

EFFECTS OF DIFFERENT MEDIA FORMS AND TEXT STRUCTURE ON  
ATTITUDE CHANGE AND COMPREHENSION OF A SOCIAL ISSUE:  
STRUCTURAL INEQUALITY IN THE GLOBAL ECONOMY

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A Thesis

Presented

to the Faculty of

California State University, Chico

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Interdisciplinary Studies:  
International Cognitive Visualization

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by

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Summer 2016

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## DEDICATION

I would like to dedicate this work to my family for their constant support and encouragement as I have pursued my academic endeavors. You have given me confidence to go forth, and courage to take the unique and adventurous opportunities, which have been presented to me along the way. In these pursuits, I am forever grateful that you gave me room to grow and time to find my path without pressure, thank you.

## ACKNOWLEDGEMENTS

I would like to thank the entire Learning, Cognition & Instruction Research Lab. During the 2015-2016 academic school year, each member of the lab was supportive and enthusiastic about my research. Their assistance in this project was invaluable to me.

An additional thank-you is warranted to Neil Jacobson, Anna Bartel, and Janina Lehmann. Thank you for your advice, support, assistance, and reassurance throughout this year. Each of you steadied me along the way.

I would like to thank Dr. Neil Schwartz, Dr. Wolfgang Schnotz and Dr. Linda Kline, for being a part of my thesis committee, and for so kindly making adjustments to their schedules to attend my thesis defense.

I would like to thank Dr. Neil Schwartz, Dr. Wolfgang Schnotz, and Dr. Erica de Vries for sharing their scholarly and research expertise with me over the span of my graduate studies. In particular, I would like to thank Dr. Schwartz, who has tirelessly supported me in this current research project. I would like to thank him especially for his efforts in crafting what started as just a dream—the International Cognitive Visualization graduate program, and turning into a reality. This program has allowed me one of the greatest growing experiences of my life—embedding myself in Europe for a year, and the program has also given me the opportunity to pursue my graduate studies goal of learning

good research—not a small feat. Lastly, Dr. Schwartz, I appreciate your gift and drive to both teach and mentor. These practices truly flow from you naturally and effortlessly.

Lastly, I would be remiss to not thank my original cohort colleagues, Julia Belger and Stella Panova, who started this process with me. We started this journey together, we dreamed some dreams, conquered some challenges, and ultimately, we each successfully found our own path. I spent the year missing you.

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## ABSTRACT

### EFFECTS OF DIFFERENT MEDIA FORMS AND TEXT STRUCTURE ON ATTITUDE CHANGE AND COMPREHENSION OF A SOCIAL ISSUE: STRUCTURAL INEQUALITY IN THE GLOBAL ECONOMY

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Summer 2016

Research has separately shown the effect of different rhetorical text structures, and visual presence within multimedia, to increase learning outcomes. However, the interaction between these two factors has not been studied. Likewise, these two factors, rhetorical text structure and visual presence, have not been studied for their effect on attitudes nor reactions on media presentation. This study aimed to examine the interaction between rhetorical text structure and visual presence on recall, attitude change, and reactions towards a media presentation. Four media presentations were created with two identical rhetorical text structures, problem-solution and narration, for the commentary, and either with visuals present or visuals absent. The resulting media forms including narration documentary, problem-solution documentary, narration podcast, and problem-

solution podcast were all about a social topic: “Structural Inequality in the Global Economy.”

Participants, 137 recruited through Amazon Mechanical Turk, were presented one media presentation. Recall was measured through a free recall task. Attitude change was assessed using the Implicit Association Test (IAT). Media reactions were measured on a 5-point Likert scale for affinity of the media and other would-be behavioral actions.

It was predicted that the narrative text-structure in both media forms and visuals in the documentary would have greater influence on recall, attitude change, and media reactions. Results indicated that narration was better for recall, but largely there were no other effects in these interaction analyses. However, results did indicate that there was an attitude affect across all media forms. Results also indicated that in some media presentations, recall could be predicted by one or more of these variables: prior knowledge, social dominance, intent to search for more information related to the media presentation. Thus, some of these results have practical implications in the area of educational media.

## CHAPTER I

### INTRODUCTION

#### Background

Several researchers have developed text analysis techniques (Meyer, 1975a; Meyer, 1975b; van Dijk, 1979; Mann & Thompson, 1988; Thorndyke, 1997; Stein & Glenn, 1975), from which a number of rhetorical text structures have been identified. These structures have been studied for their influence on learning outcomes (Meyer & Freedle, 1984; Meyer, 2003; Meyer, 2011), and narration text structure has been found to increase recall and comprehension better than other rhetorical text structures (Sahin, 2013; Best, Floyd, & McNamara, 2008; Olson, 1985; Englert & Hiebert 1984). At the same time, research in multimedia learning has shown that when varying visual displays accompany text (i.e., pictures, graphics, drawings, animations, videos), recall and comprehension are beneficially influenced, as well (Mayer & Anderson, 1992; Mayer, 2002). And yet, an examination of rhetorical text structure, in the presence of visual displays, has received no empirical attention. Thus, the present investigation was designed to examine these variables together.

Despite the consistent finding that narration text structure and the presence of visual displays each independently influence comprehension and recall, three issues are unknown. First, it is unclear as to which of the two factors will increase learning when the factors are combined, since text structures have not been examined in the presence of visual content. Second, beyond learning as a performance outcome, it would be beneficial

to understand their effect on attitudes and media reactions. Third, there are issues in how visuals and text have been combined in previous research.

#### Issues in Text Structure and Multimedia

The first issue addresses the fact that both rhetorical text structure and varying visual types have simply not been examined together for their effects in learning. This is important because, as the use of technology (Bitter, & Pierson, 2001) and different forms of multimedia (Gotsick, & Gotsick, 1996; Fan, & Orey, 2001) continue to increase in classroom settings, it would be valuable to determine which type of multimedia formats might be more beneficial than others for learning.

Second, it is unclear whether the combination of rhetorical text structure and the presence of visual displays can influence more than what people comprehend and remember from the combination of the two. That is, changes in attitudes are important outcomes to measure as well, and there is evidence that text and visual displays each independently influence peoples' attitudes. For example, argumentative statements have been effective in changing people's attitudes towards the prohibition of alcohol—a controversial topic in the 1950s, (Hovland, Harvey, & Sherif, 1957). Persuasive texts have been effective in changing attitudes towards global warming (Sinatra, Kardash, Taasobshirazi & Lombardi, 2013). Likewise, in the area of communication studies, a number of separate text features have been found to be effective in changing attitudes. These text factors include: message 'sidedness'—that is, presenting one or both sides of an argument in a text (Allen, 1998; O'Keefe, 1999), the presence of conclusions drawn by the author at the end of an argument (O'Keefe, 1997), and the presentation of evidence within a text, such as case studies, (Morley & Walker, 1987). Even text that appeals to a

reader's fear (Finckenauer, 1982; Robertson et al., 1974) and guilt (Basil, Ridgway, & Basil, 2008) has been shown to change attitudes, as well.

As for the potential of visual displays in changing attitudes, visual material within traditional course instruction has been found to engender positive attitudes towards addressing the problem of global warming (Bozdogan, 2011); animations have reduced student's negative attitudes towards physics (Zahorec, Haskova & Bilek, 2016); and, graphics have been used to increase negative attitudes towards smoking (Kees, Burton, Andrews, & Kozup, 2006).

It is also important to consider the societal impact of the attitudes that can be changed. For example, changing attitudes toward gender roles (Glick & Fiske, 1996) can impact women's success in the work force (Eagly, 2005; Fortin, 2005). Changing attitudes is important in influencing society's acceptance of important policy changes, such as health policies (Magor Blatch, & Rugendyke, 2016), and energy policies in the reduction of pollution (Owens, & Driffill, 2008; Tjernström, & Tietenberg, 2008). Attitude change has also been demonstrated to influence the desire for volunteers to serve their community (Omoto & Synder, 1995), exercise behavior (Wong, 2016), and the way people interpret a romantic relationship (Wilson & Kraft, 1993).

The third issue addresses the way text and visual displays have been combined for empirical study—specifically, the way the two sources are characterized as media. Most research using text and visual displays have been conducted in the domain of education (cf. Mayer, 2002; Schnotz, 2005), with text presented in written form or as an auditory presentation where the text is spoken. Research on text and visual displays reveals that the combination of text and visual displays have reduced extraneous

processing (Mayer, Hegarty, Mayer, & Campbell, 2005), increased patients' attention towards health education (Houts, Doak, Doak, & Loscalzo, 2006), and helped students learn how DNA is replicated (Sab, Wittwer, Senkbeil, & Koller, 2011). Alternatively, research in the domain of visual displays has also demonstrated a number of effects when text is presented as an auditory presentation with graphics. Research has demonstrated that spoken text guides a viewer's attention to pertinent visual information (Pozzer-Ardenghi & Roth, 2005; Huettig & Altmann, 2005; Glaser, & Schwan, 2015); and, spoken text, (i.e. verbal signaling), increases learning with visuals more than visual text alone.

#### Auditory and Visual Processing

According to Schnotz (2005), the presentation of auditory information and visual information together result in better learning, because these two forms of information are processed separately in two different channels within the cognitive system—in the auditory working memory and spatial working memory. Working memory is the conceptual channel in the cognitive system with which information is represented and manipulated (Baddeley, 1986; 1999). However, each working memory type is limited to what it can process at one time (Baddeley, 1986; 1992; 2001). Thus, when displays include auditory and visual information, it is especially useful, because these two channels, the visual working memory and verbal working memory, can be used simultaneously to hold information. Therein, when information is presented separately in auditory and visual form, learners are able to represent more information in their cognitive system at one time. Finally, according to Schnotz (2005), the two resulting mental representations with each working memory channel interact in mental model

construction and model inspection. Therein, for this study, we intended to accomplish this in the media forms we employed, by presenting text audibly with still images and video clips.

### Importance of Rhetorical Text Structure

Texts are used in a plethora of contexts (van Dijk, 1980), including visual text within course textbooks (Anderberg, 2014) and magazine articles (Tenopir, & Evena Shu, 1989). Audio texts can also be found in course lectures (Ebert-May, Brewer, & Allred, 1997; Heaney, 1989), in full-length feature films (Mernit, 2001) and television product advertisements (Ansolabehere et al., 1999). Given the ubiquity of text, as visually printed and audibly spoken, it is valuable to examine texts' varying types (Meyer, 1975), to determine their potential effects on learning outcomes (Sahin, 2013), and attitude change (O'Keefe, 1997). One such factor associated with text type pertains to a text's structure.

A number of text analysis techniques have been developed to analyze text structure (Meyer, 1975a; Meyer, 1975b; van Dijk, 1979; Mann & Thompson, 1988; Thorndyke, 1997; Stein & Glenn, 1975)—specifically, Meyer's (1975) technique for identifying a text's *rhetorical* structure, a technique derived from Grimes (1974) case grammar. According to Meyer (1975), rhetorical text structure is identified by the relationships that exist between text segments within a larger text. For example, *causation* rhetorical text structure conveys an underlying semantic structure of a text where a problem and the cause of that problem are identified.

This rhetorical text structure analysis technique (Meyer, 1975) is used to distinguish text at the micro—detail text structure level, and macro—main idea text structure levels. Research has determined that information at the macro level of a text is

remembered better than information at the micro level (Meyer, 1975); thus, text analysis techniques have focused on the macro level structures. In total, all texts can be distilled down to five overarching macro structures: *description*, *comparison*, *collection* (i.e. *narration*), *response* (i.e. *problem-solution*) and *causation* (Meyer 1975; 1985, Meyer & Freedle, 1984). Research has further shown that these texts vary in amount of structure (Meyer, 2011), and that the more structured a text is, the better learning outcomes the text will yield (Meyer & Freedle, 1984; Smith & Hahn, 1989; Kintsch & Yarborough, 1982). For example, *collection* is less effective in learning outcomes than *causation* (Meyer & Freedle, 1984) and *problem-solution* (Sanders & Noordman, 2000; Spooren, Mulder, & Hoeken, 1998)—two texts that are considered more structured than collection.

Alternatively, *narration* is more effective for learning outcomes when compared to expository text for college students (Best, Floyd, McNamara, 2008) and for children in the third-grade (Olson, 1985). Likewise, children understand narration text better than informational text (Sahin, 2013) and prefer narrative text to informational text (Chapman, Filipenko, McTavish, & Shapiro, 2007). Additionally, children perform better on a judgment task with narration text structure compared to problem-solution text structure (Englert & Hiebert, 1984). Indeed, the rhetorical structure of narration is truly ubiquitous across human cultures (Kress, 2005), and the learning effect of narration text is attributed to the exposure people receive from narration at a young age (Zabrucky & Johnson, 2011). Thus, with a well-established narrative schema derived from text structure that is rhetorically narrative, text is easier to encode, understand, and remember.

It is important to underscore that text has been shown to change attitudes (Hovland, Harvey, & Sherif, 1957, Sinatra, Kardash, Taasobshirazi & Lombardi, 2013;

Allen, 1998; O'Keefe, 1999; & Walker, 1987; Finckenaer, 1982; Robertson et al., 1974; Basil, Ridgway, & Basil, 2008). More importantly for our purpose in this investigation, narratives have been shown to increase attitude change, as well (Taylor & Thompson, 1982). However, narrative texts have not been specifically studied in attitude change (Mayer, 1975), nor compared to another rhetorical text structure type to change attitudes. Likewise, the effect of rhetorical text structure on learning has not been examined across varying visual presence. There is also a dearth of research showing rhetorical text structure's effect on media reactions.

#### Importance of Visual Displays

Similarly to text, visual displays are ubiquitous in current culture as well; and with the advent of computers, there has been a virtual explosion of visual content (Najjar, 1996). In fact, visual displays can be found in numerous places, from educational textbooks (Anderberg, 2014), and health education material (Houts, Doak, Doak, & Loscalzo, 2006) to educational simulation games (Mayer, 2002). Visual displays also come in many forms, including pictures, diagrams, geographical maps, and animations (Schnotz, 2002). Interestingly, visual displays have also been shown to have a number of broad effects. These effects include the use of animal experimentation videos to elicit the emotion of disgust (Nabi, 1998), and viewing people at certain camera angles eliciting unconscious judgments (Mandell, & Shaw, 1973). Alternatively, visuals have been used in a more positive effect by inspiring artistic writing in a writing workshop (Bailey, 1995).

Visual displays, as an addition to text, have largely been shown to be beneficial in learning (Mayer & Anderson, 1991; Mayer & Anderson, 1992; Rieber,

1990). This finding is explained by the *multimedia principle*—that, in learning environments, pictures and words together are better than words alone (Mayer, 2002). Broadly, visual displays have been used in training materials (Clark & Lyons, 2010) or to present procedural processes in instructions in item assembly (Marcus, Cooper, & Sweller, 1996). Likewise, visual displays, in the form of video, have been used for educational purposes. For example, videos have been used to increase awareness of issues that exist in multicultural environments (Ross, Kumagai, Joiner, & Lyson, 2011), and visuals in television news have helped people learn the content of a broadcast (Graber, 1990). Likewise, video has been used to teach physics principles (Laws, Willis, Jackson, 2015) and concepts of social justice, such as using educational material to reduce people's held misunderstandings regarding the AIDS epidemic in Africa, and drug guerrillas in Colombia (Lui, Unger, Scullion, 2014). And yet, this consistent effect of visual displays for learning has not been examined across specific types of text structure types for its effect on learning.

As for their influence on attitudes, visual displays have been present in media when attitudes, or related concepts, have been changed. Media with visuals have changed individuals' perspectives towards women (Kang, 1997) and individuals' values toward crime (Welsh, Fleming, & Dowler, 2001). Specifically for attitudes, movies have been used to change attitudes towards the death penalty (McHale, 2007), and positive attitudes have been engendered towards the dealing with global warming when visuals were present in traditional instructors (Bozdogan, 2011). Similarly, students' negative attitudes towards natural sciences have also been reduced when visuals were present in multimedia material (Zahorec, Haskova & Bilek, 2016). However, visual's effect on attitude change

has not been contrasted with the absence of visuals. Likewise, it would be important to understand rhetorical text structures' effect on attitude change, thus text in the absence of visuals.

### Importance of Media Forms

In the present study, we chose to investigate text and visual displays in the form of a documentary; and, we did so for two reasons: One, documentaries typically deal with issues relevant to social issues, since documentaries are often used as vehicles of persuasion (Nichols, 1991; Meng, 2015). In the epistemological domain of communication, the purpose of persuasion is to change people's attitudes (Petty & Cacioppo, 1986; Petty, Cacioppo, Strathman, & Priester, 2005; Perloff, 2010; Bettinghaus & Cody, 1987). Thus, documentary media provides a form in which to showcase a real social issue, providing a legitimate circumstance in which to measure attitude change.

The second reason we chose to use a documentary format is because documentaries are often shown within mainstream entertainment venues—Netflix, Amazon Prime, HBO, etc.—therein reaching large audiences consisting principally of adults (DeCesare, 2014), well beyond educational settings, per se (Steiner, 2015). Thus, taken together, the focus on attitude change in the context of social issues, and the potential to reach large audiences renders documentaries a sensible format for testing the potential effects of rhetorical text structure with and without visual displays. Indeed, as defined in documentary film theory, documentaries contain the two factors that the current investigation set out to manipulate, text and visuals (Nichols, 1991). Thus, the

documentary format permits an examination of the effect of rhetorical text structure with and without visual displays, in a context with high external validity.

By comparison, we determined to contrast the visual presence in documentaries with visual absence in podcasts. Within the epistemological area of broadcast media, podcasts are defined loosely as ‘audios’ and as being related to radio (Hilmes, 2016). Like documentaries, podcasts have been used to persuade an audience of a given argument, such as the ease with which it is to learn a second language (Basaran & Cabaroglu, 2014), and are thus able to change a people’s attitudes towards a topic (Petty & Cacioppo, 1986; Petty, Cacioppo, Strathman, & Priester, 2005; Perloff, 2010).

#### Importance of the Social Issue

Next, we chose a social issue to serve as the context within which to examine rhetorical structure and the presence of visual displays in a documentary and podcast—specifically, structural inequality in the global economy. We did so because this issue deals directly with abject poverty in developing countries perpetuated by structural inequalities that exist in the global economic system (Vraga, 2014; Malcolm Clark, 2013; The Film Archives, 2013; Freidman, 2007; Smith, 1997; Dabla-Norris et al., 2015; Karabarbounis & Neiman, 2007)—inequalities that exist between groups of people, which are held in place and perpetuated by economic systems in society (Dani & de Haan, 2008). An example of structural inequality in the global economic system is the structural divisions of labor that have existed between developing countries and developed countries for decades (Mahugta, 2006). Likewise, it was also discovered that the *World Economic Forum* (2015) had designated income inequality, a result of structural inequality in the global economy, as a societal risk. Furthermore, the *World*

*Economic Forum* designated income inequality as the societal risk with the greatest correlation to societal instability. Thus, the issue of global economic structural inequalities was deemed as an important social topic, since the inequalities are perpetually sustained in the current economic system, and have the potential to engender further societal problems. More importantly, it is a legitimate social issue with which to observe change in people's attitudes—if rhetorical structure and the presence of visual displays can have an effect.

#### Importance of Media Reactions

Finally, there is no published research examining the effects of rhetorical text structures on people's reactions to media. Similarly, effects of visual displays on media reactions have been examined sparsely within empirical research. Visuals within a media presentation have been found to affect affinity—that is, the degree to which one is attracted to or likes a media presentation. Research has shown that people enjoy multimedia within textbooks (Bosco, 1986) and interactive videos (Bryant, Brown, Silberberg, & Elliot, 1980). Likewise, children favor books that have pictures (Brookshire, Scharff, & Moses, 2002), and older students prefer lecture presentations with more pictures than text (Levie, & Lentz, 1982). However, there is no evidence for the effect of visual displays on sharing the media presentation and searching for more information.

These media reactions are deemed important because liking a media presentation has been shown to increase deep comprehension of the material (Schiefele, 1991), and to increase individuals' motivation to learn (f). Also, the desire to search for more information related to a media topic could be influential in increasing the

knowledge of the person who was exposed to the media presentation. Likewise, an individual's desire to share the media presentation has the potential to increase the public's attitudes on the topic via social media sharing (Purcell, Rainie, Mitchell, Rosenstiel, & Olmstead, 2010). Thus, if media presentations are then shared widely, they also have the potential to broadly change the public's attitudes towards the topic of the media because of their use of visuals (Bozdogan, 2011; Zahorec, Haskova & Bilek, 2016) and their use of varying text (Hovland, Harvey, & Sherif, 1957; Taylor & Thompson, 1982).

#### The Present Investigation

In the present study, we used identical material that varied in two key factors, visual presence and rhetorical text structure. For visual presence, media presentations were varied for visuals across two levels, visual presence in documentaries and visual absence in podcast. For the rhetorical text structure, the media commentary was also varied across levels, narration and problem-solution. Thus, one of each media type contained a narration text structure and a problem-solution text structure. This resulted in four media presentations: narration documentary, problem-solution documentary, narration podcast, and problem-solution podcast.

To measure the effect of the media presentation on attitude change, implicit attitudes were measured with an Implicit Association Test (IAT) task before and after the media presentation. Also, before the media presentation, prior knowledge of the social issue topic was measured. After the media presentation, learning was measured with a free recall task. Next, participants were asked to indicate on a 5-point Likert scale their

reactions towards the media, including their media affinity, sharing desire, sharing intention, searching desire, and searching intent. Lastly, participants completed a measure of their social dominance orientation.

### Experimental Predictions

We predicted that narration rhetorical text structure would have a higher effect on recall compared to the problem-solution rhetorical text structure based on previous research indicating that narration text structures have a superior effect on learning outcomes over other text structure forms (Sahin, 2013; Best, Floyd, & McNamara, 2008; Olson, 1985; Englert & Hiebert 1984). We also predicted that visual presence would have a greater effect on recall compared to visual absence based on multimedia research. In multimedia research, the *multimedia principle* has been established, which states learning is better when words and pictures are presented together than when words are presented alone (Mayer & Anderson, 1991; Mayer & Anderson, 1992; Rieber, 1990; Mayer, 2002; Clark & Lyons, 2010; Marcus, Cooper, & Sweller, 1996).

For the combination of the two factors, rhetorical text structure and visual presence, we expected that recall would be lowest in the problem-solution podcast media presentation compared to the other three media presentations. We based this expectation on the finding revealing that narration text structure has a better effect on recall than other text structures (c.f. Best, Floyd, McNamara, 2008), and that visuals are beneficial in learning environments (c.f. Mayer, & Anderson, 1992; Mayer, 2002). Thus, since the problem-solution podcast lacks both of these elements, we predicted recall would be the lowest in this media form compared to the other media presentations.

We expected that each of the five media reactions (affinity, sharing desire, sharing intent, searching desire, searching intent) and social dominance would be predictors of recall. We predicted that increased media reactions would increase recall. In predicting this relationship, we considered media reactions as an indicator of interest in the media presentations, and thus, this predication was based on the research showing that interest in a topic is related to learning outcomes of that topic (Schiefele, & Krapp, 1996; Renninger, Hidi, & Krapp, 2014). Also, based on this same research, we predicted that higher levels of social dominance would decrease recall, given that those high in social dominance would not be interested in a media presentation about the inequalities between social groups (Pratto et al., 1994).

We expect that attitude change would be increased by narrative text structure since narratives have been shown to change attitudes (Taylor & Thompson, 1982). We also expected that visual presence in the documentary media form would increase attitude change based on research that indicates attitude change has occurred with the presentation of visual material (Bozdogan, 2011; Kees, Burton, Andrews, & Kozup, 2006).

Thus, across the combination of rhetorical text structure and visual presence, attitude change is predicted to increase with the media forms that contain narration text structure and in the presence of visuals. Therein, we predicted that attitude change would be the lowest in the problem-solution podcast, compared to the other three media forms, given that this media presentation lacked narration text structure and visuals,

Given that media reactions have not been examined across rhetorical text structure, we relied on the effects of rhetorical text structure on recall and attitude change,

to predict that the narration text structure would increase media reactions. We also predicted that visuals would increase media reactions, since visuals had been at least been able to increase affinity media presentations (Bryant, Brown, Silberberg, & Elliot, 1980 Brookshire, Scharff, & Moses, 2002 Levie, & Lentz, 1982), and again, we relied on the former predictions to predict that visuals would also increase reactions to searching for more information and share the media presentations.

Finally, since we predicted that narration rhetorical text structure and visual presences would increase media reactions separately, we expected that media reactions would be the lowest in the problem-solution podcast since it would lack narration rhetorical text structure and visuals.

## CHAPTER II

### LITERATURE REVIEW

#### Introduction

Given the plethora of societal issues and social problems in our society today (Vraga, 2014; Freidman, 2007; Mahutga, 2006; Rocca, 2011), we broadly wanted to determine which media presentations would be the most beneficiary in teaching people about, and changing their attitudes towards a social issue. Likewise, we wanted to determine those media forms that would cause people to search for more information—given the advent of Internet searching and self-teaching (Sveum, 2010). We also wanted to determine the media form that would be more likely to increase people’s desire to share the media presentation, given the rise of social media sharing and different types of media going “viral” on the Internet—therein reaching large segments of our society (Harvey, 2015).

This present study was formed to accomplish this goal by examining two main factors of all media presentations—visual content and verbal content. Therein, we set out to examine text structures, as implemented in the commentary of the media, and visuals as used in a video for a documentary media presentation compared to visual absence in podcasts.

This study set out to support previous research, especially in the two research areas of multimedia learning (Mayer, 2002) and rhetorical text structure (Meyer, 1975). We determined to accomplish this goal by examining the interaction between these two

dimensions across two levels each with text structure, narration and problem-solution, and visual presence, visuals present and visual absent.

Therein, for this literature review, each related research area and each major methodological element utilized in this study have each been examined, defined, and outlined below.

#### Social issue: Economic Structural Inequality

The content of the media was based on structural inequality that exists in the economy on the global scale, which is an important social issue. In recent history, the proponents of the *Occupy Wall Street* movement have protested against financial inequality that exists between the rich and the poor in the United States (Vraga, 2014). They have cited that, in the United States, wealth has increased but that wealth has only gone into the hands of the few. Meanwhile the majority of the world's population has not grown financially, and poverty has increased (Freidman, 2007).

While this inequality may be a disappointing reality within the United States, this problem is tragically reflected on a global scale to a much larger extent. As some have considered the financial disparity in the United States shocking, they will find that economic inequality is just as distinct between developed and developing countries (Mahutga, 2006).

In fact, one of the greatest proponents highlighting such economic inequalities and social injustices has been Pope Francis (Rocca, 2011). He has been reported as saying he was "against the structural causes of poverty, inequality, the lack of work, land and shelter, the denial of social and labor rights," and confronting what he called the

"empire of money" (Rocca, 2011). Likewise, Joseph Stiglitz the former chairperson of the council of Economic Advisors for President Bill Clinton, and former chief economist of the World Bank, has also highlighted the income inequality that is increasing in countries and between countries (Clark, 2013). In a *New York Times* article, Porter analyzed income levels over the last few decades in dozens of countries, concluding that the "share of income going to workers has been declining around the world" (Porter, 2014).

Economic inequality is extensive. In 2000, the top wealthiest 1% of the world's population had more wealth than 95% of the population combined (Smith, 1997). Additionally, the economic inequality that exists between countries is also severe. Frieden (2007) has also painted a similar picture with a few comparative statistics. Developed countries average income is found to be seven times that of the average income in a developing country. In the United States, the average individual assets are 100 times larger than those of the average individual African person's assets (Frieden, 2007). Additional evidence not only points out the severe disparity between the rich and the poor, but also that this disparity is increasing. In 2007, 150 of the richest individuals owned more than half of the entire world's wealth (Frieden, 2007), but then as recent as 2016, the number of individuals who own half of the world's wealth has decreased to only 62 individuals ("62 people own same as half world | Oxfam GB," 2011). To frame this problem differently, Stiglitz stated "money has often moved from the poor countries to the rich countries" (The Film Archives, 2013).

It is believed by some that if all countries converted to a completely open global economy system, getting rid of all trade barriers, these countries would be bettering their

chances of economic success (Wade, 2004). It is believed that all countries would have an equal chance at economic success and ultimately all countries would benefit (Wade, 2004). Joseph Stiglitz has a “hope that everyone would be better off,” but globalization has had different effects, some countries benefiting and some countries not. It can effect the “divergence between countries” where “globalization [plays] a role in the success and the failure” of their economy (Clark, 2013). Wade states that “country mobility up the income/wealth hierarchy is [no longer] constrained by the structure” and that the “rich country-poor country divide is being eroded” (2004, p. 567). However, this has not been the case, and rather globalization creates varying forms of structural inequality (Mahutga, 2006).

In fact, Mahutga examined international trade from 1960 to 2000, finding what he called “new division of labor” (2006). He found that this new division of labor had the same overall structure of divisions as in the world economy. Mahutga states that the “structure of the world economy creates international inequality” (p. 1864). He showed that the core countries that dominated during the industrial revolution as manufactures are now dominating periphery countries, but this time through the growth of technology (Dabla-Norris, 2015). Where core countries used to be manufacturers and periphery countries suppliers of raw goods, now, those periphery countries have moved into the role of manufacturing, entailing a type of equalizing with the countries that once dominated manufacturing. However, as periphery countries have become manufactures, core countries have progressed even further up the economic hierarchy structure by the creation of more sophisticated technology, thus again giving them an upper hand economically over the periphery countries (Smith, 1997). A persisting trade structure

created distinct hierarchical levels and trade patterns between countries, with some countries at the core of the global economic system and others at the periphery (Lee Nielsen, & Alderson, 2007). In conclusion, Mahutga states that there is a “continuous hierarchical nature of the world economy” (2006, p. 1882).

The trade agreements creators believed that globally open trade would benefit every country that participated (Wade, 2004). In fact, those who proposed the North American Free Trade Agreement (NAFTA) between the United States, Canada, and Mexico, believed it would benefit Mexico, which had the weakest economy of the time (Clark, 2013). However, income disparity has been a growing between the US and Mexico since NAFTA was created (Clark, 2013). This can be blamed on the concentration of exports that have occurred from one country over another (Lee, Nielsen, & Alderson, 2007). Stiglitz points out that free trade agreements such as NAFTA are often not free, but created to benefit corporate interests, thus benefiting those that are indeed already rich (Clark, 2013).

Of course, there are additional factors to the severe economic inequalities in the global economy, such as internal government issues. While wealth is increasing in some developing nations, it is unequal within its borders, and ironically the system of taxing, which is said to remedy this problem is failing (World Economic Forum, 2015). In fact, inequalities within countries is said to be their greatest threat because it makes them unprepared for other potential problems, such as economic shock, natural disasters, or any other unplanned economic needs (Anderson, 2015). Illicit financial flows, which is money that illegally leaves a country without being taxed, is an example of what causes governments to constantly have inadequate financial resources (Integrity, 2014). Because

the money is not taxed, it will not return to feed the country's economic interests. In 2012 alone, illicit financial flows were over 900 billion dollars from numerous countries combined. Devastatingly, HIV has increased in developing countries pointing to the financial disparity between countries. In North America, 920,000 people have been infected with HIV, compared to 25.3 million in sub-Saharan Africa alone, which has been blamed on the "neoliberal economic policies," (Parker, 2002). Lack of taxation and state tax systems has been a cause of perpetual inequality in that governments are not able to provide social services to its population nor create a sustainable economy, and rather they rely on external aid from developed countries (Dani, 2008).

Financial disparities are vast and millions are suffering from having little financial resources, but not only are people suffering currently, these financial disparities have had long-lasting negative impacts. In the years from 2012 to 2014, income disparity was listed as the top Global Risk (World Economic Forum, 2015). In the 2015 Global Risk report by the World Economic Forum, not only was income disparity again listed as one of the largest global risks, it had the largest relation to profound social instability. The World Economic forum has also reported that widening income disparity is associated with "fragile economic growth" (World Economic Forum, 2015).

The International Monetary Fund (IMF) has reported similar findings (Dabla-Norris, 2015). Based on a report from the IMF, it is "[estimated] that a one percentage point increase in the income share of the top 20% will drag down growth by 0.08 percentage points over five years, while a rise in the income share of the bottom 20% actually boosts growth" Dabla-Norris, 2015, p. 7). Thus, financial inequalities have additional consequences. Not only does it stagnate and decrease economic growth, it

makes the economy unstable and not sustainable (World Economic Forum, 2015).

Therein, such disparities lead to further financial disparities that become increasingly difficult to combat. It also leads to poor governments that are unable to support or invest in the middle class (Integrity, 2014). These countries, therefore, lack public education or public healthcare (Dani, 2008). In sum, these effects internally for individual countries can thus affect global economic growth and potentially conflicts will have international effects, leading to further consequences from the base problem of financial inequality (Dabla-Norris, 2015).

There is evidence of severe financial inequality and an increase of these disparities (Frieden, 2007; “62 people own same as half world | Oxfam GB,” 2011). Likewise, there are internal governmental reasons for this disparity within countries (Integrity, 2014), as well as external causes, such as international trade (Clark, 2013). Financial inequality can be considered a type of structural inequality. Dani has defined structural inequality as the persistent disadvantages or inferior status attributed to a category of people, on the basis of gender, ethnicity, or culture differences, that are systematically held in place and perpetuated with by “unequal relations in roles, functions, decision rights, and opportunities” (2008, p. 3; p. 13). Thus, this is a kind of systemic inequality that is near impossible for underprivileged groups to oppose, and they are forced to stay in their current circumstances with no ability to change them. Classic examples of structural inequality include caste systems used in various countries or regions, in which categories of people are put in specific societal roles (Dani, 2008), and neighborhood structural inequality in which poverty is often found to be concentrated in certain neighborhoods and often leads to negative behavioral problems from youth that

then makes them less successful and more likely to live in poverty (Browning, Burrington, Leventhal, & Brooks-Gunn, 2008).

### Social Change from Media Presentations

Given that numerous social issues exist and that they can have perpetuating negative effects, it is worthwhile to examine how best to inform the public on and potentially change their attitudes towards these issues when necessary. With the advent of the Internet, smartphones, and popular sites with video uploading and streaming capabilities, it is no wonder there is an exponential increase in the amount of varying types of media and that they are exhibited before broad audiences (Reagan, 2007). It is suggested that the Internet, and the plethora of information that can be gained from it, has the potential to be utilized to ignite and drive a grassroots movement (Reagan, 2007).

Historically, different forms of communication have had significant social influence. For example, *Uncle Tom's Cabin* is considered to be one of the most important components that ignited the growing anti-slavery sentiment that led to the U.S. Civil War (Green & Brock, 2005). Or take for example, the infamous occurrence of societal anxiety that was ignited from the fictional radio story, *War of the Worlds*, that was taken as truth (Hayes, & Battles, 2011). Or take for example the footage of Tiananmen Square that informed the outside world of the massacre that was occurring in Beijing (Aitken, 2015). These scenarios point to the ability of media to greatly inform a society. Recently, it can be argued that the images of the young Syrian refugee toddler that was found dead on the Turkish shore has attributed to shift in the world's perspective on the refugee crisis, and therein, the refugee policies of a number of countries (de-Andres, 2016).

There are a number of other media forms that have been a conduit of social change by informing people of the social issue, and changing their attitudes towards the social issues. In 2011, the *Arab Spring* spread throughout the Middle East, and arguably would not have reached as many people if it were not for the vast dispersal of the information across communicative devices, such as the social media platforms (Davidson, 2015). Likewise social movements such as the 2011 *Occupy Wall Street* (DeLuca, Lawson, & Sun, 2012) and the 2008 Proposition 8 initiative movement in California concerning same sex marriage, in which both pro- and anti- campaign groups, showcased how the Internet, and specifically social media like YouTube and Twitter, can provide a venue for social activism (Vraga, 2014).

A case study was done on director Richard Harding, who creates fictional films for the purpose of social justice, such as *The Benghazi Six*, which covered the story of six Bulgarian nurses who were imprisoned in Libya for 9 years for supposedly infecting children with HIV (McHugh, 2012). McHugh demonstrated the effect Harding's film had in supporting the cause of international efforts to free the nurses (2012).

Film has also been used to promote environmental sustainability and discussion around environmental sustainability (Chui, 2001). Chui exhibited how a film festival, the *Finger Lakes Environmental Film Festival* (FIEFF), surrounding the topic of environmental problems and hosting over 10,000 guests every year, can be used for promoting a topic in varying spheres of society. Additionally, the festival coordinators have used media other than film, such as the Open-Space FIEFF, a online virtual platform. They hoped to create this platform "more as an interactive, engaged, dynamic space for gathering and opening up a range of engagements and ideas" with an

international scope (Chui, 2011, p. 227).

### Different Media Forms

Media can be thought of as a social agent, or a shared social space, which can powerfully develop and impact the audiences attitudes, beliefs, and values (Kang, 1997; Welsh, Fleming, Dowler, 2001), including documentaries (Daniel, 2012), and podcasts (Rahimi & Soleymani, 2015). Given the previously mentioned social issues, and the effects of social communication devices to effect societal change, it is potentially very important to examine the varying dimensions of media. Communicative devices have both been used to inform and educate (Reagan, 2007; Giannakos, 2015), and change peoples attitudes (Perloff, 2010). Specifically, we will first examine documentaries as modes of communication compared to podcasts.

Habermas (1993) decrees in his writings that an idealistic public sphere needs to hold its governing powers accountable by individual private discussions within media and societal communication devices. Habermas argues that this would make a true, healthy, and correct societal change. Aitken (2015) asserts that documentary film is the closest device that would appropriately fulfill the need of communication and discourse in the largely monopolized public sphere that Habermas purports (Habermas 1993; Aitken, 2015). Indeed, Harvey (2015) demonstrates how the new genre of documentaries is able to fulfill this aforementioned need via social media. Harvey refers to “intimate documentary,” which are a new online type of documentary in which participant’s film themselves stating their opinions on political issues and other topics, and can go viral via perpetual sharing on social media (2015). Thus, Habermas (1993) has suggested there is a

growing Internet interface, via social media, for society at large to have a voice and hold its government accountable. Likewise, with the advent of the Internet it is possible for media, such as documentaries, to be spread widely through individuals sharing them on social media platforms (Reagan, 2007).

In this study, we determined to examine documentary shorts to better understand their potential to effect comprehension and attitude change towards a social topic. Bill Nichols is one of the leading writers on the theory of documentary films (1991; 2001; 2010). Nichols defines documentaries as a representation, not just a reproduction, of the historical world usually containing an argument or a specific perspective, therein typically used to inform and persuade (Nichols, 1991; Nichols, 2010). In the documentary film, actual situations or events are covered, and there is a commonly held rule that the filmmaker should have limited involvement in controlling the filming and its subjects (1991).

There is also a fluidity between nonfiction and fiction within the varying types of documentaries, including even *mockumentaries*, which are documentary like, but are completely scripted and staged with some clues so that they indeed are not real documentaries, and *docudramas*, which are nonfiction films but contain facts and are based on real events (Nichols, 2010, p.145; Nichols, 2001; Nichols, 2010). However, for the purposes of this study we keep Nichols' definition of documentary film being nonfiction and as he states "at the heart of the documentary is less a story and its imaginary world than an argument about the historical world" (Nicholas, 1991, pg. 111). Therein the rhetoric is used to give the author's message in the most persuasive manner possible. This, therefore, does not include scientific film, surveillance footage,

informational or “how-to” videos that do not have an argument or informational crescendo with a voice that is both engaging and expressive (Nicholas, 2010, p.147). In this theoretical work, Nichols also believes that a documentary should ignite discussions about the topic of the film and not the film itself, thus underpinning the importance of the film is to inform the viewer about it’s topic and not just to entertain the audience (1991). Nichols also recognizes that the term documentary is not completely easy to define as they “[occupy] no fixed territory” (1991, p. 12), and generally the film genres are ill defined.

Nichols states that documentaries largely have a purpose of persuasion and are based in reality (1991; 2010). McLane (2012) similarly explains in her theories of documentaries that their purpose is to inform and persuade. She states that documentaries have three major characteristics. First is their subject, which initially had been nonhuman, but has since grown to encompass human subjects. According to McLane, a documentary’s second aspect includes a “purpose/viewpoint/approach” in which to educate the audience, grow the audience’s interest and sympathy for the documentary’s subject, and also effect the later actions of the audience” (2012, p. 2). Lastly, documentaries have form, which can range from a scripted or spontaneously recorded documentary, with a range of varying hybrid forms, not including a plot or character development form like a feature film would utilize (McLane, 2012). McLane says that form is mainly chosen based on the purpose and subject of the film, and that largely there is no conventional set form for documentaries because the boundaries are blurred.

Spencer also emphasizes documentaries’ use of a real subject as a nonfiction type of film, and the use of an argument or of “[creating] specific structures of meaning”

(Spence & Navarro, 2011, p.113). This points to the structure of a film utilized for a specific purpose, thus a means of persuasion.

Now that we have defined documentaries and their social use, now we will look at their dimensions. There are six major modes of documenting all nonfiction (Nichols, 2010). First, there is the *expository* documentary form, which has a goal of sharing information and persuading its audience with evidence in an investigative style and reports directly to the audience. Examples include, *The Civil War*, a lengthy documentary covering the history of the U.S. Civil War, *Supersize Me*, by Morgan Spurlock, and *An Inconvenient Truth*, Al Gore's documentary about global warming (Nichols, 2010).

Second, *poetic* documentary form is often promoting a cause, stresses visual and acoustic rhythms, and typically thought of as an avant-garde type of filming (Nichols, 2001). Examples of this film include *Rain*, created during the silent film era in 1929 depicting summer rain's effect on the street life of Amsterdam, and *The Bridge*, Joris Iven's documentary following the assembly of a bridge with beautifully composed images of its construction (Nichols, 2001).

Third, *observational* documentaries simply record events as they take place from a viewing stand point as though the camera was not there, thus exhibiting what really happened and giving an interoperation of this. Examples of this included *Primary*, one the first direct cinema films in which the camera followed the campaign between John Kennedy and Hubert Humphrey in the 1960 Wisconsin primary race in real time (Breaden, 2009; Hall, 1991). Another example is *Control Room*, documenting the inner workings of within the Al Jazeera news outlet that typically functions in delivering news without giving any frames or assertions (Nichols, 2010).

Fourth, *participatory* documentaries largely showcases testimonials covering a specific event or occurrence with the addition of interactions with the film crew or producer who guides what is happening on the camera, such as is often done in interview style commentaries. An example of this category of documentaries is *Enron: The Smartest Guys in the Room*, covering the financial greed and deception of the financial company Enron.

Fifth, *reflexive* documentaries consider the making of documentary film itself and its formal conventions, thus analyzing the principles of documentary and the other 5 modes within the film. These films are generally underrepresented, but an example of this mode is *Man with a Movie Camera*, which draws the audience's attention to filmmaking itself (Nichols, 2001).

Lastly, and sixth, *performative* mode includes the filmmaker interacting with the viewing audience in an explicit and expressive fashion. This could include first person essays, or study of a subculture or a specific field. An example of this is documentary is *Tarnation*, focusing on the ambivalent family relationships of the filmmaker where his mother became mentally ill and severely damaged his childhood.

Within these six major types of documentary film, Nichols (1991; 2010) also references three types of structures of the content of documentary film. First, the *problem-solution* structure, such as in *An Inconvenient Truth*, in which Al Gore states the problems or cause of global warming and then suggests solutions to these problems (Nichols, 1991; Nichols, 2010). Then *paradigmatic* structure is a more structured expansion of problem-solution including a thorough introduction of the issue with background and current status, and then a deliberate call to action or path to solution is

given (Nichols, 1991). Lastly, *observational* follows a character as they experience conflict and complication, then the documentary film ends with a resolution the character has come to, thus related to a type of narrative story (Nichols, 1991).

Documentaries are not easily defined, and currently there is an extensive list of varying documentary types. Some of these include: longitudinal documentaries, docudramas, match-action, and virtual performance (Nichols, 2010; Miller & Fowler, 2015). Documentaries are also of vary lengths, such as a few minutes to lengths of many hours (Nichols, 1991).

Within documentaries there are a plethora of other conventions such as sound, which includes background music, the use of varying voices and commentaries, and the use of rhetoric used to be persuasive arguments (Nichols, 2010). Likewise, there are vast arrays of visual effects that can be presented in a film, in particular the concept of *juxtaposition*, in which varying images are shown in varying pairs with one another and have distinct effects on viewers' interpretation of the images (Nichols, 1991). In fact, in the 1920s Lev Kulehshov conducted a classic study demonstrating the effects of juxtaposition where different montage of images where shown to the audience and their meanings where indeed different depending on the sequence of images (Prince, 2015). This concept of juxtaposition is therefore also commonly called the Kuleshov effect (Prince, 2015).

Documentaries have been used for informing and educational purposes. Russian documentaries by Sergei Loznitsa, showcase what truly occurred under Stalin's rule, which had otherwise been projected through government controlled propaganda (Alpert, 2013). Likewise, documentaries have covered the migration to America in

*Italianamerican* and *American Boy: A Profile of Steven Prince* via a historiographic approach in which participants share their story on film within the historical context of Italian migration to America (Meneghetti, 2015). Their stories end up growing and shaping comprehension of historical events portrayed in the documentaries (Meneghetti, 2015).

Nichols states that documentaries are used generally for the purpose of sharing information, either history, science, geography or language (1991). Documentary films should be to inform the audience and less to entertain them, thus understanding, learning and comprehending the content in the documentary film is one of the main purposes of the documentary film. In general, teachers have used such films as *Crash*, a film encompassing a number of injustices in the mist of racial diversity and social class, simply to promote an understanding of social topics and supplement discussion between students (Ross, Kumagal, Joiner, & Lybson, 2011). Hybrid documentaries that are entertaining yet their purpose is educational are referred to as *docutainment* (Glaser, Garsoffkey, & Schwar, 2012).

Documentaries have also been used to promote social issues and also to change people's attitudes. McHale was part of team that created a documentary to promote that cause of a marginalized citizen who was on death row, and to bring about justice for this person (2007). McHale determines that indeed documentary film is an activist's tool. In conclusion, McHale explains that the documentary film was a crucial part of the winning the battle to save the man's life.

Documentaries have been created in hopes of changing perceptions of political leaders. Albert Maysles was assigned to create a documentary on the Carl Sanders to

soften the progressive politician's reputation as he was running for governor of Georgia (Breaden, 2009). They were able to change voter perception and eventual voting patterns; thus, the video was able to change attitudes towards the candidate (Breaden, 2009).

Additional examples of a social and politically driven documentaries, include documentaries like *Nirbhaya* and *Akku*, which were both about the gang rape of a young girl in India's capital Delhi (Ponnivalavan, 2012). These films have been created to bring about a social change regarding the political scene in India on the topic of how men treat women (Ponnivalavan, 2012). Meng examined how documentary film was used to showcase the private accounts of China's Cultural Revolution, thus opening dialogue around the subject (2015). Meng concluded that there were two different approaches of such documentaries, to call for social justice, which encourages mobilization, while others set out to examine the personal experiences and deeper inner-self.

Now we will move away from the topic of documentary film and examine another growing and popular form of media—podcasts (Hilmes, 2016). Podcasts have not been sufficiently defined, and there is a less fixed theory about them (Hilmes, 2016). In general, there is a loose starting point for their definition, which is the concept that they are serial in nature, and can occur as a series covering a subject created by an individual purpose for no other reason than to share what they want to share with the public sphere. They are generally related to radio, with varying purposes such as to educate, engage the public, or engender empathy lessons. Some are fiction, investigative, talk radio, crime series, or totally creative in which one is completely nonfiction made with improv (Hilmes, 2016). Podcasts are downloadable on the Internet (Kardong-Edgren & Emerson, 2010; Hilmes, 2016) or people can listen on their mobile phones or other digital players

(Rahimi & Soleymani, 2015). In fact, a podcast critique suggests that some media forms have more potential for societal and political impact, and podcasts seem to fall in that category (Hilmes, 2016).

Podcasts have often been analyzed in their ability to assist in language learning (Al Qasim & Al Fabba, 2013; Naseri & Motalllebzadeh, 2016; Rahimi & Soleymani, 2015). Al Qasim and Al Fabba (2013) illustrated that podcasts were superior in helping Saudi English as a Foreign Language (EFL) learners in the experimental condition compared to the control group that did not receive podcast while all the students were enrolled in English courses over 20 weeks. Naseri and Motalllebzadeh (2016) demonstrated podcasts' usefulness to increase self-regulatory behavior for learning in the context of Iranian EFL learners. Likewise, they found that EFL learners who used podcasts were more dynamic learners (Naseri & Motalllebzadeh, 2016). In a separate study, Rahimi and Soleymani (2015) also examined EFL learners when using podcasts over the span of a semester, and examined podcasts effect on the learner's listening comprehension. They found that those that received the podcast condition had better comprehension outcomes (Rahimi & Soleymani, 2015).

Podcasts of lectures were also used in the context of a nursing course and students stated that podcasts helped them study and helped increase their grades, while instructors reported that students were less absent when using podcasts of the lectures (Kardong-Edgren & Emerson, 2010). When podcasts are used prior to course lectures to prime students with questions and summarizations the topics of the coming lectures, students demonstrated that they were better acquainted with the course material and felt they had the concepts better organized (Popova, Kirschner & Joiner, 2014).

The use of podcasts has also been able to change attitudes towards a given subject. Podcasts again have been examined in the context of language learning demonstrated the effect language education podcasts have in changing beliefs about language learning (Basaran & Cabaroglu, 2014). This pre-test-post-test research design, especially helped to increase the belief that some people are more apt to learn foreign languages and decrease the belief that it is easier to learn some foreign languages compared to others.

As related to podcasts, radio campaigns have been used to educate and promote positive societal change (Smith, Downs, & Witte, 2007). Smith, Downs, and Witte (2007) examined a form of entertainment education in which the Ethiopian government used a radio drama to promote the healthy behaviors that would prevent HIV, showed that more exposure to the radio broadcast series did increase individuals use of behaviors that prevented HIV. Likewise, Yoder, Hornik and Chirwa (1996), examined Zambia's radio drama promotes AIDS information. The authors examined the knowledge gained and the behavioral changes engendered by the radio broadcast. They found that the population at large who were exposed to the media had an increase in knowledge about AIDS, and the majority of the respondents had reduced risky behaviors associated with contracting AIDS.

### Visual Presence

The main difference between these two previously articulated media forms, documentaries and podcasts, is that documentaries contain visuals, whereas podcasts do not. The two overarching characteristics of media forms are text and visual elements. The visual aspect of film has been varied artistically and purposefully in a number of

examples. Russian documentary auteur Sergei Loznitsa focused on visual aspect of film making the “image as the message,” his films lacking commentary, relying heavily on visual elements and using extreme contrasts in visuals to denote the overarching message (Alpert, 2013). Nichols (1991) also referenced this same concept in his writings, stating that the commentary played a subordinate role compared to the visuals used in a documentary. Using words only to say what cannot be seen (Nichols, 1991), some films have been made without commentary, showcasing the effect visuals alone will have. Strong images can be used to alter audiences mind (Nichols, 1991). Thus, the visuals alone are believed to have quite an effect on a film’s audience.

As for educational purposes, varying types of video have been used in used for educational purposes (Ross, Kumagai, Joiner, Lypson, 2011; Laws, Willis, Jackson, 2015; Lui, Unger, Scullion, 2014). The use of media forms with the addition of pictures has been shown to benefit learning. The multimedia principles based on research and as stated by Mayer (2002) is that “people learn more deeply from words and pictures, than from words alone” (p. 43). On the base level, the definition of multimedia is any resulting learning material that includes both words and pictures in any variance of form (Mayer, 1997). Mayer and Anderson (1992) examined the use of pictures and words, initially showing that when verbal instructions were given at varying times with a pictures, such as given before the pictures were presented, after the pictures were presented, or concurrent to when the pictures were presented, the participants performed the best when the pictures and text were shown together.

## Rhetorical Text Structure

Now, that we have reviewed media devices as conduits of learning and attitude change, and specifically reviewed the influence of visuals in these two endeavors, we will now examine the verbal element of media devices. As mentioned previously, the media forms were varied across both of its broadest characterizes, visual and verbal content. Thus, as the visuals were easily varied across media form by being present in the documentary form and not being present in the podcast, the verbal content will also be varied across two text structures, narrative and problem-solution.

There are a number of varied techniques used to examine text structure, or as it is referred to in the literature: Rhetorical text-structure (Meyer, 1975a; Meyer, 1975b; van Dijk, 1979; Mann & Thompson, 1988). These approaches to text analysis allow researchers to determine how individuals use varying text types in their recall of text material, determine which text are easy to learn from, create scoring protocol for recall measures, and to examine how a student might improve over time for one content structure type (Meyer, 1975a, Meyer, 1985). Rhetorical structure of text does not refer to the linearity of the content of the text, such as some content preceding other content, of vice versa. Rather, rhetorical structure refers to the connectedness of a given text's content, which can be visually presented in a *content structure* that exhibits the connectedness of the text (Meyer, 1975a). Rhetorical text-structure is the specific relationships found within the content of a text, such as the relationships collection, description, or problem-solution (Meyer, 1975a).

van Dijk's approach to text structure also held that there is indeed relationship between text segments, but also, there are larger macrostructures that occur in natural

language, such as narrative, descriptive and argument. Mann and Thompson's (1988) *Rhetorical Structure Theory* is a system of dividing a given text into a hierarchal structure and describing the relations between the independent text clauses divided somewhat arbitrarily. This was done by identifying the transitions within text and then determining the relationship between the independent texts that the transition sat between. Mann and Thompson identified 12 relationships that could be found between these texts. Some of these relations included *solutionhood*, *elaboration*, *background*, *evidence*, *justify*, and *sequence*. Thus, one clause would be considered the nucleus, while additional clauses would be considered satellites and these satellites would relate to the nucleus in one of the numerous relations. For example, a nucleus might be considered the phrase "She reads a lot of books," while phrases such as these act as evidence: "She has a large library" and "She can be found reading every evening."

Like the previous mentioned theorists, Meyer, created a theory of text structure and she also conducted extensive research demonstrating the varying forms of text-structure, and their varying effects on recall (Meyer, 1975; Meyer, 1985). Meyer's theory included *predicate rules* and *argument rules*, in which predicates were the words within a text that connected other content, and the arguments, were the content in which the predicates connected. She also created a schema in which text, when analyzed with her theory, would be formatted into a hierarchical content tree—*content structure*. In summation, she created a text analysis technique, in which she referred to the text structures has having on of many types of rhetorical text structures.

Take for example, the content structure for the "Susan made frames from driftwood" (see Figure 1.) The content structure contains the given text content placed on

individual nodes, and labels: role relations and rhetorical relations. This content structure shows how one content idea, “made” is consider the predicate of the rest of the content of the text, “pictures frames” and “driftwood.” Thus, the predicates are the most connected relationally to the rest of the content in the text and therefore are the highest idea in the content structure, while an idea within the text is the least connected is therefore lower in the content structure (Meyer, 1975; 1985). Often the content that is higher in the connect structure are the main ideas and the lower level content in the content structure are the detail ideas. The content in the example given is connected with role relations, such as *agent* and *patient*, whereas in other content structures there are also rhetorical relations, such as *response* and *collection* as denoted by being underlined (see Figure 2.). The text content can be divided up to varying lengths, from full sentences to lengthy propositions and even individual words, depending on the extent of the text analysis desired.

#### Example of a Content Structure with Role Relations

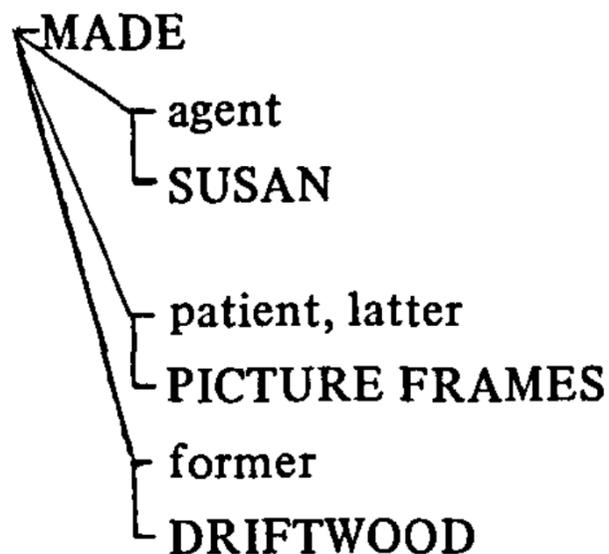


Figure 1. (Meyer, 1975)

Example of a Content Structure with Rhetorical Relations

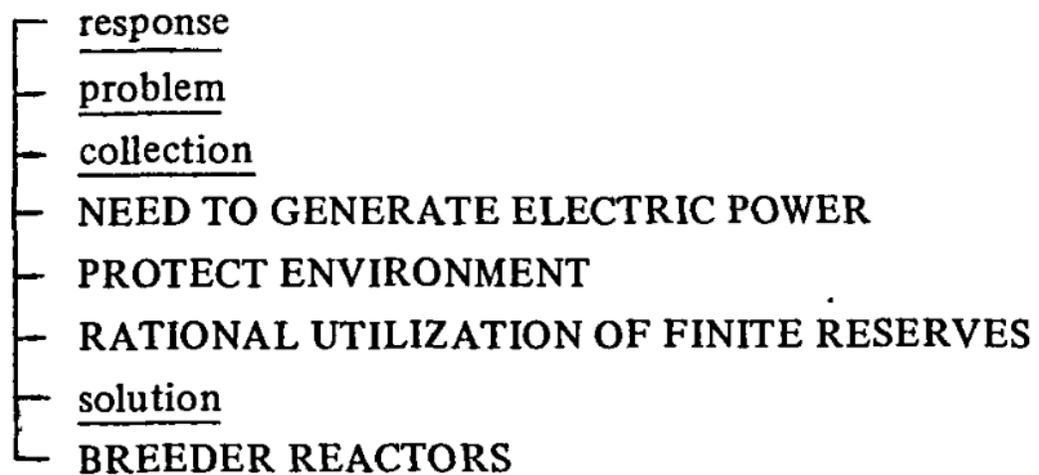


Figure 2. (Meyer, 1975)

Meyer also used the concept of signaling within text to determine which rhetorical relations existed in the text (1975). Signaling within text gives specified emphasis to some aspects of a text (1975). For example, in the text “next, they went to the store,” the word “next” acts as a signal for narration, which is a sequence of events. These can be thought of as pointer words, such as “unfortunately,” “then,” “the problem is” or “the solution is.” The term “unfortunately” denotes the opinion of the author, where as “then” would denote a sequence of events (Mayer, 1975b). Then the terms “problem” and “solution” simply denote the rhetorical structure of problem-solution (Mayer, 1975). Mayer has shown that this signaling technique increases the readability of given texts (Meyer, 2003).

Remembering the mention of Harriet Beecher Stowe’s novel *Uncle Tom’s Cabin* (Green & Brock, 2005) that had the power to inform and move a generation to action. The same facts could have been given in reference to a general person or a group, but in

*Uncle Tom's Cabin* that information is given in the way of a narrative, a story, following one person, a slave girl, Liza. In this way, “undermined the acceptability of slavery—and not only stirring popular indignation” (Brunner, 2002, pg. 94) and thus *Uncle Tom's Cabin*, “played as great a part in precipitating the American Civil War as any debate in Congress” (Brunner, 2002, p. 10).

As for narration, Meyer (1975) considered narration to be a direct sequence of events, and utilized Litteral's (1972) topological way of dealing with time within a given text, thus in the varying text structure theories, a timeline can be denoting while keeping the structure of the text created by its internal relations. Thus, a timeline can be created for a passage by assigning numbers to events denoting the sequence of events in their given occurrence in real time.

Stein and Glenn (1975) created a scheme for analyzing story telling, in which he demonstrated that the saliency of a given unit in a story would likely be remembered at higher frequencies than that content that is less salient. In their story schema structure, a hierarchy is used in which high level text units influence those that come below it. In van Dijk's theory of narration, focused on natural narratives, which are narratives that occur in everyday communicative forms, as opposed to artificial texts that are written explicitly and with appropriate grammatical rules (1980). In his theory, a narrative text structure was depending on characters actions in pursuit of their goals.

Much like van Dijk's theory, Thorndyke (1977) created a theory of narration in which text structure is based largely on the action descriptions of the narratives subjects. Thorndyke also utilized a standard macrostructure that should exists in the narration. This macrostructure includes: the setting, stating the main character, location and time; theme,

the general goal of the main character; plot, is the main section denoting the actions taken by the main character to accomplish his goals; and lastly, the resolution, which is the final outcome of the main characters actions in attempting to overcome his goals. Narration text genre falls under the category of collection (Meyer, 1975a) and problem-solution is considered a type of expository text genre (Meyer, 1980). Expository text are considered text containing new concepts and broadly used to share information.

Namely, the rhetorical structure of text has been studied for its effects in comprehension, showing the largely stable finding that narration is better for comprehension (McNamara, Ozuru, Floyd, 2011; Sahin, 2013; Best, Floyd, McNamara, 2008; Olson, 1985; Englert and Hiebert 1984), and more structured text-structure is also better for comprehension (Meyer & Ray, 2011). Meyer and Freedle (1984) found that texts with more structure lead to better recall of text than less structured texts. Then Ray and Meyer (2001) identified five text structures, or that is rhetorical structures: *description*, *collection (narration)*, *comparison*, *response (problem-solution)* and *causation*. Examples of high structure texts are *causation* and *problem-solution*; low structure texts are *collection* and *description*.

However, even though narration is considered to be a collection text-structure, therein less structured, studies have shown narration's superiority over other rhetorical text-structures for recall (Best, Floyd, McNamara, 2008). Also in a comparison of narrative text and informative text, also considered expository, 4<sup>th</sup> and 5<sup>th</sup> graders understood narrative text better than the informative text (Sahin, 2013). Likewise Olson, (1985) found that participants were better able to answer questions about a narrative text than they were for an expository text. McNamara, Ozuru, and Floyd, (2011) also showed

that 4<sup>th</sup> graders comprehended narrative texts better than science text (expository type). In fact Englert and Hiebert (1984) did a study showing the differences narration structure to comparison structure, which problem-solution falls under this category. They found that children performed better on a judgment task in which they were asked to rate how well given sentences fit with stimulus sentences.

While little research has examined the effect of visual presence in its effect on changing attitude, there seems to be even less research examining varying text structures ability to change attitudes. In fact Braasch, Goldman, and Wiley (2013) examined certain types of texts ability to bring about conceptual change, which implies a change in mental state, although not specifically a change attitude. They examined how varying texts helped participants revise previously held misconceptions of a scientific knowledge, thus causing conceptual change. Specifically they used two text types, one detailing the misconception and another including a refutation, implying that the misconception is inaccurate, and with both texts containing the corrected scientific explanation thereafter. This research indicated that the refutation within a text was pivotal in changing the participant's misconceptions of the scientific information (Braasch, Goldman, & Wiley, 2013).

The only research identified that used varying text types to change attitude was the study conducted by Sinatra, Kardash, Taasobshirazi and Lombardi (2013) in which they used a persuasive text to change individuals' attitudes towards global warming. In this study, the change in attitudes towards global warming was measured before and after reading a text about current scientific findings of global warming. This text was considered persuasive text given that it was opposing participants held beliefs, and it was

created to counter the belief that humans do not contribute to global warming. Clearly, these two previously mentioned studies only relate to the study presented in this paper, in that they determine varying text's effect on two mental states: held misconceptions, and attitude change. In fact given the combination of visuals and text in the form of commentary, Perloff (2010) has classified a number of movies that have influence on attitudes including: *Saving Private Ryan*, *Supersize ME*, *Schindler's List*, *Milk*, and *The Passion of the Christ*. In the study of persuasive communication, Tayler and Thompson (1982) also identified vivid narrative stories as being able to change participant's attitudes towards a topic.

The variance in visual and verbal content was chosen based on previously found research in both multimedia learning and the rhetorical text structure. The documentaries and podcasts were chosen to contrast the effect of visual presence and visual non-presence, because multimedia research has shown that including pictures with text in learning environments has been better for learning (Mayer, 2005). For the variance in rhetorical text-structure, problem-solution text structure was chosen as it is also related to the common content structure of a documentary (Nichols, 1991), and narration because of its superiority in comprehension (McNamara, Ozuru, Floyd, 2011; Sahin, 2013; Best, Floyd, McNamara, 2008; Olson, 1985; Englert and Hiebert 1984). Infact, Olson (1985) believed that the causal events that occur in a narration would allow the reader to create a link between the story events, creating a single coherent representation, and thus be better able to remember the content of a text. Also, Zabrocky (2011) states that because we are exposed to narratives at a young age, children have established well-formed narrative schema, and are better able to understand and encode information from a narrative text.

Taken together, it is predicted that narrative text-structure will have a consistent high effect across media forms, given the strength of the narrative schema that is developed from an early age (Olson, 1985), and that this text-structure has shown a strong influence on comprehension compared to other text-structures (Best, Floyd, McNamara, 2008). As for the problem-solution text-structure, which does not have as strong a schema, it is predicted that it will benefit from the addition of visuals in the video as predicted by the multimedia principle (Mayer, 2005).

### Measuring Learning Outcomes

Since participants will be exposed to a large text and we desire to know the variance of memory they have for each of the four conditions, it is important to understand how to measure what they remember for the purpose of learning. An exhaustive examination of Kintsch's Construction-Integration Model for Discourse Comprehension was conducted, along with other important research measuring memory (Kintsch & van Dijk, 1978; Kintsch, 1985; Kintsch, 1988; Kintsch, 1992; Kintsch, 1998; Kintsch & Welsch, 2014).

Researching the process of learning is important to understanding how we learn and how we should instruct to support learning. In 1885, one of the first to examine learning was Hermann Ebbinghaus (Wozniac, 1998). Ebbinghaus wanted to study learning without the use of prior knowledge. To do this he created strings of nonsense syllables, which would not have been familiar and therefore not in long-term memory. He found that after learning the strings of nonsense syllables his memory of them decreased as a function of time, thus the Forgetting Curve. This was one of the most basic findings

on learning and memory. And this is, of course, applicable to other nonsense syllables. The moral of the story: when learning, studying once will not be sufficient for that exam in a month. So, make sure to study, restudy, and study again!

Much later in 1956, George Miller, famously found that we are able to remember and recall  $7 \pm 2$  items from our working memory (1956). However more recently Cowan and his colleague Chen have suggested rather that we are able to hold about 3 chunks of items in our working memory (Chen & Cowan, 2009). Although, these previously mentioned findings are informative to understanding learning, Walter Kintsch points out that models for memory need not be restricted to list learning studies (1974), but also memory for text and discourse, which includes more complex encoding processes. Likewise Anderson and Pearson state that “Much research that is ostensibly about remembering is really about comprehension and learning” (1984).

One of the first to examine learning from text was Fredrick Bartlett, who in 1932, examined participants memory of a story: *War of the Ghosts*: “One night two young men went down to the river... They heard a war cry” (Roediger & Thompson, 1997). The story continues but what Bartlett found was that people commonly remember the main themes of the story and not the details. Does this sound familiar? Maybe someone will remember the theme of where their car was, but not the detailed location. Be it spoken or written text, the majority of the discourse we encounter, we take away the main overarching ideas and not the details, unless we take the time to elaborate (Meyer, 1975). Meyer has found in her research of rhetorical text structure, that people remember the higher order, main ideas, more than the lower order details. Rather we do a kind of reconstruction of

our memory when we encounter new material we interpret it with our prior knowledge (Roediger & Thompson, 1997).

To study discourse comprehension, starting in the 1970s Walter Kintsch, with help from van Dijk (1978) and David Welsh (2014), created a model for discourse comprehension, the Construction-Integration Model. Such a model is important especially for studying the process of discourse comprehension for creating appropriate instruction and learning strategies (Nathan, Kintsch, & Young, 1992; van Dijk and Kintsch 1983; Nguyen & McDaniel, 2015; Chun, 1997). This model was important as the field of memory research started walking away from list learning and wanted to understand larger discourse comprehension (Spark, 2012).

In Kintsch's Construction-Integration Model of discourse comprehension, the learner attains information from discourse, and with the combination of prior knowledge, creates mental representations of the meaning of the discourse (Kintsch 1985; 1988). This mental representation is then integrated into long-term memory (Kintsch 1985; 1988). The creation of this mental model goes through 3 main stages: the construction of micropropositions, macropropositions, and the final situation model that represents the situation described in the discourse (Kintsch 1985; 2014). A situation model is also defined by Zwaan and Radvansky (1998) as a model undergoing construction while someone is encountering a discourse and integrating the incoming information with prior knowledge into a global model encompassing both new information and prior knowledge. While, in this model the process of comprehension is described in three stages, this sequence is not fixed, and no precise timing is accounted for, rather the processes in reality are mixed and occurring in parallel (Kintsch 1985; 1998). Likewise, a learner may

come to the discourse with a specific purpose in mind, and therefore a schema from long-term memory is activated to guide the process. A schema is a general stereotypical situation, and has specific expectations slots to be filled in (Anderson & Pearson, 1984; Kintsch, 2014). For example, while reading your textbook, you maybe looking for key terms, or while watching a Disney movie, you are anticipating that there will be a beautiful girl, that will fall in love with a charming man, but only after going through a number of obstacles.

During the first stage in this process of discourse comprehension in the Construction-Integration Model, when presented with coherent discourse, the discourse is brought into the model and processed in multiple cycles (Kintsch & van Dijk, 1978). For each cycle, given that our short-term memory—that is the buffer, is limited, sentences are brought into the system one at a time. As the sentences are brought into the system, they are parsed into individual propositions—which are single unit ideas. Propositions can be represented as several word pairs, or they can be reduced down to single word. These individual propositions are then integrated into a microproposition structure depicting how the propositions connect together through superordinate and subordinate connections. For example: “Lucy weeded the vegetable garden,” becomes: “Lucy,” “weeded,” “garden,” “vegetable” (see Figure 3.) See how vegetable is a unit idea subordinate to the other unit idea *garden* (Kintsch, 1988).

### Example of an Individual Micropropositions

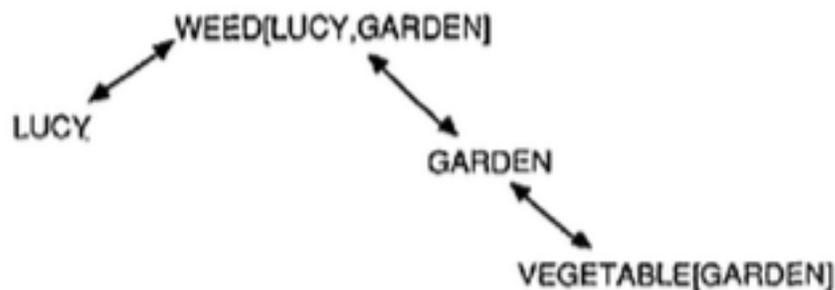


Figure 3. (Kintsch, 1988)

Rake for example the sentence “Lucy tried to weed her father's garden.” Which is then parsed and structured into: “Lucy,” “try”-“weed,” and “Father’s”-“garden.” At this stage, prior knowledge is activated by the incoming text and information from long-term memory that is associated with the text is brought into the buffer to connect to the microproposition structure (Kintsch, 1988). Thus, “Lucy” is associated with girl and pretty from previous connections found in long-term memory, while “weeding” is associated with working and dirty, and “garden” is associated with flowers. In this model, long-term memory is thought of as a stored network of propositions (Kintsch, 1988).

Connections between the mass amounts of propositions in long-term memory are organized in network and connected by varying degrees connections, some connections being very strong such as “Lucy” to “girl,” and others being very weak like “weeding” to “fun” (Kintsch 1985; 1988). When prior knowledge is activated, a spread of activation occurs in its network allowing several inferences and elaborations to be brought into the buffer and connected to the microproposition structure (Kintsch & van Dijk, 1978). Given that our long-term memory is a never-ending network of connections, if our buffer

did not have a limited capacity, our microproposition would expand exponentially. However, only propositions that have the strongest association with the text propositions are brought into the buffer from long-term memory (Kintsch & van Dijk, 1978).

At the completion of the first cycle for the first sentence, some of the propositions and their associations from the last cycle are left in the buffer (Kintsch & van Dijk, 1978). These are the proposition considered to be the most important and are usually the main topic propositions, and the most recent propositions. That is the propositions at the end of the previous sentence. For example, in the instances of the last sentence, “Lucy tried to weed her father's garden” the propositions “Lucy,” and “Father-garden” are left in the buffer (Kintsch, 1988). The rest of the propositions are put into long-term store, and can be readily available if later text cues its activation (Kintsch & van Dijk, 1978). Because of this, there is more room in the buffer, for the next cycle including assimilation of the next sentence is brought in. Again, like the last cycle the sentence is parsed into propositions, prior knowledge is activated to make additional associations, and then connections are made between these propositions and previous propositions that were kept in the buffer. So on and so forth, cycles occur for the whole discourse until the learner has completed the process. Thus at the end, the learner has constructed a final microproposition structure, representing the actual text of the discourse.

Next, the microproposition made of propositions directly from the discourse and prior knowledge is transformed into a macroproposition—that is the gist of the discourse, which Kintsch and van Dijk refer to (1978). During this integration, inappropriate inferences and elaboration are filtered out. This is done by three rules: 1.) Delete redundant or irrelevant propositions, such as “garden” from the proposition “garden”-

“Father”-“garden;” 2.) Choose the most relevant proposition to represent others, such as “Lucy weeded” from the sentence “Lucy tried to weed her father's garden;” 3.) Create a new proposition that summarizes the propositions found in the microstructure, such as “14 tulips is now 6” from “there were fourteen tulips in the garden and now there are only six.” Thus, the macrostructure you are left with is: LUCY[WEEDED], FATHER[GARDEN], TULIPS [14 [NOW[6]]] (Kintsch, 1988).

The memory we have from a discourse may in fact be at the surface level, that is a word for word memory of the text, or the macropropositional—that is the gist (Kintsch & Van Dijk, 1978). However, usually our memory of discourse is in the form of a mental representation of the situation from the discourse, or as Kintsch and van Dijk (1978) refers to it, a Situation Model. The situation model is constructed based on a given purpose the learner has, although sometimes a very weak purpose, such as watching a movie for entertainment. On the other hand, a student might be assigned to learn from the text what each person did. So they remember, that the LUCY WEEDED, and the FATHER had a GARDEN. Whatever the case, the situation model that the learner creates is then integrated into long-term memory. A situation model is created on the basis of the previous two representations, the micro and macroproposition structures. Such as, LUCY [WEEDED], GARDEN-FATHER, TULIPS [14 [NOW[6]]]. With this structure, the learner further uses their prior knowledge to construct a situation model that represents the situation in the discourse relative to their own knowledge.

Thus, at this point, the learner makes inferences (Kintsch & van Dijk, 1978; Kintsch, 1991). From the previous discourse they have encountered, they may believe that Lucy’s father was upset. This is in fact nowhere in the text, but it is inferred by the

learner, and built into their situation model. Other examples of inference might be believing that the hiker was afraid. When in fact the text only states that: “The hiker came across a bear” (Kintsch, 1988). Or when an individual reads: “Jack missed his class because he want to play golf. He told his teacher he was sick.” And you infer that Jack lied, even though this is also not mentioned. Once, a situation model has been created, the learner is said to have comprehended the discourse and will be stored in long-term memory (Kintsch & van Dijk, 1978).

After processing the discourse, comprehension can be measured in a number of ways, such as recognition, recall, summarization, reconstruction of the text, and question answering measures (Kintsch, 1998). When a learner is asked to recall a discourse, they may not remember a single specific word or set of phrases, but they can show that they understood the discourse by expressing it in their own words (Schmalhofer & Glavanov, 1986). If a learner is asked which of these sentences were in the text from the above examples, a recognition test, they could correctly select all of the three, although only one was actually in the text:

- 1.) “Lucy tried to weed her father's garden.”
- 2.) “Lucy pulled out 8 tulips.”
- 3.) “Her father was upset.”

However, if the learner picks each of these answers it is clear they did comprehend the text.

This model also acts as a frame for research, such as studying the differing dimensions of text, like the elements of time, space, objects, causation, intentionality, and what makes a text more or less coherent (Nathan, Kintsch, & Young, 1992; Graesser,

Millis, & Zwaan 1997). Likewise, the model can be used for further examination of the comprehension process, like making inferences, mental control processes, and parsing (Kintsch, 1992). This kind of research can inform how to create instruction for better learning or strategies for learning from different forms of discourse, like books or lectures (Nathan, Kintsch, & Young, 1992; Cole & Mandelblatt, 2000). There has been research on the strategies like note taking, rereading, reciting, or the learners considering the inferences they made while reading (van Dijk & Kintsch, 1983; Mayer, 1984; McDaniel, Howard, & Einstein, 2009; Nguyen & McDaniel, 2015). In conclusion, it has been determined to analyse learning outcomes in this study via a free recall measure, in which participants document everything they remember hearing from the media presentations. This decision was made, based on the fact that a measurement of comprehension could benefit one condition of the study more than the other.

### Measuring Attitude Change

Now moving away from the area of learning outcomes, we will examine attitudes and their various measuring techniques. Ajzen defines attitude, as “an individual’s disposition to react with a certain degree of favorableness or un-favorableness to an object, behavior, person, institution or event– or to any other discriminable aspect of the individuals world” (1993, p. 41). Thus there is a general dimension of a person’s evaluation of the given object. It is also thought of a hypothetical construct given that it is not an observable behavior (Ajzen, 1993). In fact they can be exhibited verbally, but can also be nonverbally contained in a person’s cognition without making outward expression.

Originally, Allport, one of the first theorists on the subject of attitude (Stiff and Mongeau, 2003), defined attitudes as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related” (Allport, 1935, p. 810). Allport denotes how the term attitudes is a complicated concept which “combine both the instinct and habit,” and is able to be applied to one person or a culture as a whole (1935, p. 798). Then in 1968, Rokeach defined attitudes as “a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner” (1968, p. 112). Whereas, Stiff and Mongeau (2003) defined attitude as “a theoretical construct created by social sciences to explain the different reactions that people have toward an object or situations” (p. 12).

More contemporarily definition is the definition given by Bohner and Dickel and called an *attitude object*, which can be anything in which a person holds in mind and has a discrimination towards (2011). Thus, Bohner and Dickel are being careful to be inclusive in their definition of the objects that individuals can have an attitude towards, including other individuals, concrete objects, abstract concepts, and people groups. They also hold that there are variances in independent attitude source types, such as cognition, believing pollution is destroying the ozone layer, affect, becoming angry that animals are going extinct, and also behavioral, taking public transportation to reduce pollution (Bohner and Dickel, 2011). One difference in their definition, compared to Allport’s definition, is that attitudes do not necessarily need to be held stable over time.

Moving to a new epistemology, in the study of persuasive communication, experts examine which elements of a message can change attitudes (Perloff, 2010). Often

this includes having a fair, statistical evidence, cogent arguments, supportive evidence, and two-sided message, both conveying the authors stance and a contrary stance.

However, it said that even good messages that communicate persuasively would have difficulty changing attitudes that are core values and self-concept of an individual.

In measuring attitudes, Likert scales and variance of semantic responses are often used (Stiff & Mongeau, 2003). With a Likert scale respondents are often asked to select one of several responses on a scale ranging from *Strongly agree* to *Strongly disagree* to indicate their attitude towards a certain topic, such as The Jerry Springer Show is entertaining (Stiff & Mongeau, 2003). Thus, the closer they are to Strongly agree on the scale the more positive the attitude is towards the Jerry Springer show verses more negative attitudes the closer they are to Strongly disagree on the scale.

Attitude was once almost solely measured via respondents self-reports, however as of late it has become very popular to measure attitudes implicitly (Bohner and Dickel, 2011). The self-reports rely on people's ability to assess of their own attitudes and their desire to be forthright. However, often times there are problems of desirability, in which a participant does not want to be perceived negatively. Likewise, they may be unable to identify their negative attitudes, believing themselves to have only positive values as indicated by attitudes. Then Guttman (1944) created a scale in which participants determine which states are easiest to accept to those that are difficult for the participant to endorse. Although the scale and measurement may be difficult to construct, it does a better job at getting at true attitudes than other measurements would. Haire (1950) created a technique in which respondents list a words that come to mind when they are cued with a specific word.

Thus, implicit measures like the Implicit Association Test (IAT) suggested by Greenwald and Banaji (1995) and eventually created by Greenwald, McGhee and Schwartz (1998) allow researchers to truly determine implied attitudes by implicit stronger associations between concepts as indicated by the latency of key strokes used to associate given terms together. Thus, if one of the given target words, for example fat-people and skinny-people, will be more easily associated with pleasant words, such as happiness, lucky and gift, while the other is more associated with unpleasant words, such as grief or disaster. The target word that is most associated with the pleasant words would indicate the positive attitudes the participants had towards this category while high association with a target word and unpleasant words indicates a negative attitude towards that category term. As for changing attitudes, the use of interventions have been examined for their ability to change doctors' and medical students' attitudes towards older adults, but found that several studies showed both successful results and unsuccessful results from the interventions (Samra, Griffins, Cox, Conroy, & Knight, 2013).

Originally, the IAT was used to determine participants' preferences, such as preference for skin tone, insects or flowers, or for Japanese or Korean cultures, as associated with pleasant and unpleasant words (Greenwald, McGhee, Schwartz, 1998). However, other tests have been used to indicate associations between concepts, such as an IAT examining associations between gender and career, or gender and science ("ProjectImplicit," 2011). For example, Chaxel (2015) examined gender-career biases demonstrating that male names were more easily associated with the words relating to

career than with words relating to family, while female names were more easily associated with words related to family than to words related to career.

As Greenwald and Banaji (1995) originally suggested that most of our social behaviors operate at a subconscious level, and that past experiences lead to a specific set of understandings and then lead to implicit judgments, also known as attitudes.

The advantageous of the IAT is its ability to measure individual's attitudes in an indirect manner since participants are showing "implicit attitudinal preferences" (p. 1474) by making automatic evaluative associations.

In this study, reactions to the media were also measured, including affinity towards the media, desire to share the media, intent to share the media, desire to search for more information related to the content of the media, and intent to search for more information. In movie research, it has been found that an audience likes a movie if they are able to experience narrative transportation, that is the experience of being absorbed in the narration of the movie (Hall & Bracken, 2011).

Iran-Nejad (Integrity, 2014) found that the outcome valence of a story increased a participants liking of the story. Outcome valence was referring the goodness or badness of an outcome, and rating of liking was rated on a scale from did not like at all to liked very much. The concept of liking was also examined for complex images ads (Philips, 2000) finding that explanation of abstract images increased liking. Sprecher (2014) found the that addition of visual aspect of Skype did not increase liking more than just audio Skyping, but the addition of video conversation after an initial text correspondence did increase the participants liking.

As for the potential for people to share media, as Nichols (2010) has stated, documentary sharing has expanded as Internet sites like YouTube and Facebook make available to anyone with Internet access and on these sides “mock-, quasi-, semi-, pseudo-, and bona fide documentaries... proliferate” (p. 2). Nichols also states that indeed sites like Facebook and YouTube will need their own theory. Likewise, Chen and Lee (2014) states marketers are veering away from traditional advertising and relying more on streaming videos, however this is contingent on viewers’ desire to share the videos proliferating the video in hopes that it will become a viral video. Explicitly, videos that were able to pull its audience into the video is called transportation, and enjoyment increased participants’ desire and intention to share the video, however this lacked in correlation to their change in attitudes towards the subject of the video. Likewise Dafonte-Gómez (2015) examined viral videos as a source of marketing advertisement, that is videos that are masked advertisement purposes and made free to the public, and able to be disseminated peer to peer. Based on previous research, they determined the most important element of video that leads it to be shared and become viral is the emotions of joy and surprise.

As the previous studies focused on advertisement videos, news videos are also a topic of sharing (Lee & Ma, 2012). As of late, social media platforms allow individuals to participate in news production in that they determine what to share with their social media community. Lee found that participants were more likely to have video sharing intentions if they had various attributes such as information seeking, status seeking, socializing, and prior experience with sharing on social media platforms.

Based on Chen and Lee's finding that enjoyment and transportation experience namely experienced in narratives was related to intentions to share, we predict that affinity would be correlated with both desire and intention to share in our study. Likewise based on Shehu, Bijmolt & Clement's (2016) study that indicated liking a video lead to a higher chance of participants sharing the video. Generally, Nichols (1991) determines that those who view documentary film desire to watch them, that is they are wanting to gain information that the documentary propagates. However, no additional research was found that indicated a video causing a person to desire or search for more information on the topic of the video.

#### Individual Differences: Social Dominance Orientation

In this study, we measured on distinct individual difference, which was people's varying social dominance orientation, as measured by the Social Dominance Orientation scale (SDO). The SDO scale was created by Pratto, Sidanius, Stallworth, and Malle (1994) and based on the social dominance theory that proposes societies reduce intergroup conflict by way of elevating ideologies that endorse one group over another. These ideologies are then used widely within a society and namely institute discrimination against the lesser of the groups to the point that discriminations are even normalized. SDO represents the preference for inequality between social groups, and namely predicts individuals' political and social attitudes. In their initial findings Pratt Sidanius, Stallworth, and Malle (1994) found the men are more inclined to have high SDO scores than women, those with high-SDO sought employment in which they could

attain hierarchical-attenuating roles. Also, they found that SDO was negatively related to altruism, empathy, communality and tolerance.

SDO significantly related to a number of other attributes (Pratto, Sidanius, Stallworth, & Malle, 1994). SDO rated to economic conservatives and the belief that some should thrive, while others that are not as competitive should not prosper. It is also related to both nationalism, patriotism, cultural elitism, anti-black racism and anti-Arab racism. Then on the other end, SDO was negatively related to more egalitarianism tendencies, such as the belief that those who have more resources should share with those who do not. With the increased interest and support of fair trade groups, which establish fair trading practices that protect marginalized farmers in developing countries, Rios, Finkelstein, and Landa (2015) investigated SDO's relationship with increased fair trade consumption.

In fact, Danso, Sedlovskaya and Suanda (2005) found that those with higher-SDO had stronger anti-immigration attitudes after their beliefs were challenged, but when those higher in SDO focus on the out-group their prejudices can be reduced, especially when focusing on individual values. In trying to understand such the mechanisms that influences support of conservative policies, which are often relates to SDO, Im (2014) found that it is often economic inequality that leads to educational disparities that therein relate to individual's more conservative ideologies. Im was able to give some understanding to the finding that lower classes often exhibit more conservative attitudes towards inequalities, which do not end up benefiting the working lower classes.

## Conclusion

Given the plethora of social issues, which affect our society negatively, it is imperative to inform the public about and change their attitudes towards these issues. To that effect, it seems profitable to assess communicative devices ability to do this task. Visuals have been examined in multimedia for learning (Mayer, 2005), but not as used in the context of documentaries, nor in their ability to change attitudes towards this specific social issues topic of structural inequality in the global economic system. Broadly, rhetorical text structure has also not been examined either with or without video, as a spoken commentary form, either for its influence on learning or attitude change. Therein, in this present study we determined to examine these visual and text factors as conduits of educating the public and changing their attitudes towards important social issues.

## CHAPTER III

### METHODOLOGY

#### Participant

One hundred and thirty seven participants (mean age = 36 years 6 months, *SD* = 12 years 4 months, age range = 19 years to 72 years; 65% were female) were recruited from the United States [40 of 50 states were represented, with the greatest frequency residing in Florida = 10.9% and Texas = 8%] using the Amazon Mechanical Turk (MTurk), an online survey platform. Participants identified as varying ethnicities: 73.7% identified as White, 11.7% identified as Black, 5.8% identified as Hispanic, 4.2% identified as Asian, and 4.4% as other ethnicities. Participants were paid \$1.55 for their participation in completing the survey. The participants' primary language was English (100%).

#### Design

Two factors, Rhetorical Text Structure and Visual Presence, were combined factorially, resulting in four experimental conditions. The resulting design was a 2-Visual Presence (present vs. absent) X 2-Rhetorical Text Structure (narration vs. problem-solution) between-subjects ANOVA.

#### Materials

The experimental materials consisted of four pieces of media: two documentaries and two podcasts. The experimental materials also consisted of a free recall task, prior knowledge assessment, a measure of implicit attitudes, a measure of

social dominance orientation, five media reaction questions, control questions, and demographic questions.

### Media Content Topic

The two documentaries and two podcasts were written on the social topic of economic inequality—an issue that exists in the global economic system. The content was derived from several sources. Some of these sources included newspaper articles (Anderson, 2015), academic articles (Lyon, 2007; Freidman, 2007), and books (Dabla-Norris et. al., 2015; Dani, & de Haan, 2008). Other sources were attained from YouTube videos. These YouTube videos included interviews with Joseph Stiglitz, an economist and Noble Prize Laureate for his analysis of markets with incomplete information (The Film Archives, 2013; Malcolm, 2013). Other YouTube videos used in this study included interviews with activists, such as Vandana Shiva, and world leaders, like the former British Prime Minister Tony Blair (Dennis Garner, 2013). Additional reputable sources were also used, including the World Economic Forum, (“The global risks 2015 report,” 2015) and Oxfam, an organization combatting the injustice of poverty (Hardoon, Researcher, & GB, 2015).

### Media Commentary

With the information collected on the above social issue, two texts were written as the commentary of the media. The commentary was written in two text forms—narration and problem-solution.

The narration text, a 968-word text containing 59 sentences and 12 paragraphs, with a Flesh-Kincaid grade level = 10.6 (see Appendix 1), was comparable to the problem-solution text, a 967-words containing 59 sentences and 12 paragraphs, with a

Flesh-Kincaid grade level = 10.7 (see Appendix 2). Both of these texts were written so that the same factual information was presented in the same sequential order in both texts. Likewise, the texts were written so that when analyzed with Meyer's (1975a; 1985) text analysis technique, the two texts fell under Meyer's categories of narration rhetorical text structures and problem-solution rhetorical text structures, respectively. The narration text was also written so that when analyzed with Stein and Glenn's (1975) description of a narration, the text fell under their category of narration text structure.

Following Meyer's (1975a) text analysis procedure, the two texts were individually broken down into varying text segments, including single words, clauses, and whole sentences. Next, the varying text segments for each text were separately organized into a hierarchical structure called *content structures*, for the narration text (see Appendix 3) and the problem-solution text (see Appendix 4). Each text segment (written in capital letters in the content structure) was organized in the content structures based on the category of relationship they had to the rest of the text. These relationship categories fell under two main types, rhetorical relations (written underlined) and role relations (written in lowercase letters). Rhetorical relations, including *causation*, *collection*, and *description*, commonly denote main ideas and are towards the higher levels of the content structure. (The levels are considered higher the closer they are to the left of the content structure). Role relations, including *agent*, *instrument*, and *former*, often denote text segments that are detail ideas, and often they are at the lower levels of the content structure. Thus, to avoid any difference in the two texts besides the rhetorical text structure types, the same factual information in each text was written so that it was at the same level in both of their respective content structures. In this way, content that was a

main idea or detail in one text was also a main idea or detail in the other text. At the conclusion of the analysis, the two texts were deemed to have the appropriate rhetorical text structures, narration and problem-solution, which is denoted by the different relationships within the content structures.

The narration text went through further specification. To denote the sequence of events, numbering was used along the far left side of the content structure as suggested by previous researchers (Litteral, 1972; Meyer, 1975). Likewise, to further critique the narration text for appropriate structure, again the narration text was analyzed and organized into a hierarchal structure (see Appendix 5) as specified by Stein and Glenn (1975). Again, but this time by Stein and Glenn's standards, the narration text was deemed appropriate as denoted by its ability to be categorized into a *setting, theme, plot*, and a *resolution* narration text structure.

The resulting texts and content structures were given a 90-95% reliability between the principle researcher and Meyer (personal communication, May 6, 2016).

The two texts were then read and recorded by a male narrator, with Voice Recorder software on a PC computer. The two resulting voice recordings were used as the commentary of the media presentations. The recordings of the narration text and problem-solution text, qualified as two podcasts media forms: the narration podcast and the problem-solution podcast.

### Media Visual Content

To create the documentary media forms, 193 visuals, including both video clips and pictures, were gathered from a number of Internet sources (PressTV News Videos, 2014; Pixabay, 2015).

To ensure that the visuals corresponded to the commentary in the media and were not excessively emotional, 80 participants (mean age = 40.84 years old,  $SD = 14$  years old; 58.3% were female) sampled from MTurk, rated each of the visuals for correspondence to the commentary and for emotional intensity.

Participants rated each visual on correspondence to a given meaning unit from the two commentaries (see Appendix 6). Participants rated the visuals on a 10-point Likert scale from 1-*No correspondence at all* to 10-*High correspondence*. Visuals were accepted when rated with an average rating of five and above for correspondence. Participants also rated the visuals for emotional intensity on a 10-point Likert scale from 1-*Not emotionally intense* to 10-*Highly emotionally intense*. Visuals were subsequently accepted if they had an average rating below 8.5 on emotional intensity. In total, 119 visuals were accepted for use in the documentary media presentations (see Appendix 7).

The 119 visuals were used to create the two documentaries via Adobe Premiere CC 2015 software. The visuals appeared in the exact same sequence and length of presentation in both videos, with both videos resulting in a length of 6 minutes and 45 seconds each. These two videos qualified as two documentary media forms: the narration documentary and the problem-solution documentary. In the two podcasts, the visuals were absent. In short, four media forms were created: the narration documentary, the problem-solution documentary, the narration podcast, and the problem-solution podcast.

#### Media Reaction Questions

Five individual media reaction questions were created to determine participant's affinity toward the media, in addition to participants' desire and intent to both share the media, or seek more information on the content of the media. Participants

answered these questions on a Likert scale from 1-*Not at all* to 5-*Completely*. These five questions were:

1. How much do you like the media you were presented?
2. How much do you desire to share with other the media you were presented?
3. How much do you intend to share with others the media you were presented?
4. How much do you desire more information on the content of the media you were presented?
5. How much do you intend to search for more information related to the media you were presented?

Each of the five questions had a score range of 1-5, with higher scores indicating positive reactions to the media.

#### Free Recall Task

A free recall task was used to assess what participants remembered from the media presentation. In this task, participants were asked to write everything they remembered from the media presentation to which they were exposed. The free recall task permitted participants to include exact phrasing, information as remembered in their own words, and any elaborations they wished to add.

#### Prior Knowledge Measurement

In order to ensure that recall would not be influenced by participant's prior knowledge, a 12-item measurement of prior knowledge was created (see Appendix 8). This measurement instrument was based on information related to the content of the media, such as international economic trading concepts and facts. Thus, the content of the questions was attained from two economic textbooks covering both macroeconomics and

microeconomics (Boyes & Melvin, 2005; Mankiw, 2004). The resulting instrument included 12 multiple-choice questions. One point was awarded for each correct answer. A total of 12 points was possible, with a range of 0 to 12. High scores were considered to indicate a higher prior knowledge of information related to the content of the media presentations. The instrument yielded a reliability of  $\alpha = .51$ .

### Implicit Association Test in General

An implicit measure of attitudes was created to assess participants' attitudes towards structural inequality before and after they were presented with one of the four media forms. To create this measurement, the Implicit Association Test (IAT) technique was used. First, in this section, we will review the IAT in general, and in the subsequent section, we will review the creation and utilization of the Structural Inequality-IAT as used in this study.

The IAT is a word-sorting task, which is used to measure implicit attitudes, or more specifically to show implicit associations people hold between pairs of concepts (Greenwald, Nosek, & Banaji, 2003).

In this task, four category words are presented at the top of the screen, two on the left (i.e. *Hardworking* and *Rich*) and two on the right (i.e. *Lazy* and *Poor*). Additional target words are then presented one at a time in the middle of the screen for the participants to indicate, as quickly as possible, to which of the four category words the target word belonged.

To sort the target words with the correct category words, participants are instructed to strike either a key on the right of the keyboard (i.e. key L) or one on the left (i.e. key A), as corresponding to the categories at the top right or left of the screen,

respectively. In total, participants categorize words seven different times in separate blocks. Some of these blocks are designed as learning blocks, allowing the participant to get accustomed to the task. Other blocks are measuring blocks, used to calculate participants implicit associations between concepts. In the third and fourth measuring blocks, participants indicated how strongly they associate the terms on the left side of the screen, (i.e. *Hardworking* and *Rich*) and on the right side of the screen (i.e. *Lazy* and *Poor*). For the sixth and seventh set of measuring blocks, the words are switched so that the word category pairings on the left (i.e. *Lazy* and *Rich*) and on the right (i.e. *Hardworking* and *Poor*) are changed. A stronger association between one set of category words over another pairing of category words implies a held implicit attitude (Greenwald, Nosek, & Banaji, 2003).

#### Structural Inequality-IAT

In the present investigation, the structural inequality-IAT was created to determine participants implicit attitudes towards structural inequality by comparing and measuring the participants' associations between concepts related to economic status (*Rich* and *Poor*) and work ethic (*Hardworking* and *Lazy*). Each of these categories (*Rich*, *Poor*, *Hardworking*, and *Lazy*) were represented by six target words (see Figure 4.). During the task, participants were instructed to sort each target word with the category word they represented.

## Examples of the IAT Word-Sorting Task

<b>Hardworking Or Rich</b>	<b>Moneyless</b>	<b>Lazy Or Poor</b>
<b>Hardworking Or Rich</b>	<b>Upscale</b>	<b>Lazy Or Poor</b>
<b>Lazy Or Rich</b>	<b>Inactive</b>	<b>Hardworking Or Poor</b>
<b>Lazy Or Rich</b>	<b>Determined</b>	<b>Hardworking Or Poor</b>

Figure 4.

Given that the target words needed to be semantically related to the category word they represent, 79 participants ( $M = 37.08$  years old,  $SD = 14.27$  years old; 68.4% were female), sampled from MTurk, rated 80 words for how well they could be associated with one of the four category terms. The 80 words were attained from an online thesaurus (Dictionary, 2016), with 20 words for each of the four category words. Participants rated each term in its association with the related category word on a scale from 1-*Not associated at all* to 10-*Highly associated*. The six highest rated words for each category word were used in the structural inequality-IAT task (see Table 1.).

**Table 1.** Means and Standard Deviations of the Rating of the Words Selected for the IAT Task.

Category Words	Target Words	Mean (SD)	Category Words	Target Words	Mean (SD)
Rich	Wealthy	4.67(.61)	Hardworking	Diligent	3.56(1.24)
	Prosperous	3.85(1.41)		Dedicated	3.44(1.38)
	Loaded	3.66(1.33)		Determined	3.34(1.23)
	Affluent	3.74(2.09)		Industrious	3.28(2)
	Moneyed	3.27(1.87)		Committed	3.26(1.28)
	Upscale	3.25(1.68)		Persevering	3.08(1.54)
Poor	Moneyless	3.94(1.53)	Lazy	Slothful	3.04(2.37)
	Penniless	3.87(1.51)		Inactive	2.89(1.87)
	Broke	3.87(1.82)		Idle	2.26(2.21)
	Impoverished	3.8(1.72)		Lethargic	2.16(2.39)
	Destitute	3.06(2.23)		Lackadaisical	2(2.76)
	Underprivileged	2.61(2.24)		Loathing	1.99(2.68)

In this task, the participants completed seven individual word-sorting tasks, called blocks (see Table 2.). In each block, all target words were randomly presented twice when their representing category term was at the top of the screen. Thus, in the first block, all target words representing the category terms *Rich* and *Poor* were presented twice (24 word sorting trials). In the second block, all target words representing *Hardworking* and *Lazy* were also presented twice (24 word sorting trials). In the third and fourth block was a combined task with both sets of categories set at the top of the screen where all previously presented target words were again presented twice (48word sorting trials). This same pattern was repeated when the category words *Lazy* and *Hardworking*

switched sides of the screen for the fifth block (24 word sorting trials). In the final two blocks, again the two categories were both presented at the top of the screen. For these two blocks, *Lazy* and *Hardworking* remained on the same side of the screen they were on the fifth block. For these final two blocks, all of the target words were presented twice (48 word sorting trials).

**Table 2.** *The Seven Individual Blocks as They Appeared in the IAT Task.*

No. Block	No. of Trials	Block Purpose	Category Word on the Left	Category Word on the Right
1	24	Learning	Hardworking	Lazy
2	24	Learning	Rich	Poor
3	48	Measuring	Hardworking	Lazy & Poor
4	48	Measuring	Hardworking & Rich	Lazy & Poor
5	24	Learning	Lazy	Hardworking
6	48	Measuring	Lazy & Rich	Hardworking & Poor
7	48	Measuring	Lazy & Rich	Hardworking & Poor

Each block was separated by a segment of instructions that reminded the participants of the task, and forewarned them of which category words would be on either side of the screen. When participants were finished reading the instructions they could continue onto the next block. If the participants incorrectly sorted a word to the wrong category word a red *X* was presented for 500 msec to indicate they made a mistake.

The difference in latency scores between the third and sixth block, and the fourth and seventh block are the basis for the measurement of the IAT scores. For

example, if someone had faster response between *Hardworking* and *Rich*, and *Lazy* and *Poor* then there is between *Lazy* and *Rich* and *Hardworking* and *Poor*, this indicates they have an implicit positive attitude toward structural inequality. However, if there was little difference between these two sets of latency scores—that is it was easy to associate *Rich* with both *Hardworking* and *Lazy*, and likewise *Poor* with both *Hardworking* and *Lazy*—then this exhibits very little positive attitude towards structural inequality.

#### Social Dominance Orientation Scale

Social dominance was measured with the Social Dominance Orientation (SDO) scale. The SDO is a 16 7-point Likert scale designed to assess the degree to which an individual has a preference for hierarchy and inequality between social groups (Pratto, Sidanis, Stallworth, & Malle, 1994). For this scale, participants were asked to rate whether they had a positive or negative feeling towards 16 statements on a Likert scale from 1-*Very Negative* to 7-*Very Positive*. Participants' ratings for statements of inequality were added to the reverse rating scores for statements of equality. The scores ranged from 16 to 120, with higher scores indicating a higher level of social dominance orientation.

The authors of the SDO scale report a high internal reliability ( $\alpha = .91$ ) while a high reliability was also attained in this study ( $\alpha = .93$ ). The authors also demonstrate the discriminant validity of the scale; that is, the scale correlated negatively with attitudes towards affirmative action ( $r = -.44$ ), civil rights ( $r = -.59$ ), and gay rights ( $r = -.32$ ). The authors also demonstrated the convergent validity of the scale; the scale correlated with attitudes for decreased immigration ( $r = .41$ ), sexism ( $r = .51$ ) and the death penalty ( $r = .34$ ).

### Control Questions

Control questions were used to assess any individual factors that might influence participants' perception of the media presentation, and henceforth their recall of the material, and any subsequent attitude change affected by the media. The control questions were:

1. Have you ever taken an Implicit Association Test (IAT), which in this survey is referred to as a Word Category Task? And if yes, approximately how many times have you taken an Implicit Association Test (IAT)?
2. Was it difficult for you to understand what you heard in the media? And if yes, approximately what percentage of the commentary do you believe was difficult for you to understand?
3. Have you ever traveled to a developing country? And if yes, to which countries?
4. Have you ever lived outside of the United States? And if yes, in which countries?
5. In the media, were there any countries, cultures or people groups that were familiar to you? And if yes, which countries, cultures or people groups were familiar to you?
6. Have you ever taken a college course that you feel was related to the material in the media? And if yes, what was the topic of each course?
7. Do you feel like you have ever experienced structural inequality? And if yes, how have you experienced structural inequality?
8. What cultures have you been in close contact with? This could include your own family's culture.

### Demographics question sheet

The demographic questionnaire asked participants to indicate their age, sex, ethnicity, state of residency within the United States, city size, primary language, marital status, political ideology, profession, and income.

### Procedure

Participants accessed the investigation on MTurk. The procedure (see Appendix 9) began with an Internet browser screen in which participants were required to indicate one of seven browsers they were currently using. Only participants that indicated Google Chrome were allowed to continue in the study. After the Internet screen, participants were presented an informed consent. Participants were then presented with IAT instructions and the IAT task thereafter. Participants then answered the prior knowledge questions. On completion of the prior knowledge questions, participants were randomly selected to receive one of the four media presentations, each of which was presented for 6 minutes and 45 seconds. After the media presentation, participants were randomly assigned to receive either an additional IAT task first or the recall task first, then the other task thereafter.

Next, participants completed the SDO scale and the questions about their reactions to the media. Lastly, participants completed control questions, a demographics questionnaire, and they received a debriefing. Study took an average of 43 minutes and 42 seconds to complete.

## Data Source

### IAT Score

The IAT is interpreted by the strength of association individuals implicitly have between varying pairings of category terms, as indicated by latency scores and number of mistakes. The less mistakes and shorter latency scores, the more the participant associates the two concepts (Greenwalk, Nosek, & Banaji, 2003).

Previously Greenwald, McGhee and Schwartz (1998) used a protocol to score the participants IAT, deriving what they called the *IAT effect*. In this protocol, they used the pooled standard deviation as the effect size. Since the original construction of the IAT and original scoring technique, other algorithms have been created (Greenwald, Nosek, & Banaji, 2003; Lane, Banaji, Nosek, & Greenwald, 2007). For this study, we used Lane, Banaji, Nosek, and Greenwald's (2007) (see Table 3.) protocol for calculating *IAT scores* (see Table 3.). In this new algorithm, latency scores from the learning blocks are not included in the analysis, while response errors are still taken into account. The authors reported that resulting IAT scores significantly correlated with self-reports of attitudes ( $r = .753$ ), and had significant internal consistency between participants' individual scores for one IAT ( $r = .748$ ). Higher IAT scores indicate a higher association between *Rich* and *Hardworking*, and *Poor* and *Lazy*, rather than between *Lazy* and *Rich*, and *Hardworking* and *Poor*. A high IAT score is considered having implicit positive attitudes towards structural inequality, given that participants seem to hold that working hard makes a person rich, when in reality some people who work hard may still be poor because of their given circumstances or structural inequalities.

**Table 3.** *The Procedures Used to Calculate Participants' Individual IAT Scores*

No. Step	Procedures and Calculation
1	In the four learning blocks (block 3, block 4, block 6, block 7), delete latency scores above 10,000 msec.
2	Delete participants in which 10% of their latency scores were less than 300 msec.
3	Compute mean latency of correct responses for each of these blocks combined.
4	Replace all incorrect responses by the mean latency computed +600msec.
5	Compute the standard deviation for block 3 and block 6 combined, and likewise, for block 4 and 7 block seven combined.
6	Compute the mean latency again, now including all of the additional new numbers.
7	Compute the mean differences ( $M_{Block\ 6} - M_{Block\ 3}$ ) and ( $M_{Block\ 7} - M_{Block\ 4}$ ).
8	Divide each of the result difference by its associative standard deviation, as attained in step 5.
9	IAT score is the average of the two resulting ratios

### Free recall Score

Participants' free recall responses were scored for how many responses they gave that were comparable to meaning units found in the text. A list of meaning units was derived from the two commentaries (see Appendix 10) and two raters scored all responses. Given that the commentaries were written with the same factual information, there were only slight deviations in meaning units between the texts. These slight differences were indicated in the scoring scheme. In total, there was a high possible score of 81, with an actual range of 0-33. The inter-rater reliability for this scoring reached  $\alpha = .988$ .

## CHAPTER IV

### RESULTS

To ensure that participants were not varying in individual differences in separate variables that were fundamentally related to the experimental design, several 2-Visual Presence (present vs. absent) X 2-Rhetorical text structure (narration vs. problem-solution) Analysis of Variances (ANOVAs) were conducted across four experimental conditions for political ideology, income, education, age and sex. These analyses indicated that participants did not differ significantly between the four experimental conditions' in their political ideology ( $p = .36$ ), income ( $p = .09$ ), education ( $p = .59$ ), age ( $p = .41$ ) or sex ( $p = .25$ ).

All dependent measures were correlated to examine if they were significantly related, and therein, determine if these variables qualified as covariates within subsequent analyses.

After group differences were not discovered and correlations were completed, a series of 2-Visual presence (present vs. absent) X 2-Rhetorical text structure (narration vs. problem-solution) ANOVAs were conducted to examine differences in seven dependent variables between the four experimental conditions. These seven dependent variables included a measure of recall, a measure of change in implicit attitudes towards structural inequality, and five reactions to the media: affinity towards the media (media affinity), desire to share the media (sharing desire), intention to share the media (sharing intent), desire to search for more information on the content of the media (search desire), and intention to search for more information on the content of the media (search intent).

Likewise, an analysis of a 2-Visuals (present vs. absent) X 2-Rhetorical text structure (narration vs. problem-solution) X 2-IAT scores (pre- vs. post-) repeated measure ANOVA was conducted, with IAT scores as the within subjects manipulated variable, to examine the change in attitudes that occurred after the presentation of all the media.

Lastly, a series of multiple regression stepwise analyzes were conducted for each of the media presentations (narration documentary, problem-solution documentary, narration podcast, problem-solution podcast), predicting recall from six predictor variables: prior knowledge, SDO, media affinity, sharing desire, sharing intent, search desire, and search intent. These analyses were conducted to examine which of these predictor variables influenced an increase in participants' recall, and how these variables influenced participants' recall. Each of the analyses was gauged at a .05 level of significance.

#### Effects of Varying Media Forms on Recall

**Hypothesis 1:** Recall will positively correlate with prior knowledge and social dominance orientation.

**Hypothesis 2:** There will be a difference in participants' recall between rhetorical text structures, visual presence (present vs. absent), and in the interaction between these two factors. Recall will be higher with both the narration text structure and with visuals present (documentary) media forms. Recall will be lower with the problem-solution text structure and visuals absent in media form (problem-solution podcast), than in all the other media forms.

Results indicated that recall correlated positively with prior knowledge ( $r = .332, p < .000$ ) and negatively with SDO ( $r = -.182, p = .033$ ). Hypothesis 3 was supported.

Given that recall related to both prior knowledge and SDO, they were both used as covariates in an Analysis of Covariance for recall. Results failed to indicate recall differences between visual presence ( $p = .66$ ), and in the interaction between visual presence and rhetorical text structure ( $p = .29$ ). However, the results indicated that the difference in recall between rhetorical structure was significant  $F(1, 131) = 3.83, MS_{error} = 173.96, p = .05, \text{partial } \eta^2 = .028$ , signifying that recall was higher with the narration text structure ( $M = 13.44, SD = 7.4$ ) than it was with the problem-solution text structure ( $M = 10.89, SD = 7.01$ ) (see Figure 6.). Both of the covariates were significant covariates in this analysis: SDO  $F(1, 131) = 7.07, MS_{error} = 321.46, p = .009, \text{partial } \eta^2 = .05$  and prior knowledge  $F(1, 131) = 13.62, MS_{error} = 619.38, p < .000, \text{partial } \eta^2 = .028$ . Hypothesis 4 was partially supported.

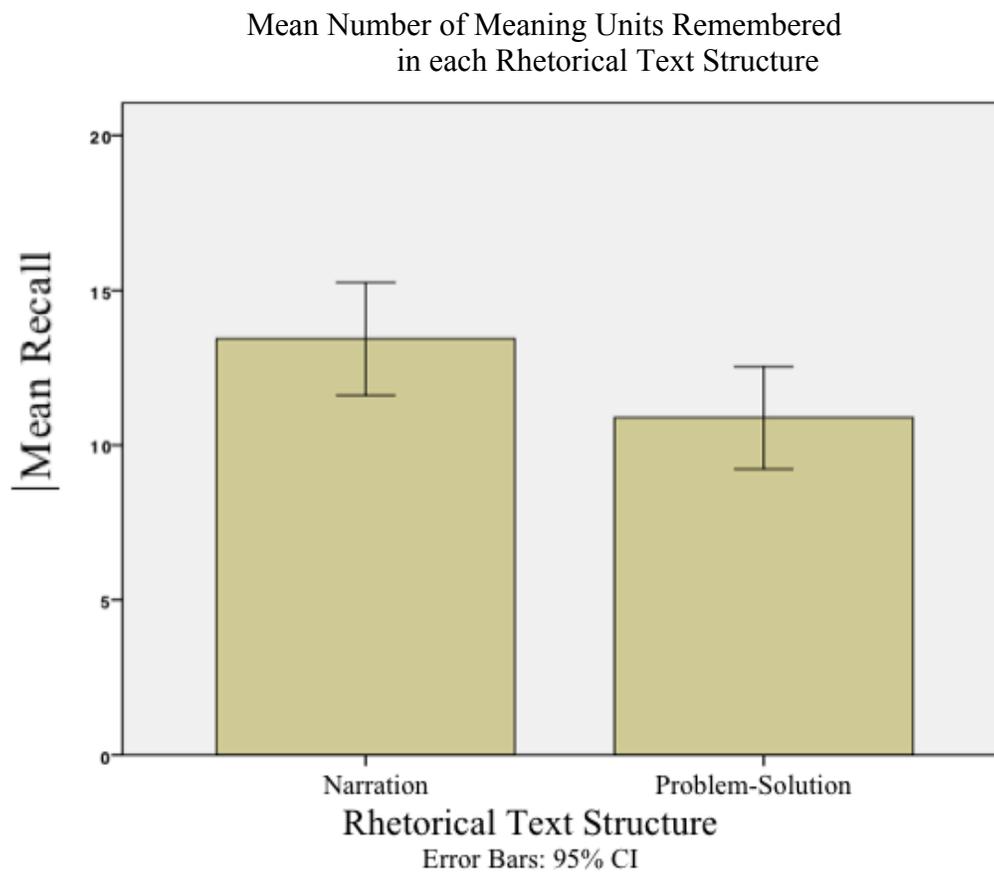


Figure 5.

### Effects of Varying Media Forms on in Predicting Recall

**Hypothesis 3:** Recall will be predicted by prior knowledge, SDO, media affinity, sharing desire, sharing intent, search desire, and search intent, in each of the four media conditions: narration documentary, problem-solution documentary, narration podcast, and problem-solution podcast.

For recall of the media presentations, the multiple regression models were significant for three of the four media forms: narration documentary, problem-solution documentary, and narration documentary.

The significant multiple regression model for recall in the narration documentary media form condition,  $F(1, 31) = 9.44$ ,  $MS_{error} = 282.36$ ,  $p < .000$ ,  $R = .691$ , accounted for 42.7% of the variance in recall. The predictors that were significantly operating in the model were prior knowledge ( $t(1) = 3.06$ ,  $\beta = .398$ ,  $p = .005$ ), SDO ( $t(1) = -3.68$ ,  $\beta = -.498$ ,  $p = .001$ ) and intent to search ( $t(1) = -2.77$ ,  $\beta = -.376$ ,  $p = .009$ ). Thus, participants' recall in the narration documentary media presentation can be reliably predicted to increase when participants have a higher prior knowledge, are lower in social dominance orientation, and have less intention to search for information related to the media.

The significant multiple regression model for recall in the problem-solution documentary media form condition,  $F(1, 36) = 4.66$ ,  $MS_{error} = 198.13$ ,  $p = .038$ ,  $R = .338$ , accounted for 11.5% of the variance in recall. The only predictor that was significantly operating in the model was SDO,  $t(1) = -2.16$ ,  $\beta = -.338$ ,  $p = .038$ . Thus, participants' recall in the problem-solution documentary media presentation can be reliably predicted to increase when participants are lower in social dominance orientation.

The significant multiple regression model for recall in the problem-solution podcast media form condition,  $F(1, 31) = 8.91$ ,  $MS_{error} = 368.47$ ,  $p = .005$ ,  $R = .472$ , accounted for 22.3% of the variance in recall. The only predictor that was significantly operating in the model was prior knowledge,  $t(1) = 2.985$ ,  $\beta = .472$ ,  $p = .005$ . Thus, participants' recall in the problem-solution documentary media presentation can be reliably predicted to increase when participants have a higher prior knowledge.

### Effects of Varying Media Forms on Attitude Change

In regards to the question of this investigation “how does the interaction between visual presence and rhetorical text structure in varying media forms effect what participants remember, and other behavioral measures, namely attitude change, and media reactions?,” these 7 hypotheses were constructed empirically:

**Hypothesis 4:** There will be a significant change in attitudes across all media forms.

**Hypothesis 5:** There will be a difference in participants’ attitude change between rhetorical text structures, visual presence (present vs. absent), and in the interaction between these two factors. Attitude change will be higher with both the narration text structure and visuals present (documentary) media forms. Attitude change will be lower with the problem-solution text structure and visuals absent media form (problem-solution podcast), than in all the other media forms.

Results indicated a significant difference between the pre-IAT and post-IAT scores,  $F(1, 130) = 25.74$ ,  $MS_{error} = 2.4$ ,  $p < .000$ , partial  $\eta^2 = .165$ . These results indicated that positive attitudes as measured with the pre-IAT ( $M = .85$ ,  $SD = .26$ ) were significantly higher than the attitudes measured with the post-IAT ( $M = .66$ ,  $SD = .32$ ), indicating a decrease in positive attitudes towards structural inequality after the media presentations (see Figure 5.). Hypothesis 1 was supported.

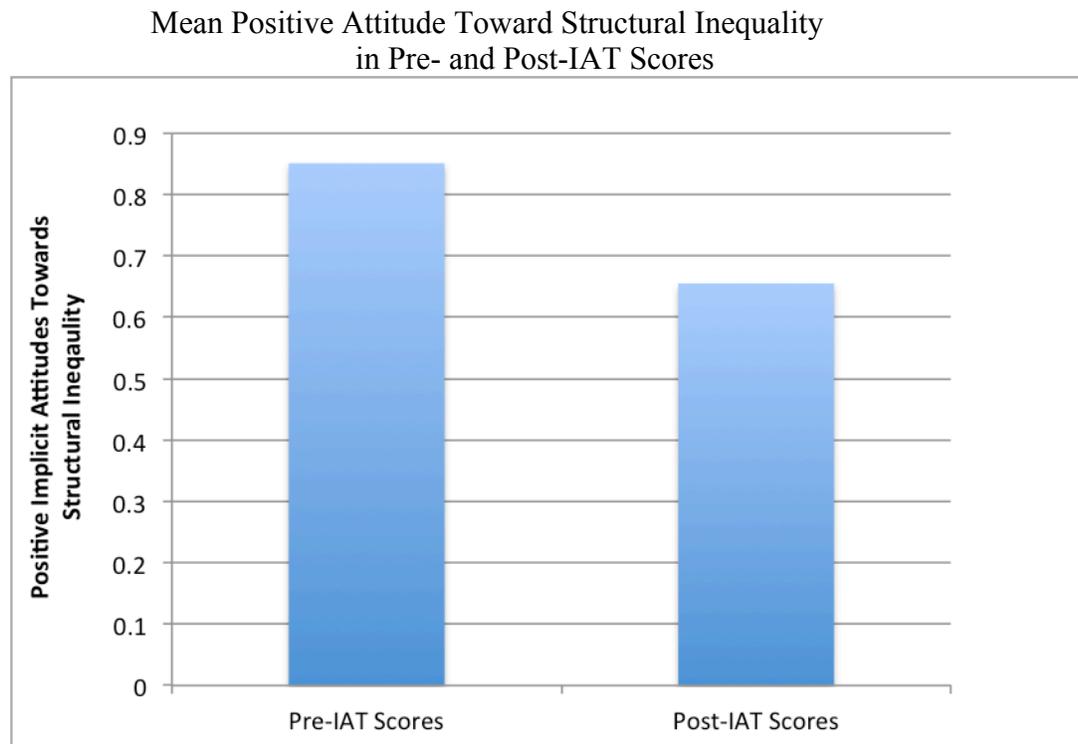


Figure 6.

However, results failed to show that there were significant differences in attitude change across visual presence ( $p = .64$ ), across rhetorical text structures ( $p = .49$ ) or in the interaction between these two factors ( $p = .304$ ). Hypothesis 2 was not supported.

#### Effects of Varying Media Forms on Media Reactions

**Hypothesis 6:** All media reactions would be positively related to each other, and negatively related to SDO.

**Hypothesis 7:** There will be a difference in participants' media reactions between rhetorical text structures, visual presence (present vs. absent), and in the interaction

between the two factors. Media reactions will be higher with both the narration text structure and visuals present (documentary) media forms. Media reactions will be lower with the problem-solution text structure and visuals absent media form (problem-solution podcast), than in all other media forms.

All media reactions positively correlated to one another, while SDO negatively correlated with three of the five media reactions. Hypothesis 6 was partially supported (see Table 5.).

**Table 5. Correlations Between Media Reactions and SDO**

	Sharing Desire	Sharing Intent	Search Desire	Search Intent	SDO
Media Affinity	$r = 0.55^{***}$	$r = 0.45^{***}$	$r = 0.57^{***}$	$r = 0.53^{***}$	$r = -0.18^*$
Sharing Desire		$r = 0.823^{***}$	$r = 0.6^{***}$	$r = 0.71^{***}$	$r = -0.31^{***}$
Sharing Intent			$r = 0.62^{***}$	$r = 0.72^{***}$	$r = -0.13$
Search Desire				$r = 0.74^{***}$	$r = -0.14$
Search Intent					$r = -0.17^*$

Note: \* =  $p < .05$ , \*\* =  $p < .001$ , \*\*\* =  $p < .000$

Several 2 X 2 factorial ANOVAs were used to examine differences in each media reaction between the four experimental conditions, while using each of the other four media reactions and SDO as covariates, respective of their correlation to the variable being examined. Each failed to show significant differences between text structures, visual presence, and within the interaction of these two factors. Hypothesis 7 was not supported.

## CHAPTER V

### DISCUSSION

For this present study, we identified three issues that have not been examined in the research on rhetorical text structure, and the use of visuals in multimedia learning. While learning outcomes have been examined in these two areas of research separately, one, these two factors have not been examined in combination for learning outcomes, nor two, have they been examined for their effect on attitudes nor media reactions, and three, how text and visuals were displayed in the media presentation for this present study. Thus, in this study we determined to examine these effects with the combination of rhetorical text structure on two levels, narration and problem-solution, and visual presence on two levels, visuals present and visuals absent. Four media presentations resulted: narration documentary, problem-solution documentary, narration podcast, and problem-solution podcast. Generally, results indicated that the learning outcomes were higher in the narration rhetorical text structure conditions, that the media presentations together affected attitude, and that there are some variables that can reliably predict recall in three of the four media presentations.

For the first issue—that rhetorical text structure and visual presence have not been combined to examine learning outcomes; we asked participants to recall everything they remembered hearing in the media presentation. We predicated that recall would be higher in the narration conditions compared to the problem-solution conditions based on previous research that identified this effect (Best, Floyd, McNamara, 2008; Englert & Hiebert, 1984). Similarly, we predicted that recall would be higher when visuals were

present compared to when visuals were absent. This prediction was also based on previous research that had identified this effect (Mayer & Anderson, 1991; Mayer & Anderson, 1992; Mayer, 2002). Likewise, in all conditions we predicted that recall would be the lowest in the problem-solution podcast condition, given that this presentation lacked both the narration rhetorical text structure and presentation of visuals.

Results for the issue that rhetorical text structure has not been examined with visual presence for learning outcomes, revealed that there was only an effect of rhetorical text structure on recall. Narration rhetorical text structure was better recalled than was the problem-solution rhetorical text structure. These findings did not reveal the expected results in regards to visuals effect on learning; thus, in opposition to the otherwise stable multimedia principle—words and pictures together are better than words alone in learning environments (Mayer, 2002). This may have been the case given that the documentaries we presented were different from the material used in other research that confirmed the multimedia principle. In this study, the documentaries contained numerous video clips and static pictures of realistic images, whereas other research that confirmed the multimedia principle examined only one or a few static images (Mayer, Hegarty, Mayer, & Campbell, 2005) or animations in the presence of text (Mayer & Anderson 1991; 1992). Likewise, all of our media presentations were presented with spoken text, while in other research, which has also confirmed the multimedia principle, the text was in visual format (Mayer, 1989; Mayer & Gallini, 1990), or if the text was auditory it was presented with animation not realistic images (Mayer & Anderson 1991; 1992; Moreno & Mayer, 1999). In sum, no empirical research has previously studied documentaries in light of the multimedia principle.

To further examine the first issue, recall has not been studied across the combination of rhetorical text structure and visual presence; we examined several variables ability to predict recall in each of the media presentations separately (narration documentary, problem-solution documentary, narration podcast, and problem-solution podcast). The variables we examined as predictors of recall included prior knowledge, social dominance, and each of the five media reactions (media affinity, sharing desire, sharing intent, searching desire, searching intent). We predicted that the media reactions and social dominance would act as predictors of recall because we considered them to reflect interest in the media topic—media reactions as an increase of interest in the media topic, and social dominance as a decrease in interest of the media topic. We based this predication and rationale on research that indicates that interest in a topic increases learning outcomes (Schiefele, & Krapp, 1996; Renninger, Hidi, & Krapp, 2014). Therein, we predicated that higher media reactions and lower social dominance would increase recall.

Results revealed that there was at least one reliable predictor of recall in three of the four media presentations: narration documentary, problem-solution documentary, and problem-solution. In the narration documentary, recall was predicted by higher levels of prior knowledge, lower levels of social dominance, and lower searching intent. For the problem-solution documentary, lower levels of social dominance predicted recall. Lastly, for the problem-solution podcast, higher prior knowledge predicted recall. These findings only partially indicated what we had predicted; largely the results concerning the media reactions goes against the previous research that indicates liking a media presentation

increase deep comprehension (Schiefele, 1991) and motivation to learn (Dweck, 1986; Ryan, Connell, & Deci, 1985).

The lack of the media reactions related to searching for more information as predictors of recall could indicate that those who had a higher recall of the media presentation may have felt they had already learned enough about the topic of the media from the media presentations themselves, therefore they had no need to search for more information related to the media topic. Likewise, the lack of the sharing media reactions as predictors of recall might indicate a number of factors, one, these media reaction questions did not explicitly specify what sharing meant. The participants may have had varying interpretations of the questions, such as sharing with friend verbally or sharing on a social media platform. Therein, they also might have been social factors that would have influenced their desire to share the media, like how others would perceived them after sharing this type of media presentation. Lastly, the lack of the affinity media reaction as a predictor of recall, and the other four media reactions, may have been due to the lack of sensitivity of the measurement, given that they were each answered on a 5-point Likert scale.

To address the second issue—that research in rhetorical text structure and visual presence have focused on learning outcomes, and not on their affects on attitudes; we determined to examine these factors affect on attitude change. First, to examine the effects of these two factors on attitudes, we measured implicit attitudes before and after the media presentations, and analyzed attitude change across all media forms together and separately. We predicted that attitude change would occur across all of the media presentations together. This predication was based on previous research that indicates

attitudes were influenced by media presentations containing words only, such as persuasive text (Sinatra, Kardash, Taasobshirazi & Lombardi, 2013), media presentations containing with both words and visuals, such as movies (McHale, 2007), and magazine advertisements (Kang, 1997). Results indicated that there was a change in attitude across all media presentations together, thus this finding is in agreement with previous research on attitudes.

To address the second issue further, we examined attitude change between each media presentation. We predicted that attitude change would be the highest in the narration conditions and conditions with visuals present, and lowest for the problem-solution podcast, which lacked both narration rhetorical text structure and visual presence. These predictions were based on research that indicates the effect of both visuals (Bozdogan, 2011; Kees, Burton, Andrews, & Kozup, 2006), and separately, the effect of narration (Taylor & Thompson, 1982), on affecting attitudes. However, the results indicated no difference in attitude change between the four media presentations, and therein, these results are in opposition to the previously stated research findings.

We might have not seen the effects we predicted because the research we based our predictions did not compare text types or visual variance as we had designed our study to do. Rather the previous research has shown that both narration (Taylor & Thompson, 1982) and visuals (Bozdogan, 2011; Kees, Burton, Andrews, & Kozup, 2006) have been used to change attitudes, but these effects were not measured against other text structure types or with the absence of visuals. Thus, it may be the case that the problem-solution text structure was able to effect attitude change as much as the narration

rhetorical text structure. As for the visual effect, it might depend on the type of visuals used and the context of the issue the visual is meant to change attitudes towards.

Lastly, to address the third issue—the lack of research on the influence of rhetorical text structure and visual presence on reactions to media presentations; we asked participants to indicate on a 5-point Likert scale their media affinity, searching desire, searching intent, sharing desire, and sharing intent. Given the general lack of research on reactions to media presentations, we predicted that the effects on the media reactions would reflect the predicted effects we formed for both recall and attitude change. Thus we predicted attitude change would be higher with narration rhetorical text structure compared to problem-solution rhetorical text structure, and with visual presence compared to visual absence. We also predicted attitude change would be lowest for the problem-solution podcast, given that it lacked both narration rhetorical text structure and visual presence. These predictions were partially based on research that indicates an increase of media affinity when visuals were present (Bryant, Brown, Silberberg, & Elliot, 1980 Brookshire, Scharff, & Moses, 2002 Levie, & Lentz, 1982). Results indicated that there were no significant differences in media reactions between the four media presentations. This finding is in opposition to the research that indicates visuals affect on affinity towards the media presentation. This may be the case given that the measurement of the media reactions were measured on a 5-point Likert scale, and may not have been sensitive enough to the variance in participants reactions. Likewise, the media reaction questions might have been ambiguous and did not specify what was meant by sharing and searching for more information.

### Practical Implications

These findings have several implications. First, using the narration rhetorical text structure in auditory form in media presentations can increase recall more than the problem-solution rhetorical text structure. Likewise, a number of variables are predictors of recall in varying media forms. Thus, if creating a narrative documentary, recall would likely increase if participants have higher prior knowledge, lower social dominance orientation, and less intent to search for information related to the content of the media presentation. However, if creating a problem-solution documentary, only low levels of social dominance would act as a predictor of recall. Lastly, when creating a problem-solution documentary it can be expected that higher prior knowledge will predict recall.

As a result of the lack of significant results regarding attitude change across the combination of rhetorical text structure and visual presence in the media forms, this study indicates no implications for changing attitudes towards a social topic via any specific media differences. However, because attitude change occurred across all media forms together, this implies that at least any form of verbal information people receive about a social topic has the potential to change their attitudes toward that topic, regardless of rhetorical text structure, and visuals being present or absent.

Lastly, the current findings imply that reactions to the media will not be affected by the variance of rhetorical text structure nor visual presence.

### Limitations

One limitation of this study is that we cannot say definitely that the prior knowledge measurement measured prior knowledge related to the content of the media

presentations. Although, the prior knowledge measurement correlated with the learning outcome, this measurement was only validated with content validity, in that it seemed to reflect the content topic of the media presentations. Likewise, it is not definitively clear if the media reactions measured reflect interest in the media.

An additional limitation of this study is that we did not use a control group; therefore we cannot be sure that attitude changes resulted from participants' familiarity with the implicit measurement, the IAT task, which they took twice. Thus, latency scores, which indicate attitudes towards the categories of concepts, may have been significantly shorter based only on participants learning the task. However, it is impossible to pull apart these effects—the effect of learning the task and the effect of the media presentations.

### Conclusions

In this study, results indicate that narration rhetorical text structure increases recall more than the problem-solution rhetorical text structure. The results also indicate that attitude change towards a social topic only occurs with exposure to information on a topic and does not occur differently across the combination of rhetorical text structure and visual presence. Likewise media reactions were not affected by rhetorical text structure and visual presence. Furthermore, in the narration documentary, higher recall is predicted by higher prior knowledge, lower social dominance, and lower intent to search for more information; in the problem-solution documentary, recall is be predicted by lower intentions to lower levels of social dominance; in the problem-solution podcast, recall is predicted by prior knowledge.

To amend the issues with the implicit attitude measure, future studies should utilize a control group to determine whether attitude change is a function of the media presentations or a function of learning the measurement task. Future research, might also want to determine a more valid measure of prior knowledge. Likewise, it might be useful to expand what media reactions validly measure interest in the media.

In future research, learning outcomes and attitude change should be further studied across additional rhetorical text structures in these media forms, including the four other major rhetorical text structures as indicated by Ray and Meyer (2011): *description*, *comparison*, and *causation*. Importantly, future search should understand why the multimedia principle was not supported in this study. They could further understand if it was an effect of length of video or effect of video visual type (i.e. animation, realistic).



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APPENDIX 1

## Appendix 1. Media Commentary: Narration Rhetorical Text Structure.

Mehesh was a farmer in a rural area. Then he moved to Mumbai India where he hoped to find better work opportunities. He became a manufacture worker in Mumbai, but with his new income he still lived in extreme poverty, that is he was living on \$1.25 or less a day.

In fact, his family of 7 had to live in the slums in a one-room shanty, made largely of plastic and tarp. They lacked running water, electricity, and proper sanitation. He and his family were also malnourished. Mehesh is one of many victims of structural inequality that exist in the global economy, which keep the poor poor and the rich rich. In India the economy is a growing. India has over 14,000 millionaires, yet devastatingly enough 78 million people still live in poverty like Mehesh.

Mehesh's circumstances compared to the rich are an example of the economic inequalities that exist between the rich and the poor. In fact, the very wealthiest 1% of the world's population own over 50% the world's wealth. Then on the other hand, the poorest half of the world's population only own 1% of the world's wealth. These inequalities effecting people like Mehesh are held in place by systems in society, like those of business and government. Mehesh has had little to no power to change these systems, and therefore he has remained poor. International trade agreements are an example of the systems that create structural inequalities that keep individuals like Mehesh in poverty, while making others rich.

In fact, because economic competition with other countries inflated seed prices, Mehesh could not by the seeds necessary to farm. Eventually, he lost his farm, and he became very heartbroken and depressed. He even considered committing suicide. Many other farmers such as Mehesh have been devastated by their loss of their livelihoods. And like Mehesh, many considered suicide, some even choosing that. In fact, in one year alone, over 14,000 Indian farmers committed suicide.

International trade agreements also allow companies to make direct foreign investments in other countries. This usually only benefits a few elite and marginalizes the labor force, forcing people like Mehesh into poor work situations. Sadly, the World Bank and the International Monetary Fund enforces devastating trade agreements in countries like India, taking away India's power to protect its own economy.

Broken tax systems are another example of systems that create structural inequalities effecting Mehesh. This is largely because of illicit financial flows, which is money that illegally leaves a country without being taxed. In one year alone, many countries, such as India, have allowed over 900 billion dollars to leave their countries without being taxed. Thus, the government of India is unable to provide social services for Mehesh and his family. Mehesh's family have never benefited from social services, such as education or healthcare. In fact, without healthcare, HIV continues to spread in countries like India.

Mehesh decided to find different employment in Mumbai after loosing his farm, as an attempt to overcome these structural inequalities. In Mumbai, Mehesh was able to find work in a factory, but his income was not enough to support their family. His hours and pay were also inconsistent, and he was even injured on the job. His employers did not even pay for his injury nor did they fix the equipment that hurt him.

Since Mehesh could not overcome the structural inequality in his new employment, he decided to protest against his company for better treatment. To organize a protest, he first needed to gather other coworkers to protest with him. He spoke to them about the importance of safe facilities and consistent work. In the end, he successfully gathered many employees to protest with him.

However, Mehesh's protests did not bring about any changes. This is a good example of the powerlessness that many like Mehesh experience, because of structural inequality. After about a year of harsh and unfair work, Mehesh was unable to get out of poverty. However, he was one of the very few that had a chance to be a part of a fair trade group. In a fair trade group, produce buyers are required to keep contracts with small family farms, and provide the farmers with pre-financing in the form of loans. Again, Mehesh decided to change his employment in hopes of overcoming structural inequality.

First, Mehesh needed to get his extended family members to become part of the fair trade group with him. He explained to them what a good opportunity this would be for them, and eventually they agreed. By working in this fair trade group, Mehesh finally had fair wages and fair labor treatment.

Mehesh enjoyed this work for many years, but eventually wanted social services for his family. As he had become a more influential person in his community, he asked his community to create a local tax system to provide such services. He met with local government leaders and told them about the benefits of a tax system would bring to the community. They decided to create a small local tax system just as Mehesh had suggested. Mehesh was pleased because finally his children would benefit from social services, allowing them to get an education and receive healthcare.

Although Mehesh was able to overcome some structural inequality and get out of extreme poverty, this is very rare in India. Many remain in extreme poverty. Mehesh sees that there is still a need for larger systematic changes. In particular, he sees the need for a larger tax system that would prevent illicit financial flows. Also, in the future, Mehesh wants international trade agreements to protect laborers and to be fair for every country. In this way, countries would be allowed to protect their economies. With these changes, structural inequality in the global economy could be eradicated.

APPENDIX 2

## Appendix 2. Media Commentary: Problem-solution Rhetorical Text Structure.

In poor developing countries there are economic problems that severely affect people's everyday lives. In these countries some people have chosen to leave farming in hopes of finding better work opportunities in urban cities. Many of them work as manufacture workers in urban cities, yet the issue is that they still live in extreme poverty—that is they live on \$1.25 or less a day.

Some of them are very malnourished and have to live with up to 7 people in one-room shanties in slums. These shanties are made largely of plastic and tarp, and usually lack running water, electricity, and proper sanitation. The base problem is the structural inequality that exists in the global economy, which victimizes those living in poor circumstances, keeping the poor poor and the rich rich. In some developing countries the economy is growing. Take for example India, which has over 14,000 millionaires, yet devastatingly 78 million of their citizens still live in poverty.

The impoverished circumstances of millions, compared to the rich, is an example of the severe economic inequalities that exist between the rich and the poor. In fact, the very wealthiest 1% of the world's population owns over 50% the world's wealth. Unfortunately, the poorest half of the world's population only own 1% of the world's wealth. These problematic inequalities effecting so many are held in place by systems in society, such as business and government. The poor have little power to change these systems and remain poor.

International trade agreements are one of the systems that create structural inequality that keep many in poverty and make only some rich. Some farmers could not continue farming because they were unable to buy the seeds necessary to farm. Competition with other countries had inflated seed prices. This has been heartbreaking and depressing, with some considering suicide. Many farmers have been devastated by the loss of their livelihoods and have decided to commit suicide. In fact, in one country, over 14,000 farmers committed suicide in one year alone.

International trade agreements also allow companies to make direct foreign investments in developing countries. This is an issue because this usually only benefits a few elite and marginalizes the labor force. System's, such as these that exist in the global economy, force individuals into poor work situations. Sadly, the World Bank and the International Monetary Fund enforces devastating trade agreements in developing countries, taking away the countries' power to protect their own economies.

Broken tax systems are another example of a problematic system that creates structural inequalities. This is largely because of illicit financial flows, which is money that illegally leaves a country without being taxed. Over 900 billion dollars have left numerous countries without being taxed. Thus, governments with broken tax systems have little money to provide social services to the poor. They do not offer their citizens' education or medical care. Without healthcare, HIV continues to spread in developing countries.

Some have tried to overcome the structural inequalities that caused their struggles with poverty by finding different employment. Some of them have moved to urban cities and started working in factories. In this employment, they hope to make an income that is enough to support their families, but often this is not the case. Many times their work

hours or pay are inconsistent. Also, employees have gotten hurt on the job, while their employers do nothing to compensate them nor do they fix the facilities.

With unreliable ways of solving the problem of structural inequality effecting their income, employees often protest against their companies for better treatment. They believe they deserve safe facilities and consistent work. First, they need to convince other employees to join them in the fight against their economic problems. Once they have done this, they can organize and proceed with the protests. Sadly, these protests often fail to solve their work issues and the companies make no changes. This is a good example of the powerlessness that many poor experience from structural inequality.

With harsh and unfair employment, many are unable to get out of poverty. One reliable answer to these severe economic problems is fair trade groups. As part of a fair trade group, produce buyers are required to keep contracts with small family farms and provide pre-financing in the form of loans. The few people, who are able to work as part of a fair trade group, have employment that can help solve the problem of structural inequality.

However before attaining this solution, first individuals need to convince family members to become part of a fair trade group. They may tell them about the benefits, such as fair wages and fair treatment. In the end, hopefully their families are convinced.

Although fair trade groups are very good for farmers, there is still a need for social services. In fact, those in fair trade groups often become influential in their community and can encourage their community members to create a local tax system. They may gather their local leaders and explain to them the benefits of a tax system. Sometimes these tax systems are created and all the families benefit. Their children are able to get an education and receive healthcare.

Although, some are able to overcome structural inequality problems through fair trade groups and get out of extreme poverty, this solution is very rare. Many have remained extremely poor. Some people realize there is still a great need for larger systematic changes to solve these problems in developing countries. First, it would be beneficial to create larger tax systems that would prevent illicit financial flows. Likewise, in the future, international trade agreements should protect laborers and be fair for all countries. This would allow developing countries to protect their economies. With these changes, the problem of structural inequality in the global economy could be eradicated.

APPENDIX 3

## Appendix 3. Content structure for the narration rhetorical text structure.

#'s denote the order of events in actual time.

collection - time order

3-BECAME

agent

MEHESH

former

FARMER

latter

MANUFACTURER

description - attribution

LIVES IN EXTREME POVERTY

description - specific

\$1.25 OR LESS A DAY

description - specific

IN THE SLUMS FAMILY OF 7 IN ONE ROOM MADE OF

TARP AND PLASTIC LACKING RUNNING WATER,

ELECTRICITY, PROPER SANICATION, MALNOURISHED

description - setting - location

MUMBAI, INDIA

causation - explanation

TO FIND BETTER WORK OPPORTUNITIES

description - setting - location

INDIA

description - specific

GROWING ECONOMICALLY

description - specific

14,800 MILLIONAIRES, YET 78 MILLION PEOPLE LIVE IN  
POVERTY.

1-WAS A VICTIM, HAS LITTLE POWER, STAYS POOR

agent

MEHESH

causation - explanation

STRUCTURAL INEQUALITY IN THE GLOBAL ECONOMY

description - specific

FINANCIAL DIFFERENCES BETWEEN THE RICH AND THE

POOR 50% WEALTH OWNED BY 1% OF THE WORLD'S

POPULATION, WHILE 1% OF THE WORLD'S WEALTH IS OWNED

BY ONLY 50% OF THE WORLD'S POPULATION.

description - specific

KEEP THE POOR POOR AND THE RICH RICH

causation - explanation

BUSINESS AND GOVERNMENT SYSTEMS THAT PERPETUATE

## INEQUALITIES.

description - specific

INTERNATIONAL TRADE AGREEMENTS

description - specificECONOMIC COMPETITION WITH OTHER  
COUNTRIESdescription - specific

INFLATES PRICES

description - specific

DIRECT FOREIGN INVESTMENTS

description - specificBENEFITS THE ELITE AND MARGINALIZES  
THE POORcausation- explanationENFORCED IN DEVELOPING COUNTRIES BY THE  
WORLD BANK AND THE INTERNATIONAL  
MONETARY FUND.description - specific

ILLICIT FINANCIAL FLOWS

description - specificMONEY ILLEGALLY LEAVE THE COUNTRY  
WITHOUT BEING TAXEDdescription - specific

MORE THAN 900 BILLION DOLLARS

causation – explanationNO GOVERNMENT MONEY FOR SOCIAL  
SERVICEScausation – explanation

FAMILY WAS WITHOUT EDUCATION

causation – explanation

FAMILY WAS WITHOUT HEALTHCARE

causation – explanationHIV INCREASING IN DEVELOPING  
COUNTRIES

## 2-LOSE FARM AND CONSIDERED SUICIDE

agent

MEHESH

causation - explanationCOULD NOT BUY PATENTED SEEDS BECAUSE THEY WERE TOO  
EXPENSIVEcausation - explanation

HEARTBROKEN, DEPRESSED

description - attribution

DEVASTATING TO MANY FARMERS, LEADING TO MANY

## SUICIDES. 14,000 INDIAN FARMERS COMMITTED SUICIDE

## 4-DECIDES TO PROTEST

agent

MEHESH

causation - explanation

WORK INCONSISTENT, UNFAIR WAGES, AND UNSAFE FACILITIES.

description - specific

HE GOT HURT AND THE OWNER'S DID NOTHING TO HELP.

## 5-ORGANIZED

agent

MEHESH

patient

PROTESTS

## 6-ASKED TO PROTEST

agent

MEHESH

patient

COWORKERS

causation - explanation

EXPLAINED THE IMPORTANCE OF SAFE FACILITIES AND

CONSISTENT WORK

## 7-PROTESTS

agent

MEHESH

patient

THE COMPANY

latter

NO CHANGES WERE MADE BY THE COMPANY

## 8-HAD AN OPPORTUNITY FOR BETTER EMPLOYMENT

agent

MEHESH

patient

FAIR TRADE GROUPS

description - specific

FOR SMALL FAMILY FARMS

COMPANIES THAT BUY FROM FARMS MUST KEEP

CONTRACTS, PAY FAIR PRICES AND OFFER PRE-FINANCING

## 9-CHANGE EMPLOYMENT

agent

MEHESH  
 former  
 MANUFACTURER  
 latter  
 FARMER

10-CONVINCE FAMILY TO BE A PART OF A FAIR TRADE GROUP

agent  
 MEHESH  
 patient  
 EXTENDED FAMILY  
 latter  
 THEY AGREED  
 instrument  
 INFORMATION ABOUT HOW THIS WAS A GOOD OPPORTUNITY

11-BECAME

agent  
 MEHESH  
description - attribute  
 FARMER IN A FREE TRADE GROUP  
description - attribute  
 RECEIVING FAIR WAGES AND TREATMENT  
description - attribute  
 INFLUENTIAL PERSON IN HIS COMMUNITY

12-ENCOURAGE TO MAKE A LOCAL TAX SYSTEM

agent  
 MEHESH  
 patient  
 LOCAL GOVERNMENT LEADERS  
 latter  
 LOCAL TAX SYSTEM WAS CREATED SO THAT SOCIAL SERVICES  
 WERE AVAILABLE.

13-WAS PLEASED

agent  
 MEHESH  
 benefactive  
 HIS CHILDREN  
causation - explained  
 RECEIVED SOCIAL SERVICES  
description - attribute  
 HEALTHCARE & EDUCATION

## 14-OVERCAME

agent

MEHESH

patient

SOME STRUCTURAL INEQUALITY

## 15-BELIEVED IN A NEED FOR

agent

MEHESH

patient

LARGER TAX SYSTEM'S

description - specific

PREVENTING ILLICIT FINANCIAL FLOWS

patient

REGULATIONS OF INTERNATIONAL TRADE AGREEMENTS

description - specific

PROTECT THE WORKERS

description - specificMAKING THEM FAIR TO BOTH DEVELOPING COUNTRIES, NOT  
JUST DEVELOPEDdescription - specific

COUNTRIES CAN PROTECT THEIR ECONOMIES

APPENDIX 4

## Appendix 4. Content structure for the problem-solution rhetorical text structure.

responseproblemcollection

BECAME

agent

MANY LIVING IN POVERTY

former

FARMERS

latter

MANUFACTURER

description - attribution

LIVES IN EXTREME POVERTY

description - specific

\$1.25

description - specificIN THE SLUMS FAMILY OF 7 IN ONE ROOM MADE OF  
TARP AND PLASTIC LACKING RUNNING WATER,  
ELECTRICITY, PROPER SANICATION MALNOURISHEDdescription - setting - location

URBAN CITY

causation – explanation

TO FIND BETTER WORK OPPORTUNITIES

description - setting - location

DEVELOPING COUNTRY, LIKE INDIA

description - specific

GROWING ECONOMICALLY

description – specificINDIA HAS 14,800 MILLIONAIRES, YET 78 MILLION PEOPLE LIVE  
IN POVERTY.

ARE A VICTIM OF, HAS LITTLE POWER, STAYS POOR

agent

MANY LIVING IN POVERTY

causation - explanation

STRUCTURAL INEQUALITY IN THE GLOBAL ECONOMY

description - specificFINANCIAL DIFFERENCES BETWEEN THE RICH AND THE  
POOR 50% WEALTH OWNED BY 1% OF THE WORLD'S  
POPULATION, WHILE 1% OF THE WORLD'S WEALTH IS OWNED  
BY ONLY 50% OF THE WORLD'S POPULATION.description - specific

KEEP THE POOR POOR AND THE RICH RICH

causation - explanation

BUSINESS AND GOVERNMENT SYSTEMS THAT PERPETUATE  
INEQUALITIES.

description - specific

INTERNATIONAL TRADE AGREEMENTS

description - specific

ECONOMIC COMPETITION WITH OTHER  
COUNTRIES

description - specific

INFLATES PRICES

description - specific

DIRECT FOREIGN INVESTMENTS

description - specific

BENEFITS THE ELITE AND MARGINALIZES  
THE POOR

causation- explanation

ENFORCED IN DEVELOPING COUNTRIES BY THE  
WORLD BANK AND THE INTERNATIONAL  
MONETARY FUND.

description - specific

ILLICIT FINANCIAL FLOWS

description - specific

MONEY ILLEGALLY LEAVE THE COUNTRY  
WITHOUT BEING TAXED

description - specific

MORE THAN 900 BILLION DOLLARS

causation – explanation

NO GOVERNMENT MONEY FOR SOCIAL  
SERVICES

causation – explanation

THE POOR ARE WITHOUT EDUCATION

causation – explanation

THE POOR ARE WITHOUT HEALTHCARE

causation – explanation

HIV INCREASING IN DEVELOPING  
COUNTRIES

LOSE FARM AND CONSIDERED SUICIDE

agent

MANY LIVING IN POVERTY

causation - explanation

COULD NOT BUY PATENTED SEEDS BECAUSE THEY WERE TOO  
EXPENSIVE

causation - explanation

HEARTBROKEN, DEPRESSED

description - attribution

DEVASTATING TO MANY FARMER, LEADING TO MANY  
SUICIDES 14,000 INDIAN FARMERS COMMITTED SUICIDE

DECIDES TO PROTEST

agent

MANY LIVING IN POVERTY

causation - explanation

WORK INCONSISTENT, UNFAIR WAGES, AND UNSAFE FACILITIES.

description - specific

MANY EMPLOYEES WERE GETTING HURT AND THE OWNER'S  
DID NOT FIX THE FACILITY.

ORGANIZES

agent

MANY LIVING IN POVERTY

patient

PROTESTS

ASKED TO PROTEST

agent

MANY LIVING IN POVERTY

patient

COWORKERS

causation - explanation

EXPLAINED THE IMPORTANCE OF SAFE FACILITIES AND  
CONSISTENT WORK

PROTESTS

agent

MANY LIVING IN POVERTY

patient

THE COMPANY

latter

NO CHANGES WERE MADE BY THE COMPANY

solution

collection

HAD OF AN OPPORTUNITY FOR BETTER EMPLOYMENT

agent

FEW LIVING IN POVERTY

patient

FAIR TRADE GROUPS

description - specific

FOR SMALL FAMILY FARMS

COMPANIES THAT BUY FROM FARMS MUST KEEP

CONTRACTS, PAY FAIR PRICES AND OFFER PRE-FINANCING

CHANGE EMPLOYMENT

agent  
 FEW LIVING IN POVERTY  
 former  
 MANUFACTURER  
 latter  
 FARMER

CONVINCE FAMILY TO BE A PART OF A FAIR TRADE GROUP

agent  
 FEW LIVING IN POVERTY  
 patient  
 EXTENDED FAMILY  
 latter  
 THEY AGREED  
 instrument  
 INFORMATION ABOUT HOW THIS WAS A GOOD OPPORTUNITY

BECAME

agent  
 FEW LIVING IN POVERTY  
description – attribute  
 FARMER IN A FREE TRADE GROUP  
description - attribute  
 RECEIVING FAIR WAGES AND TREATMENT  
description - attribute  
 INFLUENTIAL PEOPLE IN THEIR COMMUNITY

ENCOURAGE TO MAKE A LOCAL TAX SYSTEM

description - attribute  
 FEW WHO HAVE INFLUENCE  
 patient  
 LOCAL GOVERNMENT LEADERS  
 latter  
 SOME LOCAL TAX SYSTEM WAS CREATED SO THAT SOCIAL  
 SERVICES  
 WERE AVAILABLE.

BENEFITED

agent  
 MANY LIVING IN POVERTY  
 benefactive  
 THEIR CHILDREN

causation - explained  
 RECEIVED SOCIAL SERVICES  
description - attribute  
 HEALTHCARE & EDUCATION

OVERCAME  
 agent  
 FEW LIVING IN POVERTY  
 patient  
 SOME STRUCTURAL INEQUALITY

BELIEVE IN A NEED FOR  
 agent  
 SOME WHO UNDERSTAND THE CIRCUMSTANCES  
 patient  
 LARGER TAX SYSTEM'S  
description - specific  
 PREVENTING ILLICIT FINANCIAL FLOWS  
 patient  
 REGULATIONS OF INTERNATIONAL TRADE AGREEMENT  
description - specific  
 PROTECT THE WORKERS  
description - specific  
 MAKING THEM FAIR TO BOTH DEVELOPING COUNTRIES, NOT  
 JUST DEVELOPED  
description - specific  
 COUNTRIES CAN PROTECT THEIR ECONOMIES

APPENDIX 5

## Appendix 5. Narrative Text Structure.

**Story:** “Global Economic Structural Inequality”

**Setting**

**Character:** Mehesh

Was a farmer.

Became manufacture worker.

In an urban city.

Living in extreme poverty \$1.25/day or less.

His family was malnourished.

**Location:**

India

14,800 millionaires, 78 million live in poverty.

Mumbai, slums, housing made of plastic and tarps, 7

people to a room with poor sanitation, electricity, running water.

**Time:** Present

**Theme**

**(Event)\*:**

Economic structural inequality,

Large economic differences between the rich and the poor,

50% of the worlds wealth is owned by 1% of the worlds population, 1% of worlds wealth is owned by half of the world’s population.

Businesses and governmental systems create perpetuate these inequalities.

Disadvantaged groups without power.

International Trade Agreements.

Developing countries competing with developed countries.

Farmers are not able to pay for patent expensive seeds.

14,000 farmers committed suicide in one year.

Allow direct foreign investments that change the job force structure so that few elite benefit and the majority of the labor force is marginalized.

Trade agreements enforced by the World Banks & International Monetary Fund

Poor tax systems

Financial Illicit Flows

Money moving between countries illegally

without being taxed.  
 991 billion occurred in one year.  
 The money is not taxed, no  
 governmental money for social services,  
 like education and healthcare.  
 HIV continues to spread in India.

**Goal:** Overcome economic structural inequalities.

**Plot** (adheres to the theme)

**Episode\*:**

**Sub-goal:** Changing employment because he lost his farm.

**Attempt\*:** Move into urban city and start working in a factory to earn a larger income.

Hired for only a short amount of time in poor work conditions for little pay.

**Episode\*(embedded):**

**Sub-goal:** Get better laborers treatment.

**Attempt\*:** Protested to change in hopes to change companies.

**Episode \*(embedded):**

**Sub-goal:** get workers to protest

**Attempt:** asked workers to protest with him.

**Outcome:** they agreed to and did protest with him.

**Outcome:** Protests brought about no change.

**Outcome:**

Unable to improve living economic circumstances.

**Episode\*:**

**Sub-goal:** Returning to farming via a fair trade group.

**Attempt\*:** Join a fair trade groups.

Organizations made of small family farm producers, requiring fair treatment of producers.

Buyers are required to keep contracts, offer farmers pre-financing in the form of loans.

**Episode\*(embedded):**

**Sub-goal:** Convince extended family to become part of the fair trade group.

**Attempt\*:** Tell them it was a good opportunity.

**Outcome:** They agreed to become part of a fair trade

group.

**Outcome:**

Mehesh was able to improve economic circumstances.

**Episode\*:**

**Sub-goal:** Get the local tax systems to function properly.

**Attempt\*:** Encouraged local leaders to create a local tax system, and told them of the benefits it would bring their community by providing social services to everyone.

**Outcome:** The community decided to create a local tax system.

Social services were offered to every family.

Including education and healthcare.

**Resolution**

**Event, State**

Mehesh was one of few who is able to overcome some structural inequality.

Work in fair conditions.

His children received healthcare and education, making them skilled workers.

Mehesh still believes there is a need for:

Larger government to regulate illicit financial flows

Fair international trade agreements

Allowing developing countries to protect their economies.

Requiring fair labor treatment.

APPENDIX 6

Appendix 6. The list of meaning units derived from the commentary texts.

<b>List of Meaning:</b>
1-city poverty in poor countries
2-impooverished housing
3-economic inequality
4-extreme economic inequality
5-growing economic inequality
6-extreme wealth
7-extreme poverty
8-business systems causing inequality
9-trade agreements between countries/world leaders
12-poor farmers
13-difficulty in farming
14-seeds for sale
15-depressed farmers
10-companies investing in poor countries
11-laborers treated badly
16-international organizations that are controlling poor countries
17-poverty stricken
18-financial gains made by tax aversion
19-lacking government paid education
20-lacking government paid healthcare
21-sickness and dying
22-seeking work in a city
23-good factory work in a poor country
24-bad factory work in a poor country
25-people protesting in a poor countries
26-poverty stricken
27-fair negotiating
28-companies keeping fair contracts with workers
29-family farming
30-hard-working
31-improved wellbeing and work in farming
32-needy children
33-gathering community leaders
34-organizing a community tax system
35-poor children receiving schooling
36-Farming sustainability in a poor country

37-poverty
38-structured tax system
39-improved wellbeing and work in manufacturing

APPENDIX 7

Appendix 7. Means and standard deviations of each visual correspondence to the text and emotional intensity.

Visuals	Ratings for the Correspondence of the Visual to the Meaning Unit		Ratings for the Emotional Intensity of the Visual	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
P_1	8.125	1.64105	6.85	2.11744
P_1	7.8375	2.49782	6.2625	2.80931
V_1	5.15	2.51628	3.4875	2.63854
P_2	9.375	1.16244	7.7625	2.08821
P_2	9.025	1.37772	7.75	2.06539
P_2	8.775	1.34987	7.4625	1.93531
P_2	8.6625	1.72798	6.225	2.63364
V_2	8.85	1.68463	7.6375	2.32893
P_3	5.75	3.05436	6.85	2.39778
P_3	8.0875	2.118	6.4625	2.39696
P_3	5.075	2.89817	6.0125	2.83957
V_3	7.3875	2.53828	5.875	2.81216
P_4	7.975	2.19306	7.2375	2.02043
P_4	8.3625	2.27392	6.65	2.48081
V_4	7.8	2.89653	6.2625	2.85402
V_4	6.25	2.53831	4.95	2.65721
P_5	8.25	1.76104	6.4375	2.49984
P_5	7.5	2.28368	5.2875	2.59109
P_5	7.5125	2.49553	5	2.79239
V_5	5.025	2.58023	4.675	2.62787
P_6	9.35	1.49345	4.05	3.14582
P_6	6.9875	2.59256	3.0375	2.74873
P_6	6.7125	2.84713	2.825	2.51967
V_6	8.1875	2.51121	3.275	3.03972
V_6	6.8625	2.4378	2.9375	2.58694
P_7	8.9125	1.40698	7.625	2.089
P_7	8.9625	1.15225	7.35	2.28977
V_8	6.8	2.32433	2.9375	2.34571
P_9	6.725	2.63845	3.4375	2.7826
V_9	7.625	2.13693	4.8625	2.68018
V_9	7.2	2.42038	3.35	2.67714
P_10	5.2625	2.86287	3.8125	2.36586

P_10	5.7875	2.65623	3.275	2.59491
P_11	5.7375	2.56926	5.425	2.48934
P_11	5.425	2.75486	5.15	2.62462
P_12	7.8	1.87184	5.6375	2.547
P_12	6.0125	2.42087	4.5875	2.68938
V_12	6.4875	2.26136	5.75	2.50316
V_12	5.4	2.35248	4.1375	2.59865
P_13	7.725	2.1047	5.8	2.43081
V_13	7.525	2.14048	5.4625	2.64787
P_14	5.575	2.9329	3.2125	2.68467
V_14	5.7875	2.58376	6.825	2.5347
V_14	5.3375	2.84157	3.075	2.46379
P_15	7.4875	2.23886	6.3	2.44121
P_15	5.3	2.63569	4.225	2.62883
V_16	8.4625	1.84832	7.2	2.53282
P_17	7.1375	2.46876	5.825	2.88942
P_17	6.3375	2.56038	5.775	2.71878
V_18	6.5125	2.52077	5.3875	2.493
P_19	5.45	2.91178	7.2625	2.39061
V_19	5.1	2.93646	6.7375	2.48409
P_20	6.9875	2.51826	6.75	2.3787
P_20	6.2125	2.80006	6.2625	2.19749
P_20	6.0375	2.60692	5.8	2.49252
P_20	5.9	2.76781	5.1375	2.51951
P_21	8.9875	1.20646	8.4375	1.77067
P_21	8.2625	1.49889	8.425	1.88112
P_22	7.575	2.35342	6.1125	2.48027
P_22	5.2375	2.70604	6.1125	2.50566
V_22	6.8625	2.16265	3.95	2.57495
P_23	6.1125	2.44946	5.5625	2.33218
V_23	6.025	2.82832	4.725	2.67655
V_23	6.5625	2.14561	4.2875	2.53679
P_24	8.2875	1.72981	6.9625	2.14915
P_24	7.15	2.41357	6.9	2.32542
P_24	8.9125	1.90398	3.2625	2.83175
P_24	9.05	1.65277	2.8875	2.67191
V_24	8.25	1.78247	6.375	2.21831
V_24	8.425	2.20916	4.75	2.60234
P_25	7.5375	2.19288	6.95	2.24398

P_25	8.3375	1.90896	6.575	2.27688
P_25	7.075	2.29901	6.025	2.55558
P_25	7.2625	2.15091	5.875	2.69728
P_25	7.9625	1.81724	5.725	2.50051
P_25	7.5125	2.37601	4.975	2.75118
V_25	8.475	1.63021	7.2875	2.29029
V_25	5.55	2.40727	3.4	2.54876
P_26	8.6375	1.60887	7.6	1.94611
P_26	8.2625	1.74112	7.5125	1.86909
P_26	8.4125	1.54832	7.4	2.19666
V_26	7.65	1.9623	5.85	2.55125
P_27	5.6	2.59795	2.5375	2.38637
P_28	5.35	3.02772	4.8625	2.84068
P_29	8.2375	1.94379	4.9875	2.52829
P_29	6.4875	2.44946	4.7125	2.71048
P_29	5.4875	2.7969	3.5625	2.993
V_29	7.025	2.36523	5.6	2.50367
V_29	6.7375	2.59378	4.1875	2.56606
P_30	9.25	1.1638	7.0375	2.23008
P_30	8.2875	1.63191	5.375	2.50253
P_30	6.0625	3.25049	5.325	3.07203
V_30	8.275	1.7428	4.7	2.67383
P_31	5.875	2.48731	5.75	2.34656
P_31	6.4875	2.32212	4.95	2.76918
V_31	6.475	2.18728	4.2875	2.44014
P_32	8.7375	1.70438	7.95	1.85486
P_32	6.025	2.63845	5.8875	2.60959
V_32	8.25	1.89937	7.675	2.19767
P_33	5.975	2.70945	4.325	2.75486
P_33	6.075	2.57434	4.275	2.65757
P_33	5.8	2.57741	3.7125	2.44014
P_34	5.15	2.56115	3.675	2.5297
P_35	7.95	2.24398	6.0875	2.47107
P_35	7.2125	2.40092	5.625	2.65947
P_35	6.2625	2.99258	4.625	3.12351
V_35	8.1375	2.29884	6.8625	2.25996
P_36	7.15	2.21102	5.7024	2.4923
P_36	5.125	2.69728	4.0875	2.61056
P_36	5.9875	2.44169	3.9	2.57839

V_36	6.9	2.02891	5.25	2.44173
V_37	7.975	2.03124	6.8875	2.31666
V_37	7.5375	2.15796	6.3	2.48744
V_37	5.275	2.59978	4.5625	2.84558
V_38	6.2125	1.93367	3.6	2.54379
V_39	7.05	2.28312	3.5125	2.60474
P_39	6.55	2.38614	4.1	2.68894
P_39	6.875	2.45659	3.4625	2.56532
P_39	7.4625	2.08639	3.325	2.42234

Note: The letter "P" denotes picture, the letter "V" denote video clip, and the number indicates which meaning unit with which the visual was rated for correspondence.

APPENDIX 8

Appendix 8. The prior knowledge measurement.

Please answer these questions to the best of your ability:

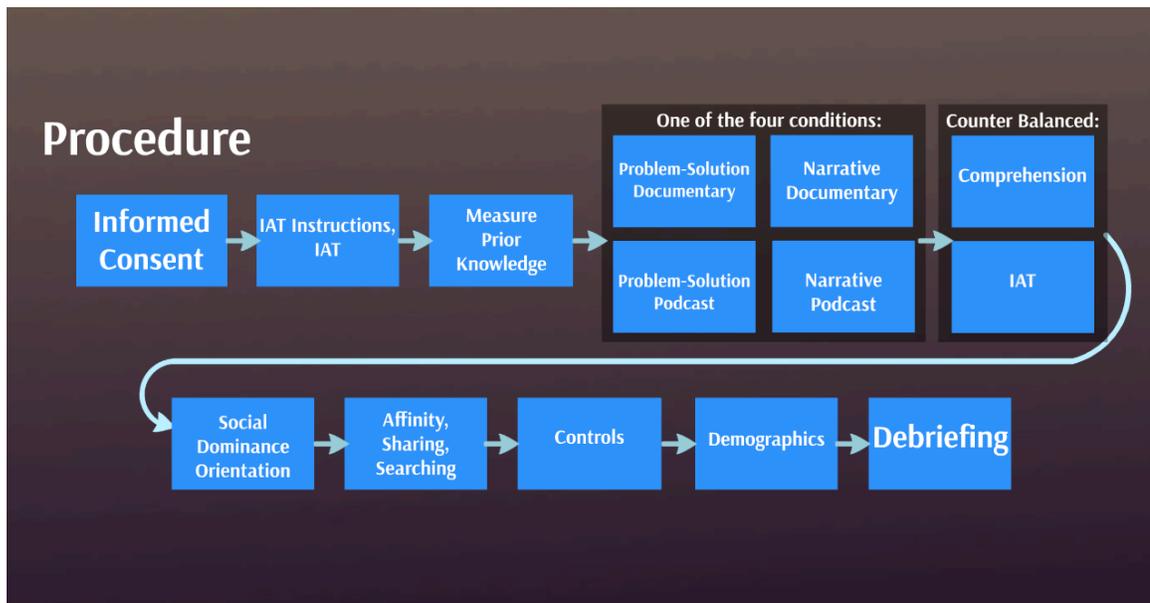
1. A total ban on trade is known as a(n)
  - A. Embargo
  - B. Subsidy
  - C. Quota
  - D. Tariff
  
2. NAFTA represents this type of economic cooperation.
  - A. Custom union
  - B. Political union
  - C. Common market
  - D. Free trade area
  
3. Taxes levied on imports into a country are called:
  - A. Barriers
  - B. Quotas
  - C. Duties
  - D. Tariffs
  
4. Macroeconomics is defined as:
  - A. Looking at how one industry type functions in the economy.
  - B. Looking at the sum of the behaviors of all consumers.
  - C. Looking at one countries entire economy.
  - D. Looking at individual economic decisions.
  
5. When countries compete for international investment by offering low or no environmental regulations or labor standards, it is referred to as:
  - A. "Attracting investment"
  - B. "Race to the bottom"
  - C. "Lowering all standards"
  - D. "Not fair trade"
  
6. This organization assists in negotiating and enforcing trade contracts made between countries:
  - A. Economic Cooperation Organization
  - B. World Economic Forum
  - C. World Trade Organization
  - D. G20
  
7. GDP =
  - A.  $GDP = \text{consumption} + \text{gross investment} + \text{government spending} + (\text{exports} - \text{imports})$
  - B.  $GDP = \text{consumption} + \text{gross investment} + \text{government spending}$
  - C.  $GDP = \text{consumption} + \text{government investment} + \text{government spending} +$

D.  $GDP = \text{corporate spending} + \text{government investment} + \text{government spending} + (\text{exports} - \text{imports})$

8. What does the acronym N.I.C stand for?
- A. Net Income Counted
  - B. Newly Industrialized Country
  - C. Negotiation in Corporation
  - D. National Internal Corruption
9. When countries are labeled as from the “Global South,” it is referring to:
- A. Countries that have an economy that was once strong but is currently failing.
  - B. Countries that do not participate in international trade.
  - C. Countries that are developing and have a low standard of living.
  - D. Countries that do not give financial aid to other countries.
10. The ratio of the benefit of producing a product nationally to the benefit of importing the product from another country is called:
- A. Opportunity Cost
  - B. Export Supply Cost
  - C. Comparative Advantage
  - D. Absolute Advantage
11. The actual number of goods and services in and out of your country is known as a country's:
- A. Trade mass
  - B. Trade volume
  - C. Rate of trade
  - D. Net exports
12. The use of trade restrictions or subsidies to allow domestic firms with decreasing costs to gain a greater share of the world market is known as:
- A. Economic safeguard policy
  - B. Domestic economic policy
  - C. Strategic trade policy
  - D. Increase-returns-to-scale-industry

APPENDIX 9

## Appendix 9. Procedure of the Study.



APPENDIX 10

Appendix 10. The list of meaning units used for scoring the free recall task.

Meaning units
Occurs in India and/or in poor developing countries
Mehesh and/or some were farmers
In a rural area
Structural inequality exists in the global economy.
Structural inequality causes economic problems.
The poor are victims of structural inequality.
Structural inequality is held in place by systems in society.
Systems like business and government.
The poor have little power to change these systems.
Keeps the poor poor and the rich rich.
There are economic inequalities between the rich and the poor.
Lives in extreme poverty
Which is living on \$1.25 or less a day.
The very wealthiest 1% of the world's population own over 50% the world's wealth. <i>(1% of the population = 50% of all wealth)</i>
The poorest half of the world's population only own 1% of the world's wealth. <i>(50% of the population = 1% of all wealth)</i>
India's economy growing
Has over 14,000 millionaires.
78 million people live in poverty.
Bad living circumstances
Malnourished
Had up to 7 people/family members.
In one-room shanties in slums.
Shanties are made largely of plastic and tarp.
Lack running water, electricity, or proper sanitation.
International trade agreements
One of the systems that create structural inequality.
Keep many in poverty and make only some rich.
Allow companies to make foreign investments in other countries.
Only benefiting a few elite and marginalize the labor force.
Forcing them into poor work situations.
Hours or pay are inconsistent.
World Bank and the International Monetary Fund enforce trade agreements in developing countries.
Countries' cannot protect their own economies.
Government's have broken tax systems.
Broken tax system's are one of the systems that creates structural inequalities

Illicit financial flows: Money that illegally leaves a country without being taxed.
Over 900 billion dollars have left numerous countries without being taxed.
Governments cannot provide social services.
Such as education or healthcare.
Without healthcare, HIV continues to spread..
Farmers could not continue farming/Mehesh lost his farm
Because they were unable to buy the seeds
Competition with other countries had inflated seed prices.
Became depressed because of this (considered suicide).
In one year, over 14,000 farmers committed suicide.
Some/Mehesh moved to an urban city/Mumbai, India.
To tried to find better work opportunities for this family.
To overcome the structural inequalities.
Became a manufacture worker.
Poor work situations/conditions.
Work was inconsistent.
The wages were not fair and not enough income.
Some/Mehesh got hurt on the job.
Employers did not fix the facilities that hurt him.
Employers did not compensate him for his injury.
Protested for better work conditions.
Organized the protests by getting others to join the protests.
By telling the others the importance of better work conditions.
Do not work to make any changes.
Which is an example of the powerlessness the poor experience from structural inequality.
Join a fair trade group
Only with small family farms.
Produce buyers are required to keep contracts with produce sellers.
Buyer must provide loans.
Convince family members to join the fair trade group.
Told them of the benefits it would bring.
Provides fair treatment and fair wages.
Helps people become influential people in their communities.
Only a FEW have the RARE opportunity to join a fair trade group, and get out of poverty
And got out of extreme poverty/structural inequality.
Wanted/Need social services for his/their family
Told local government leaders of the benefits a local tax system would bring.
When local tax systems are created everyone benefits.

Children are able to get social services, like education.
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And receive healthcare.
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