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Contrast and Assimilation Effects of Processing Fluency

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When perceptually difficult-to-read information (e.g., a magazine article in difficult font) precedes easy-to-read information about a product, the subjective ease of processing experienced in reading the product's information increases. This change in subjective ease leads to more favorable evaluations of it. Three experiments identify whether this contrast effect on judgment of the second product occurs because evaluations of the content described by the difficult-to-read material are used as a basis for evaluation. Or, if the effect is perceptual in nature and participants are unaware of the influence that fluency of previously encountered information has on subsequent evaluations.

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SYMPOSIUM SUMMARY

When the Going gets Tough: How Metacognitive Difficulty Improves Evaluation

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SESSION OVERVIEW

Ample research establishes that feelings serve as information about preferences. An important source of feelings is the subjective characteristics of a stimulus itself (Schwarz 2004). Research argues that subjective feelings of ease of processing the stimulus are beneficial and increase liking towards the stimulus (Berlyne, 1966; Bornstien, 1989; Zajonc, 1968). This is because people implicitly associate ease with familiarity and personal relevance. Consequently, subjectively easy (vs. difficult) to process stimuli are also evaluated as more familiar and self-relevant and are preferred. However, is it possible that under certain situations, feelings of metacognitive difficulty might increase evaluation? For example, looking to become a better person, might you decide to donate more to a charity simply because processing difficulty made it seem more instrumental, because usually you invest effort in what is instrumental and you unknowingly reversed this correlation in your mind? Or celebrating a special occasion, might feelings of difficulty in coming up with the name of the chosen restaurant make it seem more exclusive? After struggling through a students' hard to read assignment that employs small font might you find the next one so much more lucid but actually only its font is larger? And to what extent do these effects emerge because of feelings of familiarity or because of the misattribution of affect? For example, if after struggling to pronounce the name of a food additive you come to think it is more dangerous, is that because it feels unfamiliar or because it feels negative? These are some questions we investigate in this session.

In contrast to existing research arguing for a positive effect of ease of processing on evaluation, in this session we discuss three situations—when the target is a means to fulfill an accessible goal (paper 1), when the target is a special occasion product (paper 2), and when the target follows a difficult to process prime (paper 3)—under which subjective difficulty of processing increases liking of the target object. Finally (paper 4), we discuss how metacognitive difficulty might increase perception of effort needed to accomplish a task at hand, thus tying the session to the initial proposition (paper 1) that effort perception can sometimes be a good thing.

Paper 1 by Kim and Labroo argues that when a target product is a means to attain an accessible goal, people employ an “effort heuristic” to judge its instrumentality as a means. This is because people investing effort to pursue goals use those means that are most instrumental in accomplishing their goals. When assessing the value of the target in fulfilling an accessible goal they also reverse this correlation inferring that effort signals instrumentality. Thus, subjective difficulty increases desirability of an object that is a means to fulfill an accessible goal.

Paper 2 by Pocheptsova and Dhar adds to our understanding of the impact of metacognitive difficulty on evaluation of products in a second way. It suggests that when scarcity or infrequency is a good thing as in the case of special occasion products, a “scarcity heuristic” kicks in and subjective feelings of difficulty make products appear more rewarding by increasing perceptions of scarcity.

Paper 3 by Shen, Jiang, and Adaval next establishes a positive impact of metacognitive difficulty on subsequent evaluations. The authors suggest that subjective feelings of difficulty that arise from perceptual processing create an illusion of increased ease towards

judgments that follow. Thus judgments about a target are not only affected by processing fluency of the target but also affected by processing fluency of the material preceding the target information.

Finally, Song and Schwarz discuss the situations where difficulty signals danger and where it signals required effort to pursue ones' goals. They demonstrate that when people make judgments about risk-related targets, low processing fluency signals a lack of safety increasing expected risk associated with the target. Additionally, in a situation where people make judgments about effort-related activities, low fluency signals a need to invest higher effort. They discuss the mechanism underlying these phenomena in terms of affect and familiarity.

All four papers are closely related, well grounded in theory, advancing and consolidating research on metacognition and consumer preference formation. Each paper comprises of several experiments, and presents novel findings in an area of growing interest to consumer researchers.

EXTENDED ABSTRACTS

“The ‘Instrumentality’ Heuristic: When Metacognitive Difficulty Signals Means Instrumentality”

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Aparna A. Labroo, University of Chicago

Do people crave for things just because they seem subjectively difficult to get? Take a look at “Mysterious Flirting 101” on the Web, which authoritatively proclaims that “everyone’s heard that you should play hard to get in order to attract the person you like.” Evidence from an experiment also confirms that female rats that play hard to get are more likely to keep their male mates interested (Erskine, 2005). Even children appear to want things that simply feel difficult to get. Try holding a toy out to a young child just beyond his or her grasp, and watch the child bounce all around you. Then, hand the toy over and watch how quickly the child loses all interest in it. In the current research, we consider the following question: does a feeling of subjective difficulty (vs. ease) sometimes increase the allure of the object under consideration, and why?

Contrary to the commonplace observations just discussed, ample evidence suggests that feelings of subjective ease rather than difficulty increase preferences of objects (Berlyne, 1966; Bornstien, 1989; Schwarz, 2004; Zajonc, 1968). For example, abstract images, line drawings, and pictures are evaluated more favorably when their perceptual characteristics are subjectively easy to process (vs. blurry) or when they have been presented on a previous occasion. Because personally relevant and familiar objects come to mind easily, people implicitly associate ease with familiarity and personal relevance (Schwarz, 2004). Consequently, subjectively easy (vs. difficult) to process objects are also evaluated as more familiar, self-relevant, and desirable.

In the current research, however, we propose that when people have a highly accessible goal before evaluating a target object, subjective difficulty (vs. ease) of processing will improve its evaluation. This is because people with an accessible goal who evaluate the target object need to assess its instrumentality in fulfilling their goal. We propose that at this time an “effort heuristic” might help ascertain how instrumental the target being consid-

ered is toward fulfilling their accessible goal. In particular, we propose that because effort during goal pursuit is usually expended in whichever means is most instrumental, people implicitly associate effort with instrumentality of a means. They might reverse this correlation in their minds to also perceive effort as a signal of instrumentality of the target means in fulfilling the accessible goal. Thus, subjective difficulty (vs. ease) might improve evaluation of a target object that is a means towards fulfilling an accessible goal because, based on the belief that people generally put in effort in whichever means is most instrumental, effort signals value. When no clear goals are accessible or when the target object is not a means to fulfill an accessible goal, ease (vs. difficulty) of processing will improve evaluation, replicating the results found in previous research. We test this across three experiments.

In all three experiments, we manipulate difficulty of processing using either blurry or clear font, in line with a methodology used in previous experiments (Novemsky et al. 2007). Experiment 1 examines whether a highly accessible mood goal leads participants to prefer LeVour chocolate when information regarding the chocolate is subjectively difficult (vs. easy) to process. We find that participants primed with a mood goal evaluated LeVour chocolate more favorably and were willing-to-pay more for the collection when the ad was difficult (vs. easy) to process, but participants primed with a conflicting self-control goal preferred LeVour and were willing-to-pay more for the collection when it was easy (vs. difficult) to process, as did neutral-goal participants. In order to ensure that our results apply beyond hedonic products and to ensure that metacognitive effort is more than a justification for choosing hedonic products (Kivetz & Simonson, 2002), experiment 2 employed donation amount as the dependent variable. Charity materials, which pretested as unpleasant and negative, ensured that neither they nor the donation to the charity provided immediate pleasure. As we expected, participants primed with the goal to be a better person donated more money when they were given blurry (vs. clear) materials. In contrast, participants in the neutral-goal condition donated more money when the materials were clear (vs. blurry), replicating research on ease of processing. Finally, Experiment 3 used a chronic measure of goal to replicate this effect. It also established that instrumentality of the target object as a means to fulfilling the accessible goal mediates the effect, and the effect is attenuated when people are unable to misattribute effort to effectiveness of the target in fulfilling the accessible goal. The effects were not because of perceived scarcity of the target and people liking what is scarce. As a set these studies thus demonstrated that the effect of metacognitive ease or difficulty of processing a target object on evaluation of the target object will depend on whether metacognitive difficulty is information to the motivational system regarding effectiveness of the target object toward fulfilling an accessible goal.

“When Products Feel Special: Low Fluency leads to Enhanced Desirability”

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Existing research posits that feelings of high fluency which signal familiarity with an object improve its evaluation (e.g. Schwarz 2004, Winkielman et. al 2003). In a departure from those findings, we demonstrate that *low* fluency can sometimes enhance evaluation of a product. We argue that in the context of special occasion high-end goods, higher fluency which indicates abundance of the product makes the products feel less special, and this translates into lower value. Thus, low fluency of processing of special-occasion

products will make them feel more special and positively affect judgments.

Consistent with our proposition, we find, across four studies, that consumers prefer special-occasion products more when processing fluency is low. In Study 1 we show that consumers are willing to pay more for gourmet cheese that a specialty online retailer is introducing when its description is printed in a hard-to-read vs. easy-to-read font. However, the effect of font on evaluation reverses for regular cheese, which is consistent with the existing literature. Study 2 replicates these effects in the context of a special occasion versus everyday restaurant and using a different manipulation of fluency: ease of thought generation. Study 3 provides evidence of the underlying process. Study 3 manipulates the product context by using a word jumble task to prime special vs. everyday concepts and thus making different lay theories accessible, while keeping the product constant, to show the role of lay theories in the interpretation of fluency experience. We find that ease (vs. difficulty) of processing increases evaluation of the product when participants are previously primed with “everyday,” but difficulty (vs. ease) of processing increases liking of the product when participants are primed with “special.” Finally, Study 4 directly measures people’s lay beliefs to see if individual differences in beliefs account for the effect of fluency on preference. We find that consumers prefer chocolate truffles more when the information about them is presented in a difficult font. Interestingly, this effect of difficulty of processing holds only for people who have a belief that chocolate is for special occasions. We also show that when participants correctly attribute the difficulty of processing to the font, they correct (reduce) their evaluation.

Our findings contribute to the growing literature on fluency effects on product evaluations. We posit that the effect of fluency on judgments is context dependent and show that contrary to previous findings low processing fluency can lead to an increase in liking. Merely framing a product as special occasion or simply priming people with the construct of special occasion prior to the evaluation task can reverse the effects that have previously been observed in the ease of processing literature. Understanding the role of fluency in consumer decisions provides the marketers with the set of new tools to lure customers to buy their products. Current paper highlights the importance of consumption domains and consumers lay theories in the interpretation of fluency experiences and thus suggest more nuanced marketing tactics for creating attractive product offerings and improving sales.

“Contrast and Assimilation Effects of Processing Fluency”

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Consumers often encounter information sequentially when browsing through magazines. For example, they might encounter articles that are perceptually easy or difficult-to-read because of the font used. These articles might be followed by ads for products. How does the subjective experience of reading an article that is easy or difficult-to-read influence readers’ reactions to a product ad that is encountered subsequently?

Some streams of research suggest that the product that is encountered subsequently will be evaluated more unfavorably if it is preceded by difficult-to-read information than if it is preceded by easy-to-read information (an assimilation effect). For example, work by Winkielman and Cacioppo (2001) suggests that positive affect is elicited if there is high processing fluency and negative affect if there is low processing fluency. If this is the case, then

several theories would predict that the affect elicited by the first task might transfer to the second task, leading to assimilation. Previous research by Fiske (1982) and Sujar (1985) also suggests assimilation effects. According to this work, feelings about the first stimulus could be transferred to the second stimulus if these two stimuli are perceived as belonging to the same category. However, other streams of research suggest that the second product will be evaluated more favorably if the processing of previously encountered material is difficult than if it is easy (a contrast effect). This could occur through three mechanisms. The first, a perceptual process, suggests that people adapt to the level of past stimuli and judge new stimuli in relation to an adaptation level (Helson 1964). Thus, difficult reading experiences could lead people to adapt to that low level of processing fluency and subsequently encountered ads could be contrasted with this adaptation level and might seem easier to process leading to more favorable evaluations. The second mechanism that predicts such effects (Adaval and Monroe 2002) suggests that participants might make a deliberative judgment of the ease or difficulty of processing information about the first product that is encountered (e.g., “This is so hard to read.”) and then use this as a standard for judging the processing difficulty of information about the second product (“This is much easier”). Finally, contrast effects could occur because people might form unfavorable evaluations of the object described by the difficult to read information that is encountered first and use these evaluations as a basis for judging the second product.

Experiment 1 demonstrates how perceptual fluency elicited in one situation can lead to contrast effects in a second situation and whether this effect occurs without participants’ awareness (as we predict) or is the result of deliberative cognitive activity. Participants were presented with a movie review (in either a difficult- or easy-to-read font) on a webpage and were told to either form an impression of the movie review or the webpage on which it was presented. Next, they were asked to evaluate a product described in an ad that used an easy-to-read font.

We assumed that participants would experience low fluency when they read the review presented in difficult font (Novemsky et al. 2007). If an easy-to-read ad is encountered later, the experienced change in fluency might be attributed to the product described in the ad and might lead participants to evaluate it more favorably than they would if the ad was preceded by an easy-to-read movie review (a contrast effect). If the above effect occurs without awareness, it should be evident only when participants focus on forming an impression of the movie review because other participants (asked to form an impression of the webpage) are more likely to evaluate aspects of its layout (such as the font, white space etc.). This process should increase sensitivity to the fonts used in the ad. The increased awareness and deliberative comparison of these fonts with those seen in the webpage earlier might reduce the effect. Results were consistent with these assumptions.

In experiment 2, participants were presented with the product ad after they had read a movie review in an easy- or difficult-to-read font. However, after they evaluated the product, they also evaluated the font of the ad and movie review. Then, they were presented with a second movie review (that was in a font similar to the first one) and a second product ad. We assumed that evaluation of the fonts in the preceding task would draw participants’ attention to fonts and should lead them to attribute processing ease or difficulty to the fonts used. Consequently, they should stop using these subjective feelings to evaluate the product in the second ad. Results were consistent with this assumption and showed that the proposed contrast effect was obtained for the product in the first ad, but disappeared for the second product ad.

Experiment 3 investigated the conditions in which assimilation effects might occur by manipulating both the fluency of the first stimuli and the relatedness between the first and second stimuli. Participants were asked to read a movie review that was presented in either difficult or easy-to-read fonts. After they had read the review, they were exposed to an ad for popcorn presented in easy-to-read font. However, in one condition the relationship between the movie and the popcorn ad was made explicit. In the other condition, this relationship was not obvious. After, reading the ad, participants were asked to evaluate the popcorn. The results of experiment 3 showed that assimilation effects occur when the two experiences are categorized together. Thus, when participants read that they could enjoy popcorn while watching the movie (high related condition), they categorized the popcorn and the movie as part of the same experience. Consequently, the difficulty of processing the movie review as a result of the fonts was transferred to the popcorn leading to an assimilation effect. In contrast, when the relatedness between the popcorn and the movie was not emphasized, the evaluation of the popcorn increased (a contrast effect) because of the processes demonstrated in previous experiments.

“Safe and Easy or Risky and Burdensome? Fluency Effects on Risk Perception and Effort Prediction”

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Six experiments extend the exploration of processing fluency to risk perception and effort prediction. Familiar stimuli are often perceived as less risky than unfamiliar ones (Slovic, 1987; Zajonc, 1980). This raises the possibility that variables that affect the perceived familiarity of a product will also affect perceptions of the risks associated with the product. One such variable is the fluency with which product information can be processed. In cognitive research, the fluency-familiarity link is reflected in erroneous recognition judgments (e.g., Whittlesea, Jacoby, & Girard, 1990) and strong feelings of knowing (e.g., Koriat & Levy-Sadot, 2001) for perceptually easy-to-process stimuli. Previous research also demonstrated, however, that processing fluency is hedonically marked and that high fluency elicits a positive affective response (e.g., Winkielman & Cacioppo, 2001). Affect associated with fluency also may be involved in intuitive judgments of risk. In light of this fluency-safety link, in the first three studies, we propose and test that difficult-to-process stimuli are perceived as more hazardous than easy-to-process stimuli, using ease of pronunciation as a manipulation of fluency.

Study 1 examined people’s hazard ratings of ostensible food additives that were described with easy-to-pronounce or difficult-to-pronounce names. We predicted and found that people perceived hard-to-pronounce substances as more harmful than easy-to-pronounce substances. Study 2 replicated this finding and examined the mediating roles of feeling of familiarity and affect. As a large body of research into the role of affect in evaluative judgment demonstrates, positive affect elicits more favorable evaluations than negative affect (see Schwarz & Clore, 2007, for a review), this raises the possibility that low risk perception for fluent objects in Study 1 and 2 may be based on high preference driven by positive affect. Study 3 addressed this possibility by examining the influence of processing fluency on judgments of risk in a risk-approach situation (the excitement and adventurousness of amusement park rides) as well as in a risk-avoidance situation (the sickening effects of amusement park rides). If the effect of fluency on judgments of risk is a mere preference based on affect, low processing fluency should result in negative evaluations of amusement park rides, which should be perceived as less exciting as well as more sicken-

ing. If risk judgment is distinct from preference associated with fluency, however, low fluency may increase risk judgments regardless of whether risks are negative (sickening effects of rides) or positive (adventurousness of rides). Study 3 supported the latter prediction: amusement park rides with difficult-to-pronounce names were rated as more exciting as well as more sickening than rides with easy-to-pronounce names. These results further indicate the distinctive effects of fluency on risk perception.

Based on the logic that people tend to misread their current feelings as about the target of judgment at hand (Schwarz, Song, & Xu, in press), the next three studies show that people mistake the fluency of reading instructions as bearing on the ease of completing the described task. In Study 4, participants read exercise instructions either in easy-to-read fonts or in difficult-to-read fonts and predicted longer completion time and low fluency of movements in an exercise when instructions were printed in difficult-to-read fonts than in easy-to-read fonts. In addition, participants were more willing to incorporate the exercise in their daily routine when they read the instructions in easy-to-read fonts than in difficult-to-read fonts. In Study 5, participants read a recipe for a Japanese roll in easy-to-read fonts or in difficult-to-read fonts. They predicted that preparing the roll would take more time, and reported less willingness to try the recipe, when the fonts were difficult rather than easy to read. Study 6 further showed that participants perceived the recipe as requiring more skill from the cook when it was presented in a difficult to read font.

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