed to global features was related to the estimated monetary value of the chosen thermos in the deliberation condition, but not in the intuition condition. The interaction is graphically depicted in Figure 2.

Comparing thermos choices between the two decision mode conditions revealed no differences in preference for one thermos over the other ($X^2 [1, N=103]$

$= 1.76$, $p = .19$). This suggests that the observed congruency effect on estimated value of the chosen thermos cannot be explained by a difference in thermos preference. In addition, no fit effects were found when testing the interaction between decision mode and processing style on perceived difficulty of the decision, $\beta = .07$, $t(101) = 0.29$, $p = .77$.

Experiment 2

In Experiment 1, we showed clear effects on the fit between a participants' preference for processing style and induced decision mode on the perceived value of their chosen thermos. In Experiment 2, we assessed preference for intuition and deliberation and induced a global or local processing style. Given the finding of Experiment 1, we expected to find a fit effect for congruent decision modes, as reflected in greater subjective value.

Method

Participants. We recruited 75 participants (32 male and 43 female) online using Amazon's Mechanical Turk. Age ranged from 20 to 62 years old ($M=34.55$, $SD=10.39$). Participation was limited to U.S. residents only.

Materials and procedure. Participants completed the Preference for Intuition and Deliberation Questionnaire (Betsch, 2004), which measures preferences for intuitive and deliberative decision-making strategies. This questionnaire comprises 18 items, nine indicating a preference for intuition (Cronbach's $\alpha = .86$), for example "I listen carefully to my deepest feelings," and nine other items indicating a preference for deliberation (Cronbach's $\alpha = .81$), for example, "I prefer making detailed plans rather than leaving things to chance." Items were scored on 5-point scales, anchored with *very*

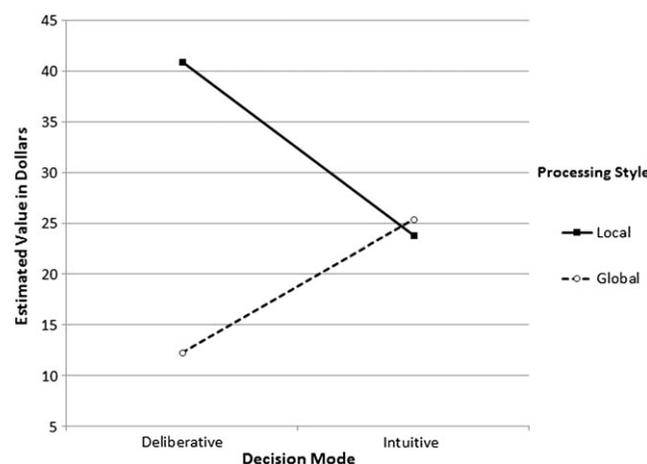


Fig. 2: Estimated value of thermos as a function of decision mode and processing style in Experiment 1

much disagree and *very much agree*. Preference for intuition and preference for deliberation were not correlated; $r = .07$, *ns*. After completing the Preference for Intuition and Deliberation Questionnaire, we induced either a global or local processing style.

Global or local processing style was manipulated by the induction variant of the global–local reaction time measure (Förster & Higgins, 2005). Participants were presented with a series of “global” letters made up of smaller “local” letters (an H made of Ls, an H made of Hs, an L made of Ls, and an L made of Hs; Figure 3). Participants in the global condition were instructed to focus on the global letter and to indicate whether the global letter was either an L or an H. In contrast, participants in the local condition were instructed to focus on the smaller local letters and to indicate whether the local letters were Ls or Hs. Following Förster (2009), a total of 48 global composite letters were presented. This procedure induces a global or a local processing style, respectively (Förster & Higgins, 2005).

Similar to Experiment 1, participants were informed that they participated in a lottery in which they could win a coffee thermos. Again, they could choose which out of two thermoses they would like to obtain if they won the lottery. After making their choice, participants were asked to indicate the value (in dollars) of the chosen thermos. Next, participants were asked to indicate how easy or difficult they thought the decision was. This was assessed on a 7-point scale anchored with *very difficult* and *very easy*. We also asked participants to what extent they had relied on a pros and cons analysis or on their feelings about the thermoses. This was assessed on a 7-point scale anchored with *I solely relied on an elaborate analysis of pros and cons* and *I solely relied on my feelings about the thermoses*.

Results and Discussion

Participants who deviated more than 2.5 standard deviation from the mean estimated value of the chosen thermos were excluded from the analysis (one participant). The two processing style conditions (global vs. local) did not differ in choice for one thermos over the other, $\chi^2(1, N = 74) = 2.10$, $p = .15$. This suggests that a possible congruency effect on estimated value of the chosen thermos cannot be explained by a difference in thermos preference caused by processing style.

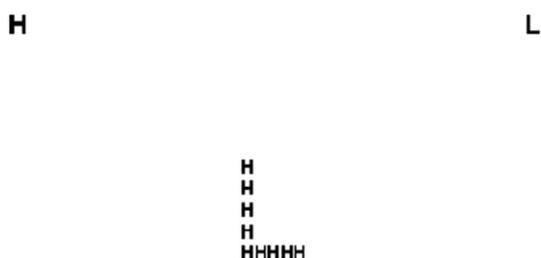


Fig. 3: Example of compound stimulus used in the induction variant of the global–local reaction time measure

For the purpose of creating a single index tapping preference for decision-making strategies, we subtracted the deliberation scale from the intuition scale. Not surprisingly, preference for decision-making strategies was related to the extent to which participants reported to have relied on a pros and cons analysis or on their feelings about the thermoses when making the decision, $\beta = .32$, $t(72) = 2.86$, $p = .006$. Preference for decision-making strategies did not affect reported difficulty of making the decision, $\beta = .11$, $t(72) = 0.92$, $p = .36$.

A regression analysis showed that preference for decision-making strategies in interaction with processing style predicted the value of the chosen thermos, $\beta = .48$, $t(70) = 2.20$, $p = .031$. Simple slope analysis (Aiken & West, 1991) revealed that the effect of processing style on the estimated value of the chosen thermos was marginally significant when the thermos was chosen based on deliberation, $\beta = .30$, $t(70) = 1.78$, $p = .079$, with more local processing being associated with higher estimated value. The effect of processing style on estimated value was not significant when choice for the thermos was based on intuition, $\beta = .28$, $t(70) = 1.51$, $p = .14$. The interaction pattern indicates that reliance on local as opposed to global features was more strongly related to the estimated monetary value of the chosen thermos in the deliberation condition than in the intuition condition. The interaction is graphically depicted in Figure 4. No fit effects were found when testing the interaction between processing style and preference for decision-making strategies on ease of decision-making ($t < 1$).

Experiment 3

The previous two experiments showed a fit effect between naturally occurring processing style and induced decision mode (Experiment 1) and between induced processing style and participants' dispositional preferences for relying on intuition versus deliberation (Experiment 2). Experiment 3 aims to replicate these fit effects in a full experimental design.

Method

Participants. Eighty-nine students at the University of Amsterdam participated in the study. Because of technical malfunction, the demographic information of 16 participants was not registered. Age of the remaining participants ranged from 18 to 50 years old ($M = 21.93$, $SD = 5.32$); 26 participants were male, and 47 were female.

Materials and procedure. We followed a similar procedure to Betsch and Kunz (2008) and De Vries *et al.* (2008). Participants were randomly assigned to conditions in the 2 (processing style: global vs. local) \times 2 (decision mode: intuitive vs. deliberative) between-subjects design. Processing style was induced by the same

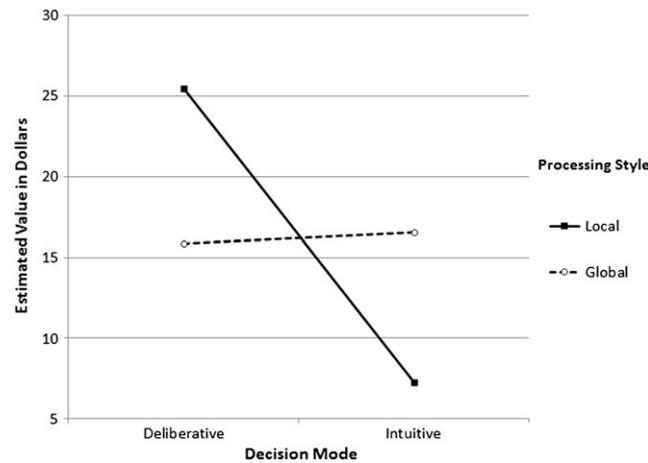


Fig. 4: Estimated value of thermos as a function of decision mode and processing style in Experiment 2

global–local reaction time measure as described in Experiment 2. Following the processing style induction, participants were informed that they participated in a lottery in which they could win a coffee thermos. Again, they could choose which out of two thermoses they wanted to win (Figure 5). Similar to Experiment 1, participants in the intuitive condition were instructed to base their choice on their intuition and not to think too much. In contrast, participants in the deliberative condition were instructed to examine the thermoses closely and to take ample time to think carefully about the pros and cons of each thermos. After making their choice, participants were asked to indicate the value (in euros) of the chosen thermos. In the present study, we

included a number of additional subjective dependent variables compared with the previous two experiments: Participants were asked to indicate how satisfied and confident they were with their choice and how easy or difficult they found the decision. All three measurements were assessed on a 7-point scale anchored with *not at all* and *very much*. Finally, participants were asked to write down their choice and email address on a lottery ticket and to deposit the ticket in a box.

Results and Discussion

Participants who deviated more than 2.5 standard deviation from the mean estimated value of the chosen thermos



Fig. 5: Example of coffee thermoses used in the experiments. [Colour figure can be viewed at wileyonlinelibrary.com]

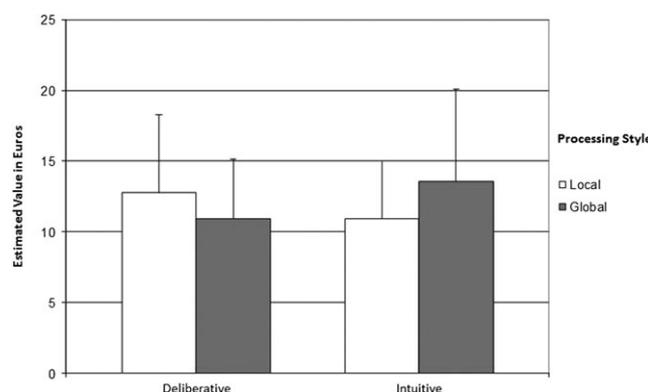


Fig. 6: Estimated value of thermos as a function of decision mode and processing style in Experiment 3

were excluded from the analysis (three participants). To test whether the instruction to decide intuitively or after deliberation was successful, we compared the time that participants took to make their decision. Decision time was subjected to a 2 (processing style: global vs. local) \times 2 (decision mode: intuitive vs. deliberative) ANOVA. The ANOVA revealed a main effect of decision mode. Participants who had been instructed to deliberate took more time for their decision ($M=22.92$, $SD=11.75$) than did those who had been instructed to rely on intuition, $M=10.19$, $SD=8.07$, $F(1, 84)=33.65$, $p<.001$, $\eta_p^2=.29$. A chi-square test revealed that choice for either thermos did not differ across processing style and judgment mode combinations, $X^2(3, N=86)=3.65$, $p=.30$. No other main or interaction effects were found ($F_s < 1$, *ns*). This suggests that a possible congruency effect on estimated value of the chosen thermos cannot be explained by a difference in thermos choice.

Estimated price of the chosen thermos was subjected to a 2 (processing style: global vs. local) \times 2 (decision mode: intuitive vs. deliberative) ANOVA. No main effect of processing style or decision mode was found ($F_s < 1$, *ns*). However, as predicted, we found a significant Processing Style by Decision Mode interaction, $F(1, 82)=4.12$, $p=.046$, $\eta_p^2=.05$.¹ Participants estimated the price of the thermos higher in the fit conditions (global-intuitive: $M=13.58$, $SD=6.54$; local-deliberative: $M=12.80$, $SD=5.51$) than in the non-fit conditions (global-deliberative: $M=10.92$, $SD=4.22$; local-intuitive: $M=10.89$, $SD=4.07$), Figure 6.

Simple comparison tests revealed that the reported interaction was mostly driven by the global condition. The global-intuition versus global-deliberation contrast approached significance, $F(1, 82)=2.74$, $p=.10$. Simple comparison tests between the two local conditions showed no significant effect of processing style, $F(1, 82)=1.46$, $p=.23$.

Contrast analyses further showed that the two fit conditions did not differ from each other ($t < 1$, *ns*), as was also the case for the two non-fit conditions ($t < 1$, *ns*). No fit effects were found for reported satisfaction ($F < 1$, *ns*), reported confidence ($F < 1$, *ns*), and reported ease of the decision, $F(1, 84)=2.17$, $p=.15$, *ns*.

General Discussion

In three experiments, we tested possible fit effects between processing style (global vs. local) and decision mode (intuitive vs. deliberative). We showed that participants who relied on global rather than local features in similarity judgments estimated a chosen thermos to

be more valuable when relying on intuition than when relying on deliberation. Participants who relied on local rather than global features estimated a chosen thermos to be worth more when relying on deliberation than when relying on intuition (Experiment 1). In Experiment 2, we found similar effects of preferences for intuition versus deliberation and induced processing style. In the first two experiments, one of the two variables of interest was measured (processing style in Experiment 1; preference for intuition and deliberation in Experiment 2) and the other manipulated (intuitive vs. deliberative decision mode in Experiment 1; global vs. local processing style in Experiment 2). Finally, Experiment 3 replicated the effects in a full experimental design. This combination of approaches allowed us to test the robustness of the hypothesized fit effects.

Even though the exact pattern of the interaction effects and the significance of the simple slopes differed somewhat across experiments (which may be because of the fact that the independent variables of interest were measured in some cases and manipulated in other cases), all patterns are consistent with a fit interpretation. That is, our findings suggests that there is comparatively greater “fit” when a deliberative mode coincides with a local processing style and when an intuitive mode coincides with a global processing style than when a deliberative mode coincides with a global processing style or an intuitive mode coincides with a local processing style, regardless of whether decision mode and processing style are measured or manipulated.

The comparison between the fit conditions and the non-fit conditions is of course relative. Our data do not allow us to conclude whether the effects are driven primarily by increased value in the fit conditions, decreased value in the non-fit conditions, or both. Future research could investigate this by incorporating control conditions, in which participants do not receive specific instructions.

The results suggest that it is not always wise to rely on intuition. Even when relying on intuition may yield objectively superior judgments and decisions (Dijkstra, Van der Pligt, & Van Kleef, 2012; Dijkstra, Van der Pligt, et al., 2012; Halberstadt & Green, 2008; Halberstadt & Levine, 1999; Wilson & Schooler, 1991), it may sometimes be more rewarding to make a decision that feels right, rather than selecting the objectively best option and feeling unsatisfied about it because of a lack of decisional fit. Consider, for example, choices and decisions where subjective value is most important, such as when buying a painting or a thermos. It would be interesting to investigate in future research whether decisional fit also affects the quality of decision-making, for instance, whether it could lead to objectively superior judgments and decisions.

Cesario, Grant, and Higgins (2004) argued that the experience of fit also affects perceived message persuasiveness. They proposed that when a message recipient “feels right” because of regulatory fit, this subjective

¹Our sample size in this study was rather low. Cohen (1988) recommends conducting studies that have an 80% probability of detecting the effect when the effect is present (i.e., power=0.80). A post hoc power analysis revealed that Experiment 3 had an observed power of 0.52. Future studies should use larger samples so as to enhance statistical power.

experience transfers to the persuasion context and serves as information for relevant evaluations. The present findings suggest that when it comes to persuading people, it might be wise to take into account how they make decisions. Given the global superiority effect (Navon, 1977), messages might be more persuasive when they are conveyed in a way that stimulates relying on intuition and not thinking too much. Alternatively, when deliberation is necessary, one might induce a local processing style by focusing on details.

Processing style can be affected by a wide variety of variables. For instance, thinking about love versus sex (Förster, 2010; Förster *et al.*, 2009), having high versus low power (Smith & Trope, 2006), focusing on obtaining gains versus avoiding losses (Förster & Higgins, 2005), encountering novel versus familiar stimuli (Förster, Marguc, & Gillebaart, 2010), being confronted with physical or mental obstacles versus no obstacles (Marguc, Förster, & van Kleef, 2011), and encountering psychologically distant versus near stimuli (Trope & Liberman, 2010) all induce a global versus local processing style. Our research suggests that perceived value from decisional fit as well as message persuasiveness can be enhanced by adapting one's decision mode to characteristics of the situation that are known to induce global versus local processing.

According to Higgins *et al.* (2003), decisions fit when people feel right about the strategy they are using. This feeling of fit transfers to the experience of value involved in a subsequent object evaluation. De Vries *et al.* (2008) proposed confidence as a possible underlying mechanism. Fit could increase level of confidence in reactions that decision makers experience toward a decision outcome, regardless of whether those reactions happen to be positive or negative. Fitting decisions would not result in more positive but in more extreme subjective value of the chosen item (Idson, Liberman, & Higgins, 2000). However, we could not find support for this explanation. Experiment 3 did not reveal any effects on other subjective measures such as confidence and satisfaction. Confidence and satisfaction thus seem to be unrelated to the effects of fit.

Another possible underlying mechanism is fluency. When situational demands fit dispositional preference or current orientation, people can rely on their ongoing strategy, which feels natural and easy to them. Hence, the decision process is perceived as fluent. The experience of fluency is known to affect perceptions of truth and rightness (Parks & Toth, 2006; Reber & Schwarz, 1999). Consequently, choices or judgments made under decisional fit might be perceived as more "true" or "right." Support for this line of reasoning is provided by Lee and Aaker (2004). They showed that messages that were framed in a way that matched individuals' regulatory focus were processed more fluently, were identified more often in a subsequent identification task, and were more convincing than messages with a low fit. Fluency also helps to explain more extreme evaluations for initially negative stimuli as a function of fit effects (Idson *et al.*, 2000). In our experiments,

we used measurements that approximate experiences of fluency (i.e., perceived difficulty, Experiment 1; reported ease of decision-making, Experiment 2; reported satisfaction, confidence, and ease of the decision, Experiment 3). Effects on the measurements of perceived difficulty and reported ease of decision-making in Experiments 1 and 2 respectively, did not reach statistical significance ($p = .79$ in Experiment 1; $p = .46$ in Experiment 2). The pattern for reported ease of the decision in Experiment 3 was somewhat stronger and in the direction of our hypothesis, albeit still nonsignificant. Participants in the fit conditions reported that the decision was somewhat easier to make ($M = 5.80$, $SD = 1.08$) than participants in the non-fit conditions, $M = 5.37$, $SD = 1.62$, $F(1, 84) = 2.17$, $p = .15$, *ns*. Our measurement of reported ease of the decision might not be sufficiently sensitive to assess differences in experiences of fluency. Future research could shed more light on this possible mechanism by assessing fluency in a more direct way and testing whether fluency mediates fit effects on subjective value.

Our findings can be related to the elaboration-likelihood model (Petty & Cacioppo, 1986; refer for clarifications to Cacioppo & Petty, 1984). According to this model, situations that support people's motivation and ability to engage in issue-relevant thinking lead people to evaluate objects by scrutinizing and elaborating upon available arguments. Alternatively, in situations that reduce people's motivation or ability to think, people will either conserve their cognitive resources (e.g., ignore pieces of information) or expend cognitive resources on another task (e.g., daydreaming during exposure to the information). In such situations, people are likely to adopt a strategy of attempting to derive a "reasonable" attitude based on existing schemata and superficial analyses. Cacioppo and Petty's distinction between situations that support, or reduce, people's motivation and ability to think resembles our distinction between relying on intuition and deliberation.

Other similarities can be found in differences in information processing. Cacioppo and Petty (1984) differentiated between "central" and "peripheral" routes to persuasion. The central route encompasses the systematic view of persuasion; issue-relevant thinking tends to be the most direct determinant of behavior. In contrast, the peripheral route encompasses heuristic thinking (Chaiken, 1980). The specific stimulus, which an individual considers, may be the same; the critical difference is the manner in which an individual relates this incoming information to his or her prior knowledge. This distinction resembles our distinction between global and local processing style. Relating our findings to elaboration-likelihood model might suggest that situations that support people's motivation and ability to engage in issue-relevant information (vs. situations that reduce people's motivation or ability to think) and a local (vs. global) processing style result in decisional fit.

To conclude, the three experiments presented here provide evidence that congruency between processing style and judgment mode results in decisional fit. The

fact we showed fit effects of naturally occurring and experimentally induced processing style and of preferred as well as experimentally induced decision modes provides confidence in the robustness of the findings. People derive subjective value from decisional fit between global versus local processing and an intuitive versus deliberative decision mode.

Acknowledgements

We thank Wändi Bruine de Bruin for her help in designing experiments described in this article, and Astrid Homan for her help with the analyses.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Avnet, T., & Higgins, E. T. (2003). Locomotion, assessment, and regulatory fit: Value transfer from “how” to “what”. *Journal of Experimental Social Psychology, 39*, 525–530.
- Betsch, C. (2004). Präferenz für intuition und deliberation. Inventar zur erfassung von affekt- und kognitionsbasiertem entscheiden [Preference for intuition and deliberation (PID): An inventory for assessing affect- and cognition-based decision-making]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 25*, 179–197.
- Betsch, C., & Kunz, J. J. (2008). Individual strategy preferences and decisional fit. *Journal of Behavioral Decision Making, 21*, 532–555.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon’s mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*(1), 3–5.
- Cacioppo, J. T., & Petty, R. E. (1984). The elaboration likelihood model. *Advances in Consumer Research, 11*, 673–675.
- Cesario, J., Grant, H., & Higgins, E. T. (2004). Regulatory fit and persuasion: Transfer from “feeling right”. *Journal of Personality and Social Psychology, 86*, 388–404.
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39*, 752–766.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Damasio, A. R. (1994). *Descartes’ error: Emotion, reason and the human brain*. New York, NY: HarperCollins.
- De Vries, M., Holland, R. W., & Witteman, C. L. M. (2008). Fitting decisions: Mood and intuitive versus deliberative decision strategies. *Cognition and Emotion, 22*, 931–943.
- Derryberry, D., & Tucker, D. M. (1994). Motivating the focus of attention. In P. M. Niedenthal, & S. Kitayama (Eds.), *Heart’s eye: Emotional influences in perception and attention* (pp. 167–196). New York, NY: Academic Press.
- Dijkstra, K. A., Van der Pligt, J., & Van Kleef, G. A. (2012). Deliberation versus intuition: Decomposing the role of expertise in judgment and decision making. *Journal of Behavioral Decision Making, 26*, 285–294.
- Dijkstra, K. A., Van der Pligt, J., & Van Kleef, G. A. (2014). Effects of processing style on responsiveness to affective stimuli and processing fluency. *Cognition and Emotion, 28*, 959–970.
- Dijkstra, K. A., Van der Pligt, J., Van Kleef, G. A., & Kertsholt, J. H. (2012). Deliberation versus intuition: Global versus local processing in judgment and choice. *Journal of Experimental Social Psychology, 48*, 1156–1161.
- Evans, J. S. B. T. (2008). Dual-processing accounts of reasoning, decision, and social cognition. *Annual Review of Psychology, 59*, 255–278.
- Evans, J. S. B. T. (2010). Intuition and reasoning: A dual-process perspective. *Psychological Inquiry, 21*, 313–326.
- Förster, J. (2009). Relations between perceptual and conceptual scope: How global versus local processing fits a focus on similarity versus dissimilarity search. *Journal of Experimental Psychology: General, 138*, 88–111.
- Förster, J. (2010). How love and sex can influence recognition of faces and words: A processing model account. *European Journal of Social Psychology, 40*, 524–535. <http://dx.doi.org/10.1002/ejsp.656>
- Förster, J., & Dannenberg, L. (2010). GLOMO sys: A systems account of global versus local processing. *Psychological Inquiry, 21*, 175–197.
- Förster, J., Epstude, K., & Özelsel, A. (2009). Why love has wings and sex has not: How reminders of love and sex influence creative and analytic thinking. *Personality and Social Psychology Bulletin, 35*(11), 1479–1491.
- Förster, J., Friedman, R. S., Özelsel, A., & Denzler, M. (2006). Enactment of approach and avoidance behavior influences the scope of perceptual and conceptual attention. *Journal of Experimental Social Psychology, 42*, 133–146.
- Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science, 16*, 631–636.
- Förster, J., Marguc, J., & Gillebaart, M. (2010). Novelty categorization theory. *Social and Personality Psychology Compass, 4*, 736–755.
- Friedman, R. S., Fishbach, A., Förster, J., & Werth, L. (2003). Attentional priming effects on creativity. *Creativity Research Journal, 15*, 277–286.
- Friedman, R. S., & Förster, J. (2000). The effects of approach and avoidance motor actions on the elements of creative insight. *Journal of Personality and Social Psychology, 79*, 477–492.
- Gasper, K. (2004). Do you see what I see? Affect and visual information processing. *Cognition and Emotion, 18*, 405–421.
- Gasper, K., & Clore, G. (2002). Attending to the big picture: Mood and global versus local processing of visual information. *Psychological Science, 13*, 34–40.
- Halberstadt, J. B., & Green, J. (2008). Carryover effects of analytic thought on preference quality. *Journal of Experimental Social Psychology, 44*, 1199–1203.
- Halberstadt, J. B., & Levine, G. M. (1999). Effects of reasons analysis on the accuracy of predicting basketball games. *Journal of Applied Social Psychology, 29*, 517–530.
- Higgins, E. T. (2000). Social cognition: Learning about what matters in the social world. *European Journal of Social Psychology, 30*, 3–39.
- Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality and Social Psychology, 75*, 617–638.
- Hogarth, R. M. (2001). *Educating intuition*. Chicago, IL: The University of Chicago Press.

- Hogarth, R. M. (2010). Intuition: A challenge for psychological research on decision making. *Psychological Inquiry*, *21*, 338–353.
- Horton, J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: Conducting experiments in a real labor market. *Experimental Economics*, *14*, 399–425.
- Idson, L. C., Liberman, N., & Higgins, E. T. (2000). Distinguishing gains from non-losses and losses from non-gains: A regulatory focus perspective on hedonic intensity. *Journal of Experimental Social Psychology*, *36*, 252–274.
- Kimchi, R., & Palmer, S. E. (1982). Form and texture in hierarchically constructed patterns. *Journal of Experimental Psychology: Human Perception and Performance*, *8*, 521–535.
- Klein, G. A. (1993). A recognition-primed decision (RPD) model of rapid decision making. In G. A. Klein, J. Orasanu, R. Calderwood, & C. E. Zsombok (Eds.), *Decision making in action: Models and methods* (pp. 138–147). Norwood, NJ: Ablex.
- Le Doux, J. E. (1996). *The emotional brain*. New York, NY: Simon & Schuster.
- Lee, A. Y., & Aaker, J. L. (2004). Bringing the frame into focus: The influence of regulatory fit on processing fluency and persuasion. *Journal of Personality and Social Psychology*, *86*, 205–218.
- Marguc, J., Förster, J., & van Kleef, G. A. (2011). Stepping back to see the big picture: When obstacles elicit global processing. *Journal of Personality and Social Psychology*, *101*, 883–901.
- Markman, K. D., Lindberg, M. J., Kray, L. J., & Galinsky, A. D. (2007). Implications of counterfactual structure for creative generation and analytical problem solving. *Personality and Social Psychology Bulletin*, *33*(3), 312–324.
- Navon, D. (1977). Forest before trees: The precedence of global features in visual perception. *Cognitive Psychology*, *9*, 353–383.
- Parks, C. M., & Toth, J. P. (2006). Fluency, familiarity, aging, and the illusion of truth. *Aging, Neuropsychology, and Cognition*, *13*, 225–253.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 123–205). New York, NY: Academic Press.
- Reber, R., & Schwarz, N. (1999). Effects of perceptual fluency on judgments of truth. *Consciousness and Cognition*, *8*, 338–342.
- Sadler-Smith, E. (2008). *Inside intuition*. Abingdon, UK: Routledge.
- Schooler, J. W. (2002). Verbalization produces a transfer inappropriate processing shift. *Applied Cognitive Psychology*, *16*, 989–997.
- Smith, P. K., & Trope, Y. (2006). You focus on the forest when you're in charge of the trees: Power priming and abstract information processing. *Journal of Personality and Social Psychology*, *90*, 578–596.
- Tordesillas, R. S., & Chaiken, S. (1999). Thinking too much of too little? The effects of introspection on the decision-making process. *Personality and Social Psychology Bulletin*, *25*(5), 623–629.
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, *117*, 440–463.
- Wilson, T. D., Hodges, S. D., & LaFleur, S. J. (1995). Effects of introspecting about reasons: Inferring attitudes from accessible thoughts. *Journal of Personality and Social Psychology*, *69*, 16–28.
- Wilson, T. D., & Schooler, J. W. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, *60*, 181–192.