Different Narrative Type Effect on Transportation and Empathy

A Senior Comprehensive Project

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Table of Contents

Abstract 4

Introduction 5

Method 12

Results 14

Discussion 15

References 18

Appendix A. 20

Appendix B. 21

Appendix C. 22

Appendix D. 23

Appendix E 25

Abstract

Previous research on narrative type show that fiction is more efficient in transporting readers and impacting their empathy. Most of these studies examine the differences in narratives types between fiction and nonfiction, which does not include creative nonfiction. Creative nonfiction can be as imaginative and emotion-provoking as fiction and it is based on true events. This study hypothesized that there will be no difference in the level of transportation and empathy between fiction and creative nonfiction. To investigate the hypothesis, this study conducted a study of 33 participants. Each participant was randomly assigned to one of three narrative conditions: fiction, creative nonfiction, and standard nonfiction. This study found no significant results to support the hypothesis, but it did find a correlation between transportation and empathy. This study hopes to pave a pathway for future studies to consider other works of narrative and their effects on transportation and empathy.

Introduction

Research on transportation is a rapidly expanding field in cognitive psychology due to its implications on daily life and effects on emotion. Much of the current work suggests that transportation into narratives can impact empathy, yet there are still more questions regarding the extent of the effect, and in what genres of narrative can be expected to have more influence on empathy. Recent research depicts fiction as the superior genre for impacting empathy in readers due to its ability to place the reader in a world where they can simulate situations that act as a training module for real-world encounters. Fiction writers can use some aspects of the real-world to create and transport the reader into an imaginative environment in which they are challenged in ways that real life cannot, at least without consequences. While fiction does possess these qualities, this study presents creative nonfiction (CNF) as a genre possessing similar feats to fiction. CNF is a subgenre of nonfiction that allows narratives to be scenic, impactful, and still uphold nonfiction commitment to truth. Previous research that deals with narrative implications of cognitive psychology has only compared fiction to standard nonfiction (news, scientific writing, etc), which revealed that fiction has more influence on empathy after reading a narrative. While these studies have thorough evidence to support their claims, this study challenges them by proposing that CNF effects on empathy can be very similar to fiction. This study will present work on transportation and empathy and how they are impacted by a type of narrative as well as providing neuroscientific findings to show how these two aspects are influencing each other.

Transportation: A Vehicle for Empathy

Transportation is the convergence of mental processes and capacities that allow the reader to only focus on the narrative and less aware of the physical surroundings (Bal & Veltkamp, 2013). Another classical definition of this concept is the extent to which involvement occurs on

emotionally imaginative realm (Oately, 2016). Transportation has important roles in many research articles that examine the effects of narratives on socio cognitive skills. Another study of transportation that had performed an empirical assessment of transportation defined the concept as a conceptualization of distinct mental process that has potential impacts on reader's beliefs (Green & Brock, 2002). In other words, a narrative can transport the reader into an imaginative realm in which they are taken through the story as one of the characters in a narrative. It is apparent why fiction readers report higher transportation into fiction narrative because the story is crafted to draw them in the plot where the physical environment is no longer the main stimuli. For example, Bal and Veltkamp (2013) explore how narrative transportation enhances empathy overtime and found that readers who were in the fiction condition reported higher transportation than the control condition, the nonfiction. Their findings, however, were only evident under the condition of low or high emotional transportation into the narrative. Thompson et al. examined transportation into narrative drama and the individual differences of that process. The researchers of that article described transportation as a way for a narrative to draw in the reader through their emotions and attention (Thompson et al., 2018).

Although there are no studies that implicitly correlate transportation to a specific brain area, the supramarginal and angular gyri have been hypothesized to play significant roles in phonological and semantic aspects of word processing (Stoeckel, et al., 2009). The heterogenous gyri are present in both hemispheres of inferior parietal lobe which are connected to reading (Stoeckel, et al., 2009). A study conducted by Stockel et al. (2009) has demonstrated that the supramarginal gyri contributes to reading regardless of the task demands by assigning participants to reading and visual conditions. Another study that revealed a connection between supramarginal gyri and transportation was examined by Berns and colleagues (2013). Their

study on short- and long-term effects of brain connectivity in the gyri has shown that even after several days of reading a novel increased connectivity in the left angular/supramarginal gyri (Berns et. al., 2013). They did so by instructing participants to read parts of a novel over the course of several days and recorded their data using an MRI machine. These studies, although not directly, show ways that can correlate transportation to specific brain areas that can allow readers to engage subcortical language processes, a measurable neural mechanism of transportation.

Transportation Differences for Fiction and Nonfiction

The basis of narratives lies within the nonfiction or fiction genre. Much of the work presented in current research establishes a clear difference in the impact of nonfiction and fiction on socio-cognitive processing. However, this separation essentially simplifies to the amount of truthfulness of the narrative. In other words, fiction can be based on the real world with altered details to enable the reader to imagine the situation in the narrative, or a completely imaginative story that has no resemblance to what readers consider to be part of their daily life. Combined with creativity, fiction can deliver a unique method of transportation to readers by mimicking what is already known to the readers. Nonfiction is very different. It can only be based on fact and truth, which leaves very little room for creativity in respect to explaining the narratives. Most readers that seek work of fiction do so for the purposes of escaping reality, finding entertainment, and learning how to adapt to situations that have no real-life consequences. Works of nonfiction can be sought out for scholarly purposes; to gain knowledge of the unknown. This does not mean, however, that subgenres of nonfiction cannot achieve the same level of transportation as fiction does.

Fiction narratives attempt to transport readers into imaginative consciousness of the mind where they can simultaneously switch between physical and fictional worlds (Thompson et al., 2018). Researchers describe fiction as a verisimilitude narrative due to its adaptability to (Bal & Veltkamp, 2013). Nonfiction, on the contrary, is based on fact. Much of the research on transportation presents nonfiction as explanatory nonfiction, news articles, and scholarly textbooks. The implications of these comparisons point to fiction being a better tool for eliciting empathy in readers through transportation into the text. More on empathy and narratives as well as brain areas that can be correlated with empathy will be discussed in future sections.

Creative Nonfiction, Similarities and Differences to Fiction

Creative nonfiction (CNF) can be very similar to fiction because of the similarities of literary devices utilized, such as imagery and metaphors. While standard nonfiction does not take advantage of the various literary devices of writing, authors of CNF rely on them to convey scenic details vividly through narratives. Fiction is capable of a similar feat through its fabrication of reality into the imaginative narrative that transports readers into a different dimension. This similarity of literary devices in both CNF and fiction create a question regarding the impact of empathy and transportation; Are both genres able to achieve the same level of impact on these two important aspects of cognitive psychology? This study hopes to answer this very question through analyzing transportation and empathy of readers into narratives.

CNF has a few important features that allow it to be very effective for journalists, or anyone who wishes to be stylistic for their nonfiction writing. First, Caulley's essay on this topic encourages scene by scene writing, a method to ensure complex realism sense, detailed yet concise description of actions (Caulley, 2016). The essence of a creative nonfiction essay is scenic details that allow the reader to be transported into a specific moment in time that can

activate similar processes of transportation as observed through fiction. Since CNF essays revolve around fact, much of the details can be easy for the reader to associate with, allowing them to be literally in the mind of the author, which also plays a major role in how empathy is impacted. A second important characteristic of CNF is using realistic detail (Caulley, 2016). CNF uses concrete details to convey emotions through text, a feat that is common with fiction. Through those details, the reader can experience the story at the same level as the author. This could lead to similar levels of transportation and empathy as fiction while still being committed to real life events. With the aforementioned factors that creative writing depends on to be effective, this study will examine if those characteristics are definitive in simulating transportation and impacting empathy in readers on the same level that fiction does.

Studies that examine narrative impacts on empathy support the claim that fiction is better at impacting readers than nonfiction. For example, Bal and Veltkamp (2013) conducted a study to investigate narrative impact on emotional transportation and decided to test this impact by assigning participants to reading either Sherlock Holmes or two stories from a Dutch newspaper. The control condition, the new paper articles, were written based on interviews and eyewitness accounts of the riots in Libya and the nuclear disaster in Japan and were selected on their emotional impact on readers (Bal & Veltkamp, 2013). The study's results concluded that fiction transportation in readers had a stronger influence on empathy in their first study, while transportation did not have as a strong of an influence on empathy after reading. This study raises speculation on how the results would differ if they had also provided participants with CNF essays regarding these emotional events. CNF essay would take advantage of the already impactful situation and add to it imagery, scenic details, and a voice of a person who is experiencing events firsthand. The present study will attempt to replicate Bal and Veltkamp

(2013) but add a creative nonfiction element to the options of narratives to be able to better understand how different genres affect empathy.

Empathy and How it is Affected by Narrative

Empathy has been defined in various ways throughout research concerning its relationship with narratives. In summation, empathy is the ability to allow one's self to experience someone else's feelings. This is not to be confused with sympathy, which is just having concern for others. (Bal & Veltkamp, 2013; Oatley, 2016). Per recent research by Bal and Veltkamp, fiction has more effects on empathy when compared to nonfiction. It is a simulation of social experiences that allows the reader to transport themselves into these situations and into the minds of the characters without any consequence of their reactions towards the story (Bal & Veltkamp, 2013). Essentially, fiction provides a learning experience, much like a 'pilot simulator' would train future pilots for flying jets, fiction can prepare readers for situations they have yet to encounter.

These ideas are also supported by research from Mar and Oatly. They present work that describes fiction as a tool to allow role taking in narratives; a method to conceptualize other people's thoughts and feelings through narrative. This allows readers to become more sensitive and react more emphatically in response to feelings they might not understand (Mar et al., 2005). Koopman (2015) has stated that these findings might be limited by not including a control condition of non-narrative text that apply the same themes as the narrative's studies done by Mar and Oatley. Effects, as Koopman has suggested, might be limited if such controls are presented in studies. This allows for better judgement of differences of narratives on empathy.

The neuroscience of empathy is rather a challenging aspect of neural network that researchers have yet to fully unpack. Still, there is much to be said about how empathy is more like a program than anything. In an analysis by Singer and Lamm (2009), they had explained that just as the brain activates the same neural network in coordinated movement, the same mechanism is at work when a person witnesses another person experiencing an emotion. These mechanisms can be accredited to what is known as mirror neurons, which allow individuals to have the same neural activation without experiencing an event themselves as the other person, pain and emotions, for example (Singer & Lamm, 2009). Experiencing pain can activate a variety of brain areas including the brain stem, bilateral anterior insula, dorsal anterior cingulate cortex, and the cerebellum and someone who is observing someone who is going through pain can have the same brain areas activated (Singer & Lamm, 2009).

While these findings certainly raise a few important points on the importance of narrative implications on empathy, specifically through fiction, why has much of the research showed less effects on empathy from nonfiction narratives? Most research refers to nonfiction as essays, news, scientific journals etc., but fail to elaborate on other subgenres of nonfiction work that could potentially have similar effects on empathy as fiction. This study will explore the differences between creative nonfiction and fiction narratives while maintaining usual nonfiction work that other studies included as a control variable.

The Present Study

The present study has reviewed transportation, genres of narratives, uniqueness of creative nonfiction, and how empathy is impacted by being transported into a story and supporting that information by providing neuroscientific evidence for how narratives can affect our empathy. I hypothesize that the measures of empathy and transportation will not differ in the

creative nonfiction and fiction condition, while the standard nonfiction results will indicate less transportation and empathy in readers.

Method

Design. The results of this study will be analyzed through one-way ANOVA with three levels (CNF, standard nonfiction, and fiction). There will also be follow up tests to observe any connection with empathy and transportation.

Participants. 33 participants were recruited through Allegheny College SONA program that compensates students with SONA credits that are required for most psychology classes. Since the study will last approximately 30 minutes, participants were rewarded 2 credits for volunteering. Students age will vary from 18-22, and sex of students is not important for this study.

Materials. For the fiction group, participants will be asked to read *Caroline's Wedding* by Edwidge Danticat (Appendix A). A fictional story about a family from Haiti and how their father's death has impacted the way they grieve in a new culture. This piece was chosen for fiction because it is by the same author as the creative nonfiction condition, and it involves Haitian culture, as all conditions do. Participants under the standard nonfiction condition will be asked to read a journal article from pri.org titled *A family split between the US and Haiti dread looming loss of legal status* (Appendix B), which tells the story of a family from Haiti following the earthquake in 2010 that devastated their home and country. They were granted temporary protected status but was changed due to the new policies in the new administration after the 2016 election. This news article was chosen because it matches with the Haitian selections of the other

two conditions. In the creative nonfiction condition, participants will be asked to read a chapter from *Brother, I'm Dying* by Edwidge Danticat. The book itself tells the real-life story of the early years of Edwidge and her family and how they ended up in New York. The specific chapter that will be used is titled *One Papa Happy, One Papa Sad* which reflects the struggle of Edwidge's uncle who is trying to send his nieces to their parents who have made their way to the US without their children. The reading material deals with immigration from Haiti to avoid any factors that might lead readers to be more empathetic towards a different population. This study will also be using Green & Brock's transportation scale (2013) (Appendix D), and a 5-question survey adopted from Davis' *A Multidimensional Approach to Individual Differences in Empathy* (1980). (Appendix E).

Procedure. Participants will be recruited from Allegheny College department of Psychology SONA program. Participants are completely anonymous to the researcher and any contact will occur through the program if needed. The participants will choose a time that best fits their schedule from numerous time slots provided by the researcher and will be asked to meet at Carnegie Hall for the experiment. At the research area, the participant will sit in a quiet room and handed the consent form. After they read and sign it and are asked if they have any questions about the consent form, they will be given one of the three reading materials which are randomly assigned prior to the participant's arrival.

Informing the participant of the goal for this experiment would lead them to be more empathetic towards the reading, that is why there will be a minor deception in this study. Instead of informing the reader that they are reading the text to answer questions regarding transportation and empathy, they will be told that they will answer questions regarding the events of the story and to summarize it.

After the participant is finished with the reading, they will be given the transportation questions first. The transportation scale is twelve questions, and when they are satisfied with their answers, they will be handed the empathy scale questions, which contain five items. Once the task is completed, the participant will be debriefed on the study and informed of the minor deception. Any questions they have will be answered and they will be given the opportunity to receive a copy of the results once the study has been concluded. The debriefing form will also contain contact information and other resources if the participant should need them later.

Results

A one-way ANOVA with type of narrative (fiction, creative nonfiction, and standard nonfiction) as the between subject variable and transportation as dependent variable. The main effect of type of narrative on transportation was not significant, $F(2, 30)= 2.10$, $p=0.139$, $\eta 2=0.123$. There was also no significant interaction between the fiction and creative nonfiction variables together, $F(1, 20)= 0.890$, $p=0.007$, $\eta 2=0.310$.

A one-way ANOVA with type of narrative (fiction, creative nonfiction, and standard nonfiction) as the between subject variable and empathy as the dependent variable. The main effect of empathy was not significant, $F(2, 30)= 1.06$, $p=0.359$, $\eta 2=.066$.

A correlation test showed a positive correlation between Transportation and empathy $r=(0.767)$, $P\neq 0.0001$, $R^2=0.58$, $n=33$.

Discussion

In summary, the study found no significant results in narrative type effect on transportation or empathy, but it did find a correlation between the two dependent variables. The hypothesis stated that there will be no difference between creative nonfiction and fiction when compared through transportation and empathy which was not supported by the results, which could largely be due by a variety of factors that will be discussed. There will also be suggested modifications for future studies that examine the effects of narrative type, specifically creative writing and fiction, as they were the focus of this study.

This study found that there was no significance in transportation between the three different types of narratives ($p=0.139$). However, this could be due to lack of participants that did not allow the standard nonfiction, which was the control group, to become evenly distributed. The standard deviation for fiction, creative nonfiction, and standard nonfiction was 6.5, 7.0, and 14.3 respectively. This leads to the conclusion that standard nonfiction readers either were very much transported or nearly not at all. A reason for that variation could be the use of a news article that deals with controversial topics such as politics surrounding immigration issues in the U.S., or it could be that some people were not at all interested in reading a news article of those nature. For example, someone who is heavily involved in politics would have been able to be transported into the article due to the amount of engaging material in it. On the other hand, someone who is not involved in politics would have not reported more transportation.

Excluding standard nonfiction from the data analysis, it is apparent that creative nonfiction readers reported more transportation into the narrative. The study's hypothesis was that the level of transportation would be similar between fiction and creative nonfiction, and this

shows that creative nonfiction narratives are capable of transporting readers more so than fiction. The narratives that were chosen for this study were written by the same author, and thus it follows similar writing styles, narrative technique, and use of characters. The only difference is that the creative nonfiction narrative followed true events about the author's life while the fiction was about made up characters and their dynamics. In order to truly quantify the effect of narrative type on transportation, the study would have required more participants so that the standard deviation of standard nonfiction does not negate the effects of the other two narratives.

In terms of empathy, the results also showed that there was no significant interaction in types of narrative. There were also no significant interactions between any of the variable and standard deviation between the three types of narratives did not appear to abnormal. This could be due to the type of questions that were used for this study. Unlike transportation questions, they were only 5 questions (transportation had 12), and this could have not adequately asked participants enough about the narrative they had read to be able to fully explore the effect on empathy. The questions were selected from a large variety of options, and the ones that dealt with narratives were chosen. Future studies should focus on adding more questions that deal with narrative effect on empathy.

Another reason as to why there would be no significance in narrative type effect on empathy is what the participants were told before reading. All participants were instructed to read the narrative in order to summarize the story to a friend, which meant to guide the reader to be more focused and purposeful with their reading. This could have caused the reader to be disconnected from the reader emotionally in order to focus on the facts and just be able to summarize main points and events. Future studies could find more ways to engage participants in the reading without causing them to emotionally distance themselves from the narrative.

The reading material that was used for this study dealt with large issues such as politics and immigration. It is very plausible that all readers reported that they felt any level of empathy towards any event or character in a narrative. It would be difficult to use texts that have no potential to impact empathy, but it could focus on other themes besides immigration experience, which are largely controversial in the 21st century.

The correlation of empathy and transportation showed that for readers who reported empathy also reported transportation. This result confirms several previous studies that measure the impact of narrative on empathy. The data shows that the more transported a reader is, the stronger the impact on empathy will be.

Future studies should expand on the range of narratives that effectively transport readers thus impacting their empathy more. It is important for authors to know the full extent of the genre they are writing in, especially those who chose to write about traumatic or unique experiences. By limiting the research to fiction's potential in those aspects might discourage writing in that genre as authors may not want to alter the truth of certain events to have the full effect on their audience. However, expanding research to other genres such as creative nonfiction, can inform authors of the impacts of that genre psychologically so that they perfect their craft for that intent. In that regard, they won't have to alter any of the narrative to fit the criteria for fiction. This is not to say that fiction is not a vessel adequate for unique experiences, but the research should not be limited to it as there are hidden potentials in other genres.

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Appendix A.

Caroline's Wedding by Edwidge Danticat is a fiction story that follows an immigrant family from Haiti. The family consists of the mother, mentioned only as Ma in the story, Grace, the narrator, and Caroline. While Grace is the speaker of the story, the events revolve around Caroline and her choice to marry a man from America instead of Haiti as her mom wished for. Grace takes the reader through events that depict the struggle of maintaining cultural traditions and adapting to a new life in a different country.

Appendix B.

A news article from pri.org titled *A family split between the US and Haiti dreads looming loss of legal status* informs the reader of US policy regarding immigrants who needed to escape natural disaster in Haiti. From the 2010 earthquake that had devastated the homes of many, a family had been granted Temporary Protected Status (TPS) in 1990 with possible renewal. With the new Trump administration, however, the TPS status has been lifted with the notion that countries who had been granted TPS status are ready to receive their citizens.

Appendix C.

A book by Edwidge Danticat titled *Brother, I'm Dying* tells the story of Edwidge and her siblings trying to make ends meet to reunite with their parents in New York. They are not alone, however, as their uncle has taken them under his wing and is trying to do his best to help the children get to their parents. What will be provided is only a chapter (title of chapter is *One Papa Happy, One Papa Sad*) but it offers a unique perspective of family relationships and their challenges.

Appendix D.

Circle the number under each question that best represents your opinion about the narrative you just read.

1. While I was reading the narrative, I could easily picture the events in it taking place.

   1 2 3 4 5 6 7

   Not at all very much

2. While I was reading the narrative, activity going on in the room around me was on my mind.

   1 2 3 4 5 6 7

   Not at all very much

3. I could picture myself in the scene of the events described in the narrative.

   1 2 3 4 5 6 7

   Not at all very much

4. I was mentally involved in the narrative while reading it.

   1 2 3 4 5 6 7

   Not at all very much

5. AFter the narrative ended, I found it easy to put it out of my mind.

   1 2 3 4 5 6 7

   Not at all very much

6. I wanted to learn how the narrative ended.

   1 2 3 4 5 6 7

   Not at all very much

7. The narrative affected me emotionally.

1	2	3	4	5	6	7
Not at all						very much

8. I found myself thinking of ways the narrative could have turned out differently.

1	2	3	4	5	6	7
Not at all						very much

9. I found my mind wandering while reading the narrative.

1	2	3	4	5	6	7
Not at all						very much

10. The events in the narrative are relevant to my everyday life.

1	2	3	4	5	6	7
Not at all						very much

11. The events in the narrative have changed my life.

1	2	3	4	5	6	7
Not at all						very much

12. I had a vivid mental image of (character's name).

1	2	3	4	5	6	7
Not at all						very much

Citation: Green, M.C., & Brock, T.C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology, 79(5).* 701-721.

Appendix E.

Please answer the following questions on a 1-5 basis. (1 strongly disagree, 5 strongly agree). (SNF)

1. After reading the story, I have felt as though I were one of the characters

   1 2 3 4 5

2. I really got involved with the feelings of the character in the novel.

   1 2 3 4 5

3. When I'm reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

   1 2 3 4 5

4. I related to (character's name) in this story and was able to understand their perspective.

   1 2 3 4 5

5. While I did not relate to (character's name), I was still able to feel empathy for them.

1 2 3 4 5