

Easier is not always better: The moderating role of processing type on preference fluency[☆]

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Abstract

Prior research has shown that preference fluency (i.e., the subjective feeling that forming a preference is easy or difficult) systematically influences consumer choices. When deciding on an option feels difficult, or requires effort, consumers are likely to select a different option or defer the decision. We find that under conditions of narrative processing, difficulty in processing can actually improve preferences because more effort leads to more transportation, or immersion, into the story, thus enhancing brand evaluations. Three experiments demonstrate that the effect of preference fluency reverses when consumers think about a brand as part of a story.

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Nothing ever comes to one, that is worth having, except as a result of hard work.—Booker T. Washington

Recently, important contributions have been made in documenting how meta-cognitive experiences influence consumer behavior (e.g., Labroo, & Kim, 2009; Lee, 2004; Novemsky et al., 2007; Schwarz, 2004). For example, Novemsky et al. (2007) demonstrate that preference fluency (i.e., the subjective belief that forming a preference for a specific option is easy or difficult) often systematically influences consumer choices. Their research establishes that when deciding on an option feels more difficult, or requires more effort, consumers are more likely to select a different option or defer the decision. This makes sense when consumers are trying to make decisions based on available product attributes using analytical processing: If an alternative is accompanied by meta-cognitive feelings of ease or fluency, consumers draw on these feelings and use them as input when

forming preferences for the alternatives (Labroo, & Kim, 2009; Novemsky et al., 2007). This theory of preference fluency argues that feelings of difficulty lead to a sense that the alternative may not be the right one, and thus consumers are likely to defer choice when it is accompanied by processing disfluency (for important exceptions, see Labroo, & Kim, 2009; Pocheptsova, Labroo, & Dhar, forthcoming). However, what happens when consumers are not systematically evaluating a brand on its attributes, but rather are thinking about the brand as part of a story? Does considering an ad that is more difficult to process still lead to lower preferences?

We argue that when consumers form preferences using narrative processing, feelings of difficulty when processing the ad can improve their preferences for the advertised brand. Specifically, we argue that unlike analytical processing, in which feelings of difficulty are attributed to the decision task, under conditions of narrative processing, these feelings of difficulty will lead to more positive evaluations of the advertised brand through a deeper immersion into the narrative—a process known as narrative transportation (Gerrig, 1994; Green, & Brock, 2000). Under narrative processing, external cues such as meta-cognitive experiences are unlikely to become a direct decision input; rather, meta-cognitive feelings of difficulty may be attributed to the narrative being more complex, which in turn will motivate the

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reader to employ more resources in an effort to comprehend the narrative. Prior research has demonstrated that investment of cognitive and imaginative resources increases narrative transportation (e.g., Green, & Brock, 2002; Green et al., 2008). Thus, we assert that consumers engaged in narrative processing of an ad will be more likely to be transported into the ad's story when meta-cognitive experiences indicate that more effort is required. As a result, we predict that the effect of preference fluency will reverse when consumers think about an alternative (i.e., a brand) as part of a story; that is, consumers will evaluate the brand more favorably when processing feels difficult.

We organized the paper as follows: First, we provide an overview of analytical and narrative processing and outline how persuasion is achieved through each mode of processing. Second, we present our theoretical model and show how processing difficulty interacts with mode of processing. We test this framework with three experiments.

Analytical versus narrative processing

Analytical processing

Scholars in psychology (e.g., Adler, 2008; Bruner, 1986; Green, & Brock, 2000) and consumer research (e.g., Escalas, 2007) propose that there are two distinct ways of thinking, analytically and narratively, and that both influence persuasion through different mechanisms. On the one hand, analytical or paradigmatic thought implies a formal, analytical system of description and explanation that relies on established procedures aimed at ensuring verifiable conclusions. The focus in analytical thought is on comparing logically generated alternatives in a critical and systematic way. In general, application of analytical thought leads to "good theory, tight analysis, logical proof, sound argument, and empirical discovery guided by the reasoned hypothesis" (Bruner, 1986, p. 13) or, at the very least, employs decision-making heuristics when effort is low. When faced with lists of attributes or attribute tradeoffs in choice settings, consumers will naturally tend to default to analytical thought processes (Adaval, & Wyer, 1998).

Analytical thought persuades through dual cognitive response processes (e.g., elaboration likelihood model; Petty et al., 1983). These traditional elaboration-based persuasion models assert that facilitating elaboration of incoming information enhances message recall and brand attitudes when the arguments are strong but not when they are weak. Importantly, decisions made on the basis of analytical thought are the result of a divergent process in which the consumer may access his or her own prior opinions, prior knowledge, and other thoughts and experiences, in addition to the information provided in an advertisement. Thus, meta-cognitive experiences (e.g., "it feels difficult") during processing may be used as input into the decision.

Narrative processing

On the other hand, under conditions of narrative thought, people process incoming information as if they were creating a story. In doing so, they impose a narrative structure on

occurrences, which includes temporal sequencing that enables causal attributions to be made. Narrative thought pertains to the meaning ascribed to experiences through stories. Consumers often create and use stories to make decisions and to understand the meaning of their experiences with products and brands. In that sense, narrative thought represents the full "user experience" in which the reader constructs meaning through a process of interpretation, attribution, imagery, and emotion (Bruner, 1990), thus creating an interaction between the narrative and the reader's own mental inventories from which new meaning arises (Strange, 2002).

Narrative processing has been shown to affect persuasion through transportation, defined as "immersion into a text" (Green, & Brock, 2000, p. 702; see also Gerrig, 1994). "Elaboration leads to attitude change via logical consideration and evaluation of arguments," while transportation leads to persuasion through reduced negative cognitive responding, realism of experience, and strong affective responses (Green, & Brock, 2000, p. 702). When a person thinks in the form of a story, he or she may be "transported" by the narrative, thus enhancing persuasion without increasing analytical evaluation of the message arguments or attribute tradeoffs (Escalas, 2007). Narrative transportation affects brand evaluation and persuasion through several mechanisms. First, strong feelings associated with the story may be transferred to the brand (Escalas, 2007). Second, the scenes presented in the text (or visually in the case of a movie or advertisement) evoke imagery that links the experience of entering the narrative world to the meaning of the story, building beliefs about the brand presented in the story (Escalas, 2004; Green, & Brock, 2002). Furthermore, transportation makes a narrative experience feel more real, and because real experiences can strongly influence attitudes (Fazio, & Zanna, 1981; Green, & Brock, 2000), narrative processing can also have a strong influence on attitudes.

Of particular relevance to this research is the role of effort in narrative transportation. Importantly, transportation is not a lack of thought or effort; rather, it is a process distinct from analytical thought. Whereas increased effort during analytical processing leads to elaboration and, thus, more critical evaluation of the choice options, a willingness to exert mental effort during narrative processing leads to increased transportation and, subsequently, a stronger emotional and experiential response to the narrative (Green, 2009; Green et al., 2004a). Furthermore, Green, and Brock (2000) do not find that increased "transportation" has the same negative effects on persuasion as increased elaboration. More transportation leads to more persuasion, while too much analytical elaboration can harm persuasion (cf. resource matching, Anand, & Sternthal, 1989).

Processing difficulty and transportation

The distinction between analytical and narrative processing is relevant for preference fluency because we expect the two modes of processing to be influenced differently depending on the perceived difficulty at encoding. For analytical processing, a divergent process occurs in which the goal is to evaluate the attributes and arrive at a judgment based on both the information

made available and the information the person him- or herself brings to bear. Here, processing difficulty leads to meta-cognitive feelings of difficulty that the person uses as input into his or her overall evaluation of the product or brand. When pursuing the processing goal of evaluation and judgment feels difficult, people interpret this to mean that the solution is not easy. They then make the attribution, consistent with their real-world experiences, that a difficult solution is perhaps the wrong decision. Therefore, when marketing communications are more difficult to process, meta-cognitive experiences that work against the alternative are evoked, reducing the likelihood of choice (e.g., Novemsky et al., 2007). Thus, we propose the following hypothesis, which replicates Novemsky et al., 2007:

H1. When ads are presented in a difficult-to-encode format, ads encouraging *analytical processing* will decrease evaluation of the advertised product compared with those presented in an easy-to-encode format.

In contrast, narrative processing is a convergent process in which “a person’s mental systems and capacities become focused on the events occurring in the narrative” (Green, & Brock, 2002, p. 324) and the immediate goal is to comprehend the narrative (and become immersed in it; Green et al., 2008). Thus, we do not expect meta-cognitive experiences to influence evaluation in the same way. Instead, we predict that processing difficulty for narratives will be attributed to story complexity. Because the goal when reading a story is to comprehend the story, readers will try to match higher levels of perceived story complexity with the employment of more cognitive and imaginative resources (Green, 2009; Green et al., 2008). This increased allocation of resources causes the consumer to become transported by the story itself (Green et al., 2004b), thus enhancing persuasion through the transportation mechanisms.

Our assertion is consistent with prior research on narrative transportation, which finds that a complex narrative whose difficulty does not exceed the capabilities of the reader leads to higher levels of transportation, in part through the reader’s deployment of more cognitive and imaginative resources (Green, 2009; see also Polichak, & Gerrig, 2002, where they refer to investment of resources as participatory responses). Thus, we predict that meta-cognitive feelings of difficulty will lead the reader to infer that the story (or, in our case, the advertisement) is complex, and as a result, he or she will deploy more resources, which, all else being equal, will result in increased transportation and enhanced persuasion. To summarize, we predict that processing difficulty under narrative processing reverses the preference fluency effect found under conditions of analytical processing, because meta-cognitive feelings of difficulty lead to higher allocation of resources so that the reader can comprehend the narrative; in turn, this results in enhanced transportation and persuasion. Thus, we propose the following:

H2. When ads are presented in a difficult-to-encode format, ads encouraging *narrative processing* will increase evaluation of the advertised product compared with those presented in an easy-to-encode format.

Finally, we assert that the reason brand evaluations are enhanced under conditions of processing difficulty for narratives is that consumers are more likely to be transported into the story when meta-cognitive experiences indicate that the story is more complex (i.e., processing the story feels difficult) and thus requires the allocation of more processing resources. Again, as people devote more resources during narrative processing, they are more likely to be transported by the narrative. Increased perceived difficulty will lead to more transportation, which in turn will enhance brand evaluations. Thus:

H3. When advertisements encourage narrative processing, narrative transportation mediates the effect of processing difficulty on product evaluations.

Next, we present our empirical tests of the three hypotheses. In the following section, we begin with a pre-study to validate the product evaluation measures used in Experiments 1–3. In **Experiment 1**, we test **H2** by relying on storyboard ads previously demonstrated to encourage narrative processing because the scenes present a chronological sequence of events that consumers naturally process as a story (Escalas, 2004; Schank, & Abelson, 1995). In **Experiment 1**, we also test **H1** in two ways. First, half the participants see ads in a print format designed to encourage analytical processing. This condition replicates prior work on preference fluency (e.g., Novemsky et al., 2007). Second, we introduce a condition in which participants are asked to be skeptical when reviewing the storyboard advertisements. Prior research (e.g., Escalas, 2007) has demonstrated that when skepticism is induced, participants rely on analytical processing even for stimuli that encourage narrative processing. In **Experiment 2**, we demonstrate that transportation mediates the effects in the narrative conditions (**H3**). Finally, in **Experiment 3**, we replicate our findings in a new product category to generalize our results. We also manipulate processing difficulty with both the text and the storyboard images to improve the generalizability of our findings and to eliminate potential alternative explanations.

Pre-study

Although the preference fluency effect makes specific predictions about choice deferral when preference formation feels difficult, we expect that processing difficulty under narrative processing will directly influence product or brand evaluation as well. Thus, we first ran a pre-test to ensure that preference fluency effects achieved through analytical processing can serve as a reasonable comparison for the narrative processing effects investigated in this manuscript. As described above, analytical processing persuades through a divergent process where a person accesses available information, existing schemas, as well as their experiences as they work to reach verifiable conclusions. If concurrent (meta-cognitive) experiences are used as input into the decision then, for products

where the consumer's naïve theory would signal that finding the right product among comparable options should "feel right" or at least not feel difficult (Pocheptsova et al., forthcoming), meta-cognitive feelings of difficulty may reduce the decision maker's confidence that a choice option is indeed a good option. If so, we expect that this reduced confidence will cause the decision maker to infer that the product is less desirable. Thus, although uncertainty arising from a choice that feels unexpectedly difficult should be especially evident in consumers' decisions to avoid choosing an option from a choice set (Novemsky et al., 2007), we expect that if such meta-cognitive experiences are used as decision input in analytical processing, the choice deferral effects observed by Novemsky et al. should replicate using single product evaluation measures as well. This is consistent with other work exploring boundary conditions to the preference fluency effect where single product evaluations are also used (Pocheptsova et al., forthcoming; Labroo, & Kim, 2009).

Methodology

Eighty-six university students and staff participated in this study as part of a 30-minute study session for which they were paid six dollars. Following an unrelated 15-minute computer study, participants received a study booklet containing instructions and stimuli for the study. Using stimuli from Novemsky et al. (2007), we told participants that they would review two ads for microwave ovens, after which they would choose one of the microwave ovens or go to another store. Participants then saw two ads for microwave ovens (we adopted the format from Novemsky et al., 2007) in either the difficult-to-read or the easy-to-read font. After reviewing the ads, participants rated the difficulty of the font and made a choice (Microwave 1, 2, or go to another store). They then evaluated the product in the second of the two ads ("Please indicate your overall opinion of the brand/product," 1=very unfavorable, 9=very favorable; "Please indicate how good or bad you thought the brand/product was," 1=very bad, 9=very good; "Please indicate how likely it is that you would try this brand/product," 1=definitely would not try it, 9=definitely would try it; and "Would you use this product more or less in response to this ad?" 1=I would use the product much less, 9=I would use the product much more).

Results

Confirming the results of Novemsky et al. (2007), participants were more likely to defer product choice when the advertising font was difficult to read ($M_{diff}=68.18\%$ and $M_{easy}=30.77\%$; $\chi^2_1=10.99$, $p<.01$). Important for the current research, for each of the product evaluation measures, we found the predicted lower evaluation when product features were presented in the difficult-to-read font (overall opinion: $F(1, 84)=9.78$, $p<.01$, $M_{easy}=6.51$, $M_{diff}=5.00$; good/bad: $F(1, 84)=12.57$, $p<.01$, $M_{easy}=6.81$, $M_{diff}=5.24$; likely to try: $F(1, 84)=13.70$, $p<.01$, $M_{easy}=6.10$, $M_{diff}=4.38$; use more/less: $F(1, 84)=29.43$, $p<.01$, $M_{easy}=5.49$,

$M_{diff}=3.55$). On the basis of these results, summarized in Table 1, we used product evaluation measures as our dependent variable of interest.

Experiment 1

In this experiment, we test whether difficulty in processing an advertisement results in improved evaluations of the advertised product when the ad format encourages narrative processing (H2). To facilitate narrative processing, we advertise the target product using storyboards, which advertising agencies commonly use to sketch out ad concept ideas. As a medium, storyboard ads present a series of scenes that allow them to tell a well-developed story. In addition, prior research has used storyboards with a chronological order to evoke narrative processing (Escalas, 2004).

To test H1, we include two conditions that encourage analytical processing. The first replicates Novemsky et al.'s (2007, Experiment 1) finding that processing difficulty hurts evaluations under conditions of analytical processing in a print advertisement setting, in which a list of attributes evokes analytical thought (Adaval, & Wyer, 1998). In the second, we use the same storyboard stimuli that we use to evoke narrative processing; however, we rely on the study instructions to motivate participants to process these ads analytically. Prior research has demonstrated that when skepticism is induced, participants rely on analytical processing even for stimuli that encourage narrative processing (Escalas, 2007). Thus, to directly examine the role of narrative versus analytical processing within the same ads, we manipulated processing instructions and asked half the participants to review the ad as if they had been asked by an advertising agency for feedback on an ad concept presentation (standard instructions); we asked the other half to evaluate the ad critically and carefully—that is, to think analytically when evaluating the features described in the ad (skepticism instructions). Finally, following Novemsky et al. (2007), we manipulated processing difficulty in both the print ad and the storyboard ad conditions by varying the font size, color, and format. Thus, the experiment employed the following three (between-subjects) factor design: ad processing difficulty (easy/

Table 1
Impact of font difficulty on product evaluation variables: Summary of pre-study.

	Difficult font	Easy font
<i>Dependent variables</i>		
Please indicate your overall opinion of the brand/product	5.00 (.33)	6.51 ^a (.34)
Please indicate how good or bad you thought the brand/product was	5.24 (.32)	6.81 ^a (.32)
Please indicate how likely it is that you would try this brand/product	4.38 (.34)	6.10 ^a (.34)
Would you use this product more or less in response to this ad?	3.55 (.27)	5.49 ^a (.27)

Note. Standard errors are in parentheses.

^a Indicates significant differences between conditions for a given dependent variable at $p<.01$.

difficult), ad type (print/storyboard), and processing instructions (standard/skepticism).

Methodology

Two hundred fifty-three adult U.S. consumers (ages 19–84 years) participated in the online experiment through an online panel in exchange for the chance to win one of three \$100 prizes. After answering basic questions about their Internet usage habits, participants completed the short Need for Cognition scale (Cacioppo, & Petty, 1982) before answering general questions about usage habits for several product categories including pickup trucks (the target product category).¹ Following either standard or analytical processing (skepticism) instructions, participants reviewed the assigned ad, either a storyboard ad or a print ad. The print ads showed a picture of the product and a list of attributes. For the storyboard ads, scenes from a real-world television advertisement were digitally captured and modified. The storyboard ad scenes were shown for 15 seconds each, transitioning automatically through ten scenes, with a caption that described the action in the scene. The advertisement featured a Toyota Tundra truck embedded into a video game, and participants followed the truck as it made its way through the game. The storyboard ad ended with a photo of the product and its tagline to help participants comprehend the ad.

Next, participants answered a series of questions about the ad, followed by questions about the advertised product (“Please indicate how good or bad you thought the brand/product in the advertisement was,” 1=very bad, 100=very good; “If available, how likely would you be to try this product?” 1=definitely would not try it, 100=definitely would try it). We averaged these two product evaluation measures to create a product evaluation index ($\alpha=.70$). Finally, participants rated the difficulty of reading the advertising text as a manipulation check (“How easy was it for you to see the text in the ad?” 1=very difficult, 100=very easy [reversed]; “Did you have to strain to read the text in the ad?” 1=no, it was very easy to read, 100=yes, it was difficult to read the text; $\alpha=.88$).

Results

Our manipulation check was successful. Participants rated the difficult-to-read font as more difficult than the easy-to-read font ($F(1, 249)=61.18, p<.01; M_{\text{easy}}=15.38, M_{\text{diff}}=43.47$). A three-way analysis of variance on the product evaluation index revealed an interaction between ad type and processing instructions ($F(1, 243)=9.74, p<.01$) that was qualified by the predicted three-way interaction of reading difficulty, ad type, and processing instructions ($F(1, 243)=7.94, p<.01$). There were no other significant variables in the model (all other $F_s < 1$).

H1 predicts that under conditions of analytical processing, easy-to-read ads will lead to higher brand evaluations than difficult-to-read ads. As predicted, when the storyboard ads

were processed analytically (which we achieved through the skepticism instructions, see Escalas, 2007), our results support H1 ($M_{\text{easy}}=55.87, M_{\text{diff}}=44.95; F(1, 243)=5.07, p<.05$). Consistent with prior research and our pre-study, H1 was also marginally supported in the print ad domain: Participants who are given standard instructions before exposure to the attribute-based print ads displayed marginally higher brand evaluations when the ads were printed in an easy-to-read font than a difficult-to-read font ($M_{\text{easy}}=59.15, M_{\text{diff}}=49.06; F(1, 243)=2.85, p<.09$). The pattern of results further follows that of prior work in this area; planned contrasts reveal no effect of reading difficulty when the ad encouraged analytical processing and participants were instructed to be skeptical ($M_{\text{easy}}=59.87, M_{\text{diff}}=61.46; F(1, 243)<1$). Although we did not explicitly predict this latter null effect and it is not central to the current work, it is consistent with prior work in this area (see “Discussion” section).

H2 predicts that the findings for analytical processing will actually reverse under conditions of narrative processing. The data support this key hypothesis: When only the storyboard ads were investigated, the analysis revealed a two-way interaction between processing difficulty and instructions ($F(1, 119)=6.50, p<.01$). Planned contrasts demonstrate that for the storyboard ads with standard instructions (which leads to narrative processing; Escalas, 2004), a difficult-to-read format leads to higher brand evaluations than an easy-to-read format, in support of H2 ($M_{\text{easy}}=56.90, M_{\text{diff}}=66.16; F(1, 243)=3.76, p<.05$). Table 2 and Fig. 1 summarize these results.

Discussion

Experiment 1 demonstrates several important effects. First, as predicted, we find that the influence of processing difficulty depends on the type of processing used by the target of the persuasion attempt. Importantly, when ads encourage narrative processing, we find that in contrast to prior work on preference fluency (Novemsky et al., 2007), meta-cognitive feelings of difficulty result in higher product evaluations. When ads encourage analytical processing, we find that increased processing difficulty lowers product evaluations, consistent with Novemsky et al. (2007) findings. This is true both for print ads that directly evoke analytical processing by presenting series of attributes and for storyboard ads (that

Table 2
Impact of font difficulty, ad type, and processing instructions on product evaluation variables: summary of Experiment 1.

Ad type	Easy font		Difficult font	
	Narrative	Analytical	Narrative	Analytical
Standard instructions	56.90 ^c (3.98)	59.15 ^a (3.96)	66.16 ^c (4.16)	49.06 ^a (4.08)
Skepticism instructions	55.87 ^b (3.97)	59.87 ^{n.s.} (3.96)	44.95 ^b (3.96)	61.46 ^{n.s.} (3.90)

Note. Standard errors are in parentheses. n.s.=not significant.

^a H1 tested as a replication of Novemsky et al. (2007); $p<.1$.

^b H1 tested with skepticism instructions for storyboard ads; $p<.05$.

^c H2; $p<.05$.

¹ Product usage habits and the Need for Cognition scale were used as covariates. We used the latter to control for the wide variance in the online panel.

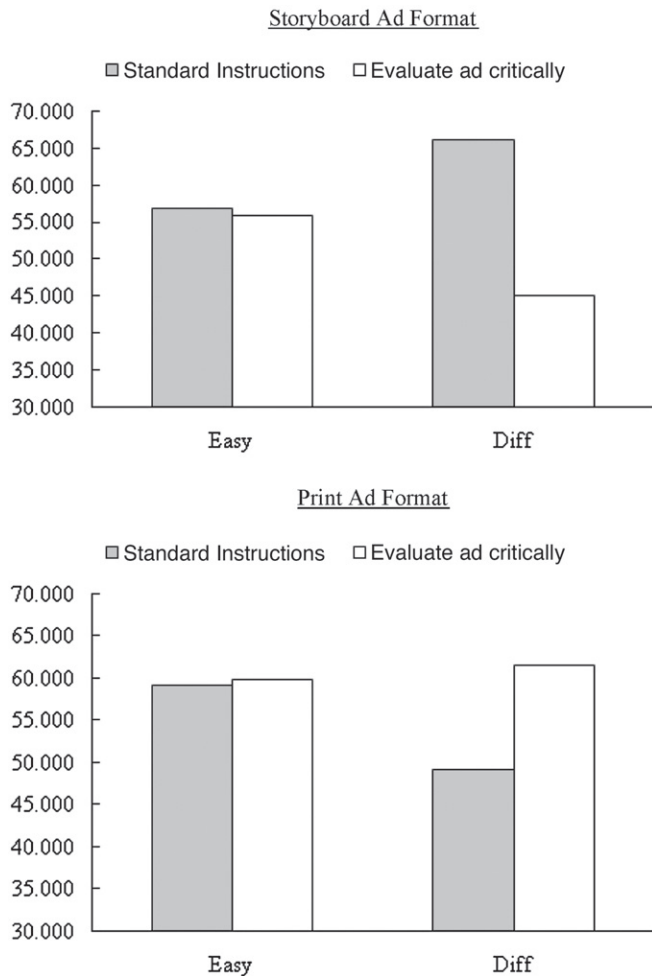


Fig. 1. Product evaluation as a function of reading difficulty, ad type, and processing instructions (Experiment 1).

otherwise evoke narrative processing), when they are processed analytically by participants who have been asked to analyze the ads skeptically.

In addition to the hypothesized effects, in Experiment 1 we found a non-hypothesized effect of skepticism for analytical ads; participants who were asked to evaluate the ad carefully rated the advertised product similar to participants in the easy processing condition. This finding is consistent with previous work in this area. Assuming that more elaborate processing of a relatively simple ad with a difficult-to-read font (and, thus, more critical evaluation of the ad; Petty et al., 1983) brings focus on the difficult font, participants are more likely to attribute difficulty to the font, which should eliminate the effect of difficulty on preference. For example, Novemsky et al. (2007, Experiment 4) found that when participants had a target of attribution for the feeling of difficulty, the influence on preference disappeared.

Central to our proposed process is the role of narrative transportation and the prediction that (1) increased processing disfluency for ads that encourage narrative processing leads to an increase in narrative transportation and (2) narrative transportation in turn drives increased product evaluations. We designed

Experiment 2 to directly test this proposed mediating role of narrative transportation (H3).

Experiment 2

Experiment 2 relies on the storyboard stimuli from Experiment 1, but does not include the skepticism condition. Instead, we measure the proposed driver of the narrative processing condition, narrative transportation, directly in this study.

Methodology

Two hundred fifty-seven adult U.S. consumers (ages 20–83 years) participated in the online experiment through an online panel in exchange for the chance to win one of three \$100 prizes. After answering basic questions about their Internet usage habits and general questions about usage habits for several product categories including pickup trucks (the target product category), participants reviewed the assigned storyboard ad and answered a series of questions about the advertised product (“Please indicate how good or bad you thought the brand/product in the advertisement was,” 1=very bad, 100=very good; “Please indicate how likely it is that you would use this brand/product,” 1=definitely would not use it, 100=definitely would use it; $\alpha=.75$). Finally, participants completed the measure of narrative transportation, which consisted of the 12 general items from Green and Brock’s (2000) work with one exception. Because the advertisement presented the product as part of a video game, the narrative did not adhere to the typical “beginning, middle, end” format, and thus we did not include the question “I wanted to learn how the narrative ended.” Thus, our measure of narrative transportation comprised 11 items ($\alpha=.84$; see Appendix A).

Results

Replicating Experiment 1, we again find improved product evaluation as a result of increased processing difficulty ($M_{\text{easy}}=48.28$, $M_{\text{diff}}=52.87$; $F(1, 253)=4.50$, $p<.05$), in support of H2. Next, analyses confirm the impact of narrative transportation, the hypothesized driver of the positive influence of encoding difficulty on evaluations of the advertised brand (H3). We find a significant effect of processing difficulty on product evaluations ($\beta=4.59$, $SE=2.16$, $t(253)=2.12$, $p<.05$), of processing difficulty on narrative transportation ($\beta=3.59$, $SE=1.71$, $t(253)=2.11$, $p<.05$), and of narrative transportation on product evaluations ($\beta=.61$, $SE=0.07$, $t(253)=8.75$, $p<.01$). When we include narrative transportation as a covariate, the effect of narrative transportation remains significant ($\beta=.60$, $SE=0.07$, $t(253)=8.52$, $p<.01$), but the effect of processing difficulty becomes non-significant ($\beta=2.44$, $SE=1.93$, $t(253)=1.26$, $p>.21$; Sobel test statistic=2.05, $p<.05$).

Discussion

Experiment 2 replicates our key prediction that processing difficulty increases evaluation of products advertised in ads that

encourage narrative processing, in support of H2. Furthermore, we find that in the difficult processing condition, participants are more highly transported by the ad, which leads to higher product evaluations. Thus, we find that narrative transportation fully mediates the effect of processing difficulty on product evaluations, in support of H3.

Although the evidence presented thus far supports the predicted effect of processing disfluency on evaluation through increased narrative transportation, it is important to replicate the findings across ads, product categories, and manipulations. Doing so ensures generalizability of our findings and allows us to rule out alternative explanations that may result when difficult and easy text in ads that is visual in nature is compared. Thus, we designed Experiment 3 to replicate our findings across different manipulations while relying on a new product category and narrative ad.

Experiment 3

We conducted this experiment for two reasons. First, we wanted to demonstrate the influence of processing difficulty on ads processed through narrative processing with a different product category. Second, Experiment 3 directly addresses alternative explanations related to the font manipulation within narrative ads. For example, it is possible that narrative transportation occurs because difficult text is ignored and, thus, only the images are processed—in contrast to our explanation that transportation occurs because more imaginative resources are allocated to process a more complex story. To achieve these goals, Experiment 3 relies on a 2 (image: easy/difficult) × 3 (caption: easy/difficult/none) design, in which the no-caption-only version is paired with easy images, for a total of five conditions.

Methodology

Two hundred thirty-seven adult U.S. consumers (ages 19–75) participated in the online experiment through an online panel in exchange for the chance to win one of three \$100 prizes. After answering basic questions about their Internet usage habits, general questions about usage habits for several product categories including credit cards (the target product category: “In general, what is your opinion about credit cards?” 0=very unfavorable opinion, 100=very favorable opinion; “In general, how do you feel about credit cards?” 0=do not care for them at all, 100=like them very much; and “Do you use credit cards?” 0=almost never, 100=very often, nearly every day; $\alpha=.92$), and a short Need for Cognition scale,² participants reviewed the assigned storyboard ad showing a woman stranded in the jungle with orangutans stealing her luggage. Here, the situation looks dire until she is able to use her Visa card to purchase a truck full of bananas and trade for her luggage.

After viewing the storyboard ad, participants answered three questions about the advertised product (“Please indicate your overall opinion of the brand/product in the advertisement,”

0=very unfavorable, 100=very favorable; “Please indicate how good or bad you thought the brand/product in the advertisement was,” 0=very bad, 100=very good; and “Would you use this product more or less in response to this ad?” 0=I would use the product much less, 100=I would use the product much more; $\alpha=.84$). This was followed by four questions about how easy the text and images were to read/see (“How easy was it for you to see the text in the ad?” 1=very difficult, 100=very easy [reversed]; “Did you have to strain to read the text in the ad?” 1=no, it was very easy to read, 100=yes, it was difficult to read the text; $\alpha=.78$ [for the text]; “How easy was it for you to see the images in the ad?” 1=very difficult, 100=very easy [reversed]; and “How much did you have to strain to see the images in the ad?” 1=not at all, it was easy to see the images, 100=a lot, it was difficult to see the images; $\alpha=.88$ [for the images]).

Next, participants completed the narrative transportation scale used in Experiment 2 ($\alpha=.76$), as well as two scales about processing type, a narrative processing scale (“To what extent did your thoughts focus on the actions the characters were engaged in?” “Did you think about the goals of the characters?” “To what extent did your thoughts focus on what was happening in the life of a character in the ad?” and “Did you think the end of the ad felt like a conclusion?” 0=not at all, 100=very much; $\alpha=.74$), and an analytical processing scale (“To what extent did you systematically evaluate the product in the ad?” “Did you think about the product’s attributes or characteristics?” “Were you skeptical about the product in the ad?” and “Did you think of reasons not to buy the product?” 0=not at all, 100=very much; $\alpha=.59$). Finally, participants answered four multiple choice questions that addressed their memory for specific words in the storyboard text; we did this to examine the extent to which the text was processed.

Manipulation checks

Participants confirmed successful manipulations of both text ($F(1, 186)=50.81, p<.01; M_{\text{easy_text}}=14.66, M_{\text{diff_text}}=44.59$) and image difficulty ($F(1, 186)=71.54, p<.01; M_{\text{easy_image}}=21.19, M_{\text{diff_image}}=50.88$). Importantly, participants further reported engaging in narrative processing ($M=65.79, t(193)=9.38, p<.01$ when compared with scale midpoint of 50), but they did not engage in analytical processing ($M=40.56, t(193)=-5.66, p<.01$ when compared with the scale midpoint).³ To further confirm that our findings are not the result of a lack of processing of the difficult words, we tested participants who saw easy-to-read ad images for four facts from the storyboard text. (Because we predict that more difficult images result in more imaginative resources being dedicated to the ad images, it is not clear what to predict for memory for the difficult-to-read versus easy-to-read text in the difficult image condition.) Comparing easy with difficult text confirmed that our findings were not the result of participants’ experiencing narrative transportation from ignoring, or paying only

² Half the participants answered the Need for Condition scale with the other covariate before reviewing the ads, and the other half answered the scale afterward. There was no effect of scale timing, and thus we collapse across conditions.

³ A follow-up test with 27 undergraduate business students demonstrated that an analytical print ad for the same product resulted in the opposite processing pattern in which participants engaged in analytical processing ($M=6.54/9.00, t(25)=5.22, p<.01$ when compared with scale midpoint) but not narrative processing ($M=3.36/9.00, t(25)=-7.88$).

limited attention to, the text. Performance on the memory measures was high for both conditions, and the number of facts correctly remembered did not differ by condition ($M_{\text{easy}}=3.35/4.00$, $M_{\text{diff}}=3.33/4.00$; $F(1, 91)=.02$, $p>.89$).

Hypothesis testing

We find a marginally significant interaction between image by caption ($F(1, 186)=2.86$, $p<.09$), and importantly, all planned contrasts were significant in the predicted direction. Planned contrasts confirmed H2 with three different comparisons. First, in a replication of Experiments 1 and 2, we again find that when the image is easy to process, brand evaluation improves with increased font difficulty ($M_{\text{easy_text}}=51.71$, $M_{\text{diff_text}}=61.93$; $t(91)=2.59$, $p<.01$). Furthermore, and more important, we conceptually replicate this effect by demonstrating that when the font is easy to process, increasing the image difficulty similarly results in increased brand evaluation ($M_{\text{easy_image}}=51.71$, $M_{\text{diff_image}}=61.64$; $t(96)=2.32$, $p<.05$). In addition, brands are evaluated higher when both text and image are difficult to process than when both are easy to process ($M_{\text{easy_image/easy_text}}=51.71$, $M_{\text{diff_image/diff_text}}=62.75$; $t(95)=2.43$, $p<.02$). Though directionally consistent, when either font or text was difficult to process, there was no added benefit of also increasing the difficulty of the other variable (both $t_s<1$). This makes sense because diminishing returns of increasing difficulty are expected in relatively simple ads, such as those we employed in these studies. Finally, our results confirm that ads featuring difficult text generate higher brand evaluations than ads that feature no text ($M_{\text{easy_image/diff_text}}=61.93$, $M_{\text{easy_image/no_text}}=53.38$; $t(87)=2.00$, $p<.05$). This latter finding brings additional support to our claim that increased processing difficulty leads to increased narrative transportation through the allocation of more processing resources. Specifically, this finding confirms that narrative transportation is not the result of participants giving up on reading a difficult font or being transported further by ignoring the text and attending only to the images. Table 3 summarizes these results.

Mediation analysis

Finally, mediation analyses again confirm the mediating relationship among processing difficulty, narrative transportation, and brand evaluation (H3). To conduct the mediation analysis, we first coded the five conditions according to their processing difficulty (no-text/easy image=0, easy image/easy text=1, easy text/difficult image=2, difficult text/easy image=2, difficult text/

difficult image=3; please note that easy text/difficult image and difficult text/easy image are considered equivalent for this purpose). With this variable as the independent variable, we find a significant effect of processing difficulty on product evaluations ($\beta=3.53$, $SE=1.32$, $t(234)=2.67$, $p<.01$), of processing difficulty on narrative transportation ($\beta=2.91$, $SE=1.25$, $t(234)=2.34$, $p<.05$), and of narrative transportation on product evaluations ($\beta=.61$, $SE=0.06$, $t(234)=10.60$, $p<.01$). When narrative transportation is included as a covariate, the effect of narrative transportation remains significant ($\beta=.59$, $SE=0.06$, $t(234)=10.27$, $p<.01$), but the effect of processing difficulty becomes non-significant ($\beta=1.81$, $SE=1.11$, $t(234)=1.63$, $p>.1$; Sobel test statistic=2.26, $p<.05$).

Discussion

Experiment 3 adds several important findings, in addition to replicating previous results with a new product and advertisement. First, manipulation checks confirm that when participants processed the storyboard ads, they relied on narrative but not analytical processing. Second, we introduce two new manipulations that significantly increase our confidence in the interpretations of the results from Experiments 1 and 2. Difficult-to-read (versus easy-to-read) images replicated the effects of the difficult-to-read (versus easy-to-read) text of Experiments 1 and 2. Furthermore, the no-text condition mirrored the easy-to-read text, which confirms that narrative transportation improves when people work to process the difficult stimuli, not from ignoring difficult-to-read text wherein they would be transported from focusing only on the images in those conditions. This interpretation was further confirmed because participants in the difficult text condition performed as well as those in the easy text condition with respect to remembering facts presented in the storyboard text. Third, we again demonstrate that narrative transportation fully mediates the effect of processing difficulty on brand evaluation.

Finally, Experiment 3 allows us to rule out a related but slightly different processing account than the one we offer. Specifically, feelings of ease are often interpreted as familiarity, and as a result of this perceived familiarity, fewer resources are allocated to processing the perceived-to-be-familiar stimulus (Song & Schwarz, 2008). Thus, if this familiarity account were to be applied to our findings, the implication would be that in the easy processing condition, participants failed to be transported by the ad because they simply did not process the ad text carefully enough to follow the story. However, the memory measures for the text content enable us to rule out this insufficient attention explanation, because participants in the easy condition displayed strong performance on the measures of memory for text details. Thus, it is unlikely that our transportation results are due to participants partly ignoring the easy ads because they perceived themselves to be already familiar with them.

General discussion

In recent years, consumer researchers have developed a strong body of work showing that task characteristics can influence current and subsequent task performance and outcomes without

Table 3
Impact of font difficulty and image difficulty on product evaluation variables: summary of Experiment 3.

	Easy font	Difficult font	No font
Easy-to-read image	51.71 ^a (2.83)	61.93 ^b (2.92)	53.38 ^c (2.96)
Difficult-to-read image	61.64 ^d (2.54)	62.75 ^c (2.57)	

1. Comparison ^{a-b} significant at $p<.01$,

2. Comparisons ^{a-d}, ^{a-c}, and ^{b-c} significant at $p<.05$,

3. Comparisons ^{a-c}, ^{b-c}, and ^{d-c} N.S.

Note. Standard errors are in parentheses.

consumers' awareness. Such influences include, but are not limited to, triggering selective attention processes (Nielsen et al; Nielsen, & Shapiro, *forthcoming*), triggering habitual responses (Wood, & Neal, 2009; Aarts, & Dijksterhuis, 2000), and activating procedural mindsets that guide goal pursuit on subsequent tasks (Xu, & Wyer, 2007; Wyer & Xu, 2010). Another stream of research is adding to this literature by demonstrating that consumer choices are often systematically influenced by meta-cognitive feelings of difficulty or ease, such that when a decision option feels more difficult or requires more effort, consumers are more likely to select a different option or defer the decision (Novemsky et al., 2007; Schwarz, 2004). Novemsky et al. (2007) label this effect the preference fluency effect.

In the current research we identify an important boundary condition for this preference fluency effect, one that actually reverses it. When consumers form preferences using narrative processing, difficulty in processing the ad *improves* brand evaluations for the advertised brand. We find that consumers engaged in narrative processing are more likely to be transported by the ad's story when they infer that effort is required to process the ad, which in turn leads to enhanced brand evaluations. The meta-cognitive feelings of difficulty are not used as a negative input into the judgment formation process (as is the case with analytical processing), because the goal under narrative processing is to comprehend the story. Therefore, when faced with difficult-to-process narrative stimuli, consumers invest more cognitive and imaginative resources to comprehend the story, leading to higher levels of transportation and, as a result, enhanced persuasion.

Recent research has demonstrated other important boundary conditions for the preference fluency effect, in which under certain conditions more effort improves preferences, even under conditions of analytical processing. Labroo, and Kim (2009) demonstrate the "instrumentality" heuristic by showing that the preference fluency effect may reverse when an attitude object is a means to obtaining a goal. Specifically, they demonstrate that feelings of effort or difficulty lead participants to view these objects as more instrumental for obtaining the goal. Pocheptsova et al., *forthcoming*) demonstrate that certain product categories may similarly reverse this effect. Specifically, they demonstrate that processing difficulty can help improve preferences for special occasion products.

Our findings provide a very different reversal of the preference fluency effect that is independent of participants' goals and the types of products being advertised but instead depends on how information about the attitude object is processed. Specifically, when preferences are formed or accessed through analytical processing, processing difficulty hurts the brand because feelings of difficulty are attributed to the attitude object. However, when preferences are formed through narrative processing, feelings of difficulty can help improve preferences for the attitude object by generating higher levels of transportation through the allocation of more resources to process the perceived-to-be-more-complex story.

Limitations

This research does not directly measure the extent to which consumers invest cognitive and imaginative resources, though

we include memory measures for the ad text in *Experiment 3* that support our assertions. Instead, we primarily rely on transportation, which is a downstream measure that is enhanced by mental engagement in a story (e.g., Green, 2009; Green, & Brock, 2002; Green et al., 2008). Another potential limitation is that there are clearly calibration issues at play in our studies. Undoubtedly, if the text and/or storyboard images are immensely difficult to process, consumers will not make an effort to comprehend the story at all, leading to less transportation and persuasion. Thus, our model should predict an inverted U-shaped relationship between processing difficulty and transportation (Green et al., 2008).

Future research

In our studies, under conditions of narrative processing, consumers' meta-cognitive experiences may have related to assessment of story quality rather than ease of decision making. We found that consumers were willing to invest more resources to understand a difficult-to-read story, which in real-life settings may be highly complex. This idea is consistent with psychological research on story quality, which treats high-quality stories as those that evoke more processing effort. The underlying assumption is that a complex, thought-provoking story is considered a good story. Therefore, future research should study which aspects of narratives lead to the lay notion that more effort is a normatively correct response to complexity.

A way to approach this question is to examine which aspects of stories increase processing efforts in the first place. For example, Bruner (1990) proposes two dimensions to a narrative: the landscape of action and the landscape of consciousness. The former is the causal sequence of events, and the latter is the degree to which the viewer is made aware of the protagonist's psychological state. Readers make more inferences and exert a greater effort to construct an interpretation when a story has a well-developed landscape of consciousness (Feldman et al., 1990). Bruner asserts that a story with both a landscape of action and consciousness is a better story than one that contains only a landscape of action, in part, because readers exert more effort when both are present.

In addition, a narrative imbalance has also been shown to improve a story's quality (Feldman et al., 1990; Lucariello, 1990). An imbalance can take the form of a breach in canonical expectations about how people should behave or how stories should unfold (e.g., throwing water on birthday cake candles breaches cultural expectations about birthday party behavior). A narrative imbalance can also create tension between story elements, such as actions that fail to achieve goals (e.g., the love of Romeo and Juliet fails to bring them and their feuding families together). Narrative imbalances lead to increased elaboration by readers as they attempt to explain the imbalance (Feldman et al., 1990; Lucariello, 1990). Thus, again, story quality is correlated with cognitive effort. This relationship may contribute to the meta-cognitive experiences that potentially underlie our findings that under conditions of narrative processing, processing difficulty enhances product evaluations.

Further, the findings in this and other research have demonstrated narrative transportation to be a strong and consistent influence on preferences for consumer products and brands through the process of experiencing the product or brand as part of a narrative. Thus, the question arises of whether narrative transportation may similarly influence consumer preferences in other ways. For example, might narrative transportation ease the consumer's acceptance of hybrid products comprised of highly dissimilar components (Gibbert & Mazursky, 2009) or a really new product (Hoeffler, 2003) by allowing the consumer to be transported into a world where the product is experienced in context as part of a narrative?

Appendix A. Narrative transportation items

- 1 While thinking about the advertisement, I could easily picture the events in it taking place.
- 2 While watching the advertisement, activity going on in the room around me was on my mind (R)
- 3 I could picture myself in the scene of events shown in the advertisement.
- 4 I was mentally involved in the advertisement while looking at it.
- 5 After I finished looking at the advertisement, I found it easy to put it out of my mind. (R)
- 6 The advertisement affected me emotionally.
- 7 I found myself thinking of ways the advertisement could have turned out differently.
- 8 I found my mind wandering while I looked at the advertisement. (R)
- 9 The advertisement is relevant to my everyday life.
- 10 My thoughts about the advertisement changed how I think about the product being advertised.
- 11 While looking at the advertisement, I had a vivid image of myself using the product being advertised.

Note. Adopted from Green and Brock (2000). (R)=reverse coded.

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