RISING ACTION: THE EFFECT OF NARRATIVE TRANSPORTATION ON CONSUMER PURCHASE BEHAVIOR

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RISING ACTION: THE EFFECT OF NARRATIVE TRANSPORTATION ON CONSUMER PURCHASE BEHAVIOR

by
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ABSTRACT

RISING ACTION: THE EFFECT OF NARRATIVE TRANSPORTATION ON CONSUMER PURCHASE BEHAVIOR

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Bachelor of Science

We investigate whether narrative transportation can have an effect, not only on beliefs and purchase intentions, but on purchase behavior. Participants watch a video related to digital assistants and choose whether to enter a drawing for their choice of a digital assistant or a gift card; we hypothesize that those whose transportation is inhibited will be less likely to choose the digital assistant. We successfully inhibit transportation in the pretest, but do not see similar results in the study and are thus unable to determine if there is an effect on behavior.
ACKNOWLEDGEMENTS

Enormous thanks to Jeff Larson for his willingness to guide a brand-new researcher and show me the ropes.

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TABLE OF CONTENTS

Title ............................................................................................................................................... i
Abstract ........................................................................................................................................ ii
Acknowledgments ....................................................................................................................... iii
Table of Contents ........................................................................................................................ iv
List of Tables and Figures ............................................................................................................. v

Introduction ..................................................................................................................................... 1

Background ..................................................................................................................................... 1

Our Hypothesis .............................................................................................................................. 2

Pretest ........................................................................................................................................... 3

Study ............................................................................................................................................ 4

Results ........................................................................................................................................ 5

Conclusion ................................................................................................................................... 7

Limitations ..................................................................................................................................... 8

References ................................................................................................................................. 10
LIST OF TABLES AND FIGURES

FIGURE 1: Pretest Means .......................................................... 4
FIGURE 2: Study Means .......................................................... 5
FIGURE 3: Drawing Choices per Group ...................................... 6
FIGURE 4: Relatedness Question Means .................................... 6
FIGURE 5: Relatedness by Transportation Coefficients.................. 7
The advent of video streaming services means that the world is saturated with narrative. The rise of watch-now video platforms such as Netflix, Hulu, and Amazon Prime mean that consumers can watch their favorite movies and television shows with little more than a few clicks from the remote or a few taps on the phone. With the average American consumer spending on average six hours per day watching television (Nielsen.com 2018), the need to understand the effect of these narratives on consumers has never been greater.

Since its introduction 20 years ago, the narrative transportation theory of persuasion (Green & Brock 2000) has been the subject of many popular studies related to consumer beliefs and purchase intentions (e.g. Appel 2016; Redondo et al. 2018; Black et al. 2018). Further studies have corroborated the theory’s overall plausibility and addressed various moderating variables (most notably Van Laer et al. 2014; see also Green 2004).

However, virtually no research has been done on actual behavioral changes caused by the effects of narrative transportation. The rare studies that include some discussion on its effects on consumer behavior have been centered on addiction (Lochbuehler 2010; Green 2012). As a result, there is a significant dearth in the academic literature regarding whether the narrative transportation theory can demonstrate an effect on anything more than beliefs or intentions.

This study will address this gap in the literature, investigating whether narrative transportation can influence consumer purchase behavior itself. The implications for advertising, public policy, and marketing in general are clear and important. If public narratives influence belief and in turn behavior, what effect are our public narratives having on the population? In what ways are these narratives influencing behavior?

Background

The current form of narrative transportation theory was foreshadowed by Gerrig’s book, *Experiencing Narrative Worlds: On the Psychological Activities of Reading* (1993), in which the author describes the effects of narratives as a sort of journey on which the “traveler,” or reader, changes – in beliefs, in intentions, and potentially in behavior. These ideas were echoed by later studies: Adaval and Wyer (1998) explored whether presenting information in narrative form was more attractive than information in other forms, and found that it was consistently so, due primarily to narrative’s similarity to everyday life; Strange and Leung (1999) analyzed the effect of news and fiction anecdotes on people’s judgments of social problems, and found that their opinions were significantly influenced by the stories, moderated by readers’ prior knowledge of the problem.

Green and Brock (2000) were the first to propose this transportation experience as a method of persuasion. They proposed the transportation-imagery model of persuasion and demonstrated that higher transportation was correlated with beliefs that were more consistent with the story. They suggested that this could be due to reduced counterarguing, as readers are in a state of “flow” and thus are less inclined to interrupt that flow by contradicting claims made by
the narrative. Green and Brock concluded by calling for further research into the subject.

Over a decade later, the meta-analysis published by van Laer et al. (2014) identified 279 studies related to narrative transportation and 76 that employed narrative transportation as a quantitative variable to be measured. These studies have investigated a variety of antecedents, consequences, and moderators of narrative transportation. For example, Appel and Richter (2007) find that the persuasive effects of narrative transportation grow stronger over time, which they term a “sleeper effect.” Escalas (2007) finds that ad skepticism can reduce the reader or viewer’s level of transportation. Others have discovered a variety of factors can inhibit or attenuate transportation, include identifying with a character (Dal Cin et al. 2007), familiarity with the topic of the story (Green 2004), and personal traits that predispose individuals toward being transported (Brechman and Purvis 2015).

As mentioned above, though, there is a noticeable lack of empirical studies that have demonstrated transportation’s effect on behavior itself, rather than beliefs or behavioral intentions. The two exceptions, listed here, are limited to transportation’s effects on addiction. Lochbuehler et al. (2010) demonstrated that smokers who watched a movie that featured fellow smokers (with whom they could identify) exhibited lower transportation and smoked a greater number of cigarettes during the movie. Williams et al. (2010), in a similar experiment, found that smokers given narratives about quitting smoking (as opposed to generalized lectures about health) were twice as likely two weeks later to report having quit.

However, both of these studies relate to physiological addiction and not to psychological willingness to buy (though there is, of course, a psychological component). The way transportation affects smokers cannot safely be extended to the average consumer’s purchase behavior; for example, the visual stimulus of seeing someone smoke may trigger the habit in a fellow smoker, but may not influence a non-smoker to purchase cigarettes.

Our Hypothesis

We determined to take what Williams et al. (2010) had demonstrated in the realm of addiction and see if it could be replicated in the realm of public narrative, especially fiction. We reasoned that if transportation could affect consumers’ beliefs and behavioral intentions with some consistency, it could reasonably affect behavior itself as well.

We thus designed an experiment to investigate this. We would show participants a video clip that featured an advanced digital assistant and inhibit one group’s transportation, then offer all the participants the choice to enter a real drawing for either an Amazon Echo Dot (a digital assistant, valued at $30) or an Amazon gift card (value $20). We hypothesized that those whose transportation was inhibited would be less likely to select the Echo Dot (i.e. less likely to hold beliefs about digital assistants consistent with the video clip) than those whose transportation was uninhibited.
Pretest

Prior to the study itself, we ran a pretest to verify the transportive effects of the video clip. The clip had to be related to digital assistants in some form; we ultimately settled on a two-minute clip from *Iron Man*, a popular superhero film in which a wealthy executive, Tony Stark, creates a mechanical suit that empowers him to fight injustice. The suit is partially powered by Stark’s artificially intelligent digital assistant, JARVIS (stylized “J.A.R.V.I.S.,” but referred to as JARVIS here for readability).

The video depicts the first time the suit is assembled in its entirety. The assembly is done largely by robotics being directed by JARVIS, with whom Stark interacts throughout the scene. Stark gives a series of voice commands, which direct JARVIS to execute various tasks related to the construction and function of the suit. In the video, JARVIS is shown as highly advanced and capable of complex conversation, including tone recognition, counterarguing, and even being cut off mid-sentence by Stark.

Participants

The participants of our study were college students who voluntarily enrolled in the study through the Marriott School’s Marketing Lab and were offered extra credit, assignable to different classes, in return for completing the study. In all, 95 participants completed the pretest; 52 respondents were male and 43 were female. 79 of the students were business or pre-business majors; 7 were from various other majors, and 9 declined to list their major.

Procedures

In the pretest, research participants were brought into a computer lab and invited to sit at individual computers, on which they each took a survey. The survey began with the clip described above. Prior to watching the clip, participants were randomly assigned to the experimental or the control group. To inhibit transportation, the experimental group was asked to count the number of times that the main character’s face appeared on-screen (somewhat inspired by Zwarun and Hall 2012). Inhibiting transportation in advance follows the findings of McFerran et al. (2010), which determined that attempts to attenuate transportation were most efficacious when performed prior to the transportation. The control group watched the film as usual.

Once they completed the video clip, participants self-reported their transportation, some beliefs related to the story, and a general affect (PANAS) scale. The results of each category were combined into a composite score, averaged using the arithmetic mean, and compared across groups using a two-sample t-test.
Table 1: Pretest Means. Transportation was successfully inhibited, but story-consistent beliefs were not affected.

<table>
<thead>
<tr>
<th></th>
<th>Uninhibited</th>
<th>Inhibited</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>3.23</td>
<td>2.83</td>
<td>.003**</td>
</tr>
<tr>
<td>Story-consistent</td>
<td>4.76</td>
<td>4.71</td>
<td>.503</td>
</tr>
<tr>
<td>beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANAS</td>
<td>3.78</td>
<td>3.8</td>
<td>.827</td>
</tr>
</tbody>
</table>

Results

The analysis showed a statistically significant effect on transportation (p = .003), which demonstrates that we successfully manipulated transportation in the test. We were not able to find a significant increase in story-consistent beliefs across the groups (p = .503), but we attributed this to the brevity of the questions about the participants’ story-consistent beliefs (there were three, with just one relating to digital assistants). The PANAS scale did not show a statistically significant difference, demonstrating that the narrative manipulation did not influence participants’ mood or emotions. We thus developed our final study on the basis of this pretest.

Study

Participants

As in the pretest, the participants were college students who voluntarily enrolled in the study through the Marriott School’s Marketing Lab for extra credit. In all, 91 participants completed the survey; 59 respondents were male and 32 were female. 77 of the students were business or pre-business majors; 7 were from various other majors, and 7 declined to list their major.

Procedures

Like the pretest, research participants took surveys on individual computers in a computer lab, beginning with the clip from Iron Man. Participants were randomly assigned to either the experimental or the control group; the experimental group had its transportation inhibited by the instruction to count how often the main character’s face appeared on-screen, where the control group watched uninhibited.

Once the participants finished watching the video, they answered two brief questions to determine their level of understanding and whether they had seen the clip previously. They were then invited to enter a drawing. If they chose to enter the drawing, they were asked for their email (to contact them should they win) and were given a choice between entering to win an
Amazon Echo Dot (value $30) and an Amazon gift card (value $20). (The disparity in value was to adjust for the higher opportunity cost of choosing the Echo Dot, since the gift card could be used to purchase other items.) Participants were informed that this was a real drawing and that one winner would actually receive their chosen prize, which they could pick up in the researcher’s office the following week.

Following the drawing, participants answered questions to assess their level of transportation, their story-related beliefs (e.g. beliefs about the usefulness of digital assistants), and their general affect.

*Level of transportation.* We utilized the video transportation scale developed by Williams et al. (2010) to assess participants’ level of transportation, which includes five questions about involvement on a seven-point scale ranging from “Not at all” to “Very much.”

*Story-related beliefs.* Participants answered six questions to assess their story-related beliefs. These questions included, among others, the following: a question about how soon they believed the digital assistant technology shown in the clip would be possible; a question presenting various commands that could be made to a digital assistant, to which they responded with how often they believed a digital assistant could correctly execute the command (in percentage form); and a question presenting various tasks, to which participants responded with the likelihood that a digital assistant could perform the task autonomously (on a seven-point scale ranging from “Extremely unlikely” to “Extremely likely”).

*General affect.* To measure general affect, we used the international short-form PANAS scale developed by Thompson (2007), which we also used in the pretest.

Each respondents’ answers within each category were combined into a composite score, averaged using the arithmetic mean, and compared across groups using a two-sample t-test.

**Results**

Four respondents chose not to participate in the drawing and were excluded from the results, which left 87 participants. Of those included, 65 said they had seen the clip previously, 16 said they had not, and 6 said they didn’t remember.

<table>
<thead>
<tr>
<th></th>
<th>Uninhibited</th>
<th>Inhibited</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td>3.14</td>
<td>2.87</td>
<td>p = .08*</td>
</tr>
<tr>
<td><strong>Story-consistent beliefs</strong></td>
<td>29.31</td>
<td>30.03</td>
<td>p = .56</td>
</tr>
<tr>
<td><strong>PANAS</strong></td>
<td>3.77</td>
<td>3.86</td>
<td>p = .37</td>
</tr>
</tbody>
</table>

*Table 2: Study Means. None of the measures were affected by the study procedures.*

This time, we were unable to see a statistically significant effect on transportation, though it did border significance (p = .08). The manipulation of narrative transportation did not produce a
statistically significant difference in story-consistent beliefs. Our hope that the increased number and detail of questions related to story-consistent beliefs would produce a significant difference did not materialize.

<table>
<thead>
<tr>
<th></th>
<th>Amazon Echo Dot</th>
<th>Amazon gift card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uninhibited</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Inhibited</td>
<td>7</td>
<td>38</td>
</tr>
</tbody>
</table>

*Table 3: Drawing Choices per Group. Respondents overwhelmingly chose the Amazon gift card.*

Moreover, we did not see a statistically significant effect on choice based on the level of transportation (p = 0.18). The vast majority (85%) of respondents chose the gift card over the Echo Dot. It is possible that participants’ predilections toward flexibility (i.e. the opportunity cost of not choosing the gift card) overpowered any effect that transportation may have had on their choice. If this was the case, we would expect a less flexible item to exhibit a more significant transportation effect.

We attempted to dig deeper to determine if we could demonstrate an effect on any of the relatedness questions based on whether or not the viewer’s transportation was inhibited, but none of these measures were significantly different between the experimental group and the control group.

<table>
<thead>
<tr>
<th></th>
<th>Control Mean</th>
<th>Exp. Mean</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How soon do you believe the digital assistant technology (&quot;Jarvis&quot;) shown in this video clip will be possible?</td>
<td>4.81</td>
<td>4.48</td>
<td>-0.32</td>
<td>0.35</td>
</tr>
<tr>
<td>In the following scenarios, what percentage (%) of the time do you believe a digital assistant will give the correct response? (6 scenarios given)</td>
<td>69.68</td>
<td>71.41</td>
<td>1.73</td>
<td>0.59</td>
</tr>
<tr>
<td>How clear do you believe a verbal request to a digital assistant must be in order for the digital assistant to understand the request?</td>
<td>4.07</td>
<td>4.11</td>
<td>0.04</td>
<td>0.82</td>
</tr>
<tr>
<td>What do you believe is the likelihood that a digital assistant is able to perform this task autonomously, or without needing a specific command from the user? (6 scenarios given)</td>
<td>5.68</td>
<td>5.73</td>
<td>0.05</td>
<td>0.75</td>
</tr>
</tbody>
</table>

*Table 4: Relatedness Question Means. None of these questions showed statistical significance.*

The same outcome held when we looked for an effect on relatedness questions based on the level
of the viewer’s transportation as reported by the respondents:

<table>
<thead>
<tr>
<th>Question</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How soon do you believe the digital assistant technology (&quot;Jarvis&quot;) shown in this video clip will be possible?</td>
<td>0.37</td>
<td>0.12</td>
</tr>
<tr>
<td>In the following scenarios, what percentage (%) of the time do you believe a digital assistant will give the correct response? (6 scenarios given)</td>
<td>0.93</td>
<td>0.68</td>
</tr>
<tr>
<td>How clear do you believe a verbal request to a digital assistant must be in order for the digital assistant to understand the request?</td>
<td>0.01</td>
<td>0.91</td>
</tr>
<tr>
<td>What do you believe is the likelihood that a digital assistant is able to perform this task <em>autonomously</em>, or without needing a specific command from the user? (6 scenarios given)</td>
<td>0.23</td>
<td>0.06*</td>
</tr>
</tbody>
</table>

*Table 5: Relatedness by Transportation Coefficients. Only one of the coefficients showed marginal significance based on transportation.*

The final relatedness question (testing story-consistent beliefs) about autonomy was marginally significant, which would suggest that perhaps as level of transportation goes up, the viewer’s belief in digital assistants’ ability to perform certain tasks autonomously increases. However, since the effect is only marginally significant, we should be cautious about making any conclusions.

**Conclusion**

The results were obviously very disappointing. Not only did we fail to demonstrate transportation’s effect on behavior, we inexplicably were unable to replicate the statistically significant difference in transportation levels demonstrated in the pretest. Moreover, we failed to show any effect on story-consistent beliefs in either study.

However, this should not be construed as evidence against the possibility that behavior can indeed be influenced by transportation. Rather, this is an opportunity for further research to define why certain narratives can influence beliefs so strongly and others cannot. *Iron Man* prominently features a digital assistant performing various tasks, yet we were unable in both instances to influence viewers’ beliefs about digital assistants. Why is this? Further research likely holds the answer.
Limitations

There were a variety of limitations that could have influenced the results of the study. We will list only a few of them here.

First and foremost, due to the disparity in choice between the Echo Dot and the gift card, it seems likely that we failed to account adequately for the opportunity cost implicit in choosing the Echo Dot. Whereas a $20 Amazon gift card can be used for many different purposes, an Echo Dot can only really be used for one – a digital assistant. The valuation of the gift card at $20 was an unscientific estimation; more detailed analysis could potentially unearth the actual opportunity cost to consumers, and that cost could be better accounted for in the study.

Second, we faced difficulty in persuading the respondents that the drawing for the prize was real, which may have influenced their response. Most of these respondents regularly participate in similar studies and are conditioned to expect hypothetical situations as part of the experience. We tried to mitigate this with the language used in the survey, but there is a possibility it was still insufficient.

Third, the study was exceptionally limited demographically. Our samples were hardly representative of the population at large, given that over 90% of the respondents identified as white business or pre-business majors attending a religious university. These characteristics transparently differ from those of the general populace. However, this may or may not be detrimental, given that no studies have yet found conclusive evidence of demographic differences in transportation levels.

Again, further limitations could be listed, but for brevity’s sake we will omit them here.

Personal Disclaimer

Clearly, this study faced constraints of experience and time. This study was my very first; indeed, my first experience in any kind of marketing research came at the beginning of this school year, and that was primarily a literature review. Conceiving, designing, and executing the experiments were all completely new to me. As a result, I’m sure there are numerous methodological errors introduced into the study due to my inexperience.

I also have almost no statistical background. It might not be an exaggeration to say that the analyses presented in this paper, despite being remarkably rudimentary, pushed me to my statistical-analysis limits.

In addition, the limited time in which to do the experiment presented issues. I began the research for this project in September, started designing the experiment in November, and submitted it to the IRB in January. When it was finally approved, I had little time left to carry out the actual study and even less to do a proper analysis. With more time, I would have liked to run more pretests until we could demonstrate a change in story-consistent beliefs, run multiple
experiments with different clips and drawings, and get larger sample sizes.

Nevertheless, the prospect of future research, potentially when I have more time and experience, excites me. I revel in the possibility of adding to the corpus of human knowledge and enjoyed the analysis of these data, fruitless as it was. I hope to pursue research further in the future and perform more successful studies.


