Entertainment Media Narratives and Attitude Accessibility: Implications for Person Perception and Health Communication

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The Ohio State University

2011

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ABSTRACT

Recent research has posited the influence of narrative message portrayals on message recipient’s intergroup attitudes. This study furthers this line of inquiry in three ways. First the influence of exposure to narrative messages on people’s perceptions regarding “model minorities” is examined. Second, by examining the mechanisms behind some of the narrative effects, the theory in this area is furthered. Finally, unlike previous research, this study examines the issue in the context of health communication thereby bridging the gap between media effects and processes, person perception, and health communication research.

One-fourth of all physicians practicing medicine in the U.S. are considered international medical graduates and the majority of these physicians come from South Asian countries. Entertainment media’s portrayal of this group of physicians could influence message recipient’s affective and cognitive perceptions regarding international physicians as previous research is suggestive of unintended influences of entertainment portrayals. As evidenced by the findings in the research on patient-provider communication, perceptions regarding the healthcare provider can influence medical interaction, which in turn can influence patient’s subsequent health behavior.

Therefore, two experiments were conducted to understand the influence of narrative exposure on participant’s a) out-group attitudes and intergroup anxiety and b)
accessibility of attitudes and attributes regarding the out-group, on encountering attitude object that looks similar to the character in the narrative.

Study 1 was a 1X3 experimental design (condition: positive, negative, control). Participants (n=251) were randomly assigned to watch one of the three videos. An edited episode of the show ER featuring a South Asian female physician as the protagonist served as the video stimuli used in the experiment. Following the exposure, the participants completed explicit measures of attitudes and other outcomes of interest. The main finding of the study stressed the importance of non-mediated contact with the out-group in influencing participant’s attitudes.

Study 1 provided some evidence that narrative involvement could influence out-group attitudes when the levels of contact with the out-group are low. One of the most striking findings of study 1 was the probable engagement of participants in positive subtyping. Participants who watched a negative portrayal of South Asian physician reported her to be less typical of the out-group (South Asians) than those who watched the positively valenced portrayal suggestive of positive subtyping.

The study 1 results also suggested that the sample in the study had high levels of contact with the out-group South Asian. To make sure that the results obtained in study 1 were not due to the reluctance of the participants to express any negative feelings towards this out-group, it was decided to incorporate non-deliberative reaction time measures in study 2. Another reason for the inclusion of reaction-time measures was to test the proposed theoretical relationship between narrative engagement and accessibility of attitudes.
Participants in study 2 (n = 223) were asked to respond to a reaction time task to measure attitude and attribute accessibility. After watching the video, participants were asked to indicate, by pressing a key on the computer, whether they “liked” or “disliked” the pretested picture of a South Asian female physician. The response latency indicated the strength of the relationship. It was expected that the participants that have easily accessible favorable attitudes towards South Asians would be quicker to press the key indicating “like” when they saw the picture of a South Asian physician on screen. Those who don’t have easily accessible favorable attitudes would take longer to press the key, indicative of weaker attitude strength.

Another task instructed participants to indicate, by pressing a key associated with “yes” or “no”, if they associated a particular attribute with the pretested picture of a south Asian female physician. Again, the response latency indicated the strength of the response or how accessible the attribute was. The main purpose of this experiment was to see if the valence of the portrayal and narrative involvement influenced accessibility of attitude and attributes.

The results indicated that involvement in the narrative, especially identification with the out-group protagonist, influenced attitudes in line with the valence of the portrayal. Favorable attitudes toward the out-group became more easily accessible when participants were assigned to the positively valenced condition and when they identified with the protagonist. The converse was true for those assigned to the negatively valenced condition.
A noteworthy finding in the study 2 was that participants judged the same faces differently when they were asked to associate particular constructs with the faces. However when asked to indicate their affective evaluations, “like/dislike” judgment, the participants did not judge the faces differently. This suggests, albeit tentatively, that activation of attitudes may be easier than activation of more specific category attributes.

The findings have implications both theoretically and practically. In terms of theory, the results suggested that media engagement could influence attitude accessibility. The findings suggest that when an intergroup contact is made in a professional context (e.g. between patients and physicians) the mediated portrayals could influence attitude accessibility, especially for the viewers who don’t have much intergroup contact. These accessible attitudes can guide the behavior in a medical interaction which can have implications for health behavior and health-related outcomes in patients.
This work is dedicated to our dogs: Mango and Coco,

My parents: Usha and Prakash Jain and,

My husband: Vinayak Shukla
ACKNOWLEDGEMENTS

First and foremost, I want to thank my committee Michael D. Slater, David Ewoldsen, Michelle Ortiz, and Janice Raup-Krieger for their guidance and advice throughout the process. This dissertation would not have been possible without their support, encouragement, and countless hours of advice that they imparted without once losing their patience. Dave, I feel very lucky that you decided to join the OSU School of Communication as a faculty. I am honored to know you and to learn from you. Janice, your mentoring during my early years here at OSU was an invaluable resource. Michelle, I am so glad you came on board. Your perspective was immensely helpful. Finally, many thanks to my guruji Dr. Michael Slater. Your advice and support is appreciated more than the words can ever express. Thank you so much.

Thanks are also due to Robb Hagen, Jay Smith, and Joe Szymczak for making sure that my work was not hindered due to technical issues. I am also grateful to Aaron Smith for helping me cruise through administrative issues without any problem. I also want to thank the people who have mentored me in different ways during my course of graduate studies in the United States: Ananda Mitra, Michael Hazen, Srividya Ramasubramaniam, Michael Stephenson, Emily Moyer-Gusé, and Prabhu David. Thanks to Dr. Russ Fazio for sparking in me the love of social psychology. Thanks are due to the faculty of the School of Communication who taught me many things about research.
Thanks as well to the friends I met on the way and who helped me become a better scholar. I especially want to thank Nori Comello, Cat Goodall, Kristen Landreville, Teresa Myers, and Jatin Srivastava for their counsel on various issues. Thanks as well to my office mates Sarah Brookes, Adrienne Chung, Starr Hess and especially Melissa Abo for taking the time to talk to me as I struggled to make sense of the things and for invaluable feedback at various steps during this process.

I would not have been writing this page had it not been for the unending love, unfailing support, and continuous encouragement of my husband. Thanks for helping me realize my dream and for believing in me. You had more faith in me than I had in myself. Without you, this would have been impossible. Thanks to my parents as well for instilling in me the confidence that anything is possible and for imparting the values, and the work ethics that kept me going. Anytime I had doubts, they were quick to recount my past accomplishments and motivated me by reiterating how the elephant was “almost” out of the door. Their constant reminders to not lose faith provided the reassurance I needed to get through this. Their never ending love and unconditional support were invaluable sources of strength. Thanks as well to the other members of my family, especially my father and mother in-law, who motivated me in their own ways and kept me going.

Unconditional love and umpteen kisses of Mango and Coco rejuvenated me to carry on the work. Pups, you keep me grounded, give me strength and patience, and encourage me to not lose perspective. Thank you both for adopting us. Finally, my deep gratitude to the ultimate entity that keeps this universe balanced and made this possible.
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CHAPTER 1

STUDY 1: THEORETICAL FRAMEWORK AND HYPOTHESES

Overview

Narratives have served as tools for entertainment since ancient times. Whether it is mythological narratives or narratives of contemporary entertainment television programs, they influence the message recipients’ social reality perceptions. One genre of narratives that this research explores is focused on the world of medicine. Neilson Media Research reports medical entertainment programming as one of the most popular genres of entertainment television (Hollywood Reporter, 2007). Medical entertainment programming is conceptualized as including fictional shows with physicians, hospitals, patients, and health-related issues as the main focus of the show. Specifically, this study examines the influence of watching portrayals of minority and international physicians featured on narrative entertainment programs on viewer’s out-group perceptions. Also examined is the role of narrative transportation in viewer’s perceptions of patient-provider interaction.

According to American Medical Association (AMA hereafter; 2010) almost 30% of all practicing physicians in the United States are considered international physicians; physicians who have earned their undergraduate medical degree from a country outside the US or Canada (AMA, 2010). Therefore, the chances of coming across a
minority/international physician when one visits a doctor are relatively high. Most research on patient-provider relationship has examined the influence of cultural, organizational, or interpersonal context on medical interaction (Cegala & Post, 2006; Cooper-Patrick et al., 1999; Street, 2003). The influence of media context on patient-provider relationship has primarily focused on online media (Street, 2003). This focus has inhibited academic understanding of the influence of entertainment portrayals featuring international/minority healthcare providers on the message recipient’s intergroup perceptions regarding this group of physicians. As noted above, because every fourth doctor practicing medicine in the U.S. is an international physician, and because medical interactions are influenced by environmental factors (Quick, 2009) such as entertainment media, it becomes important to examine how mediated messages featuring minority characters as physicians could influence viewer perceptions.

The influence of exposure to medically focused entertainment programs on viewer’s perceptions of interaction with healthcare providers remains relatively unexplored despite existing evidence of unintentional effects of entertainment programs on the message recipient’s social reality perceptions (Slater & Jain, 2011). Patient-provider interaction is linked to important health outcomes such as treatment adherence, patient participation, compliance, and improved health-related quality of life (Cegala, Street, & Clinch, 2007; Street, 2003). Persuasive influence of narrative style programming on the message recipient’s attitudes and beliefs is also well documented in the research on the topic (Green & Brock, 2000; 2002). Therefore it becomes pertinent to examine the influence of medically-oriented entertainment programs on viewer’s
perceptions of international healthcare providers and patient-provider interaction as these perceptions can guide attitudes and behavior.

The theoretical perspective of particular interest in this study is the influence of narrative transportation on message recipient’s out-group attitudes. Narrative transportation or absorption in the story is a cognitively engaging activity involving temporary suspension of some aspects of reality (Green & Brock, 2000; 2002). Because transportation involves complete immersion in the narrative world and leads to reduction in counterarguing (Slater & Rouner, 2002) and reactance (Moyer-Guse, 2008), it influences the message recipients’ perceptions and leads to persuasion consistent with the narrative portrayal (Green & Brock, 2002). Therefore transportation into the narrative featuring out-group characters as protagonists (international/minority physicians) should influence message recipient’s out-group attitudes in line with the portrayals, which should then influence perceptions of interaction with the out-group. The next section of the review expands on the genre of medical entertainment programming and reviews relevant research to further the above thesis.

Medical Entertainment Programming

As noted elsewhere, fictional narrative shows (e.g. dramas) with primary focus on hospitals, physicians, patients, and health-related issues are considered medical entertainment programming in the present research. Medical shows started to become popular during the 1950s and 60s (Bury & Gabe, 1994) with Medic (1954-1956) being the first hit prime-time show in this line of programming. Medic was soon followed by other hits such as Dr. Kildare (1961-1966) and Marcus Welby M.D. (1969-1976, see
Krajewski, 2002; Turow, 1989; Vandekieft, 2004). Nielson media research for 2006-2007 viewing season reports that five of the top 100 shows for the season were medical dramas including one medical situational comedy (Hollywood Reporter, 2007). Grey’s Anatomy is described as a cultural phenomenon that attracts about 20 million audience members each week (Rideout, 2008). Every week, millions of viewers tune in to watch House M. D. (Koch, 2008). ER is one of the most nominated series for the Emmy awards in the “History of television” (NBC, n.d.).

Previous research suggests an influence of exposure to medical entertainment programming on viewer’s social reality perceptions regarding healthcare providers (Chory-Assad & Tamborini, 2003; Gerbner & Gross, 1976; Quick, 2009), healthcare system, health information, preventive behaviors (Hether, Huang, Beck, Murphy, Valente, 2008; Rideout, 2008), and health-related policies (Turow & Gans, 2002; Volgy & Schwarz, 1980). A recent content analysis of fictional entertainment programs focused on medicine found portrayals of different aspects of patient-centered communication in these shows (Jain & Slater, 2010). Furthermore, the study found that in these shows international physicians are represented significantly less than their proportion in the population. Considering a quarter of all physicians practicing medicine in the U.S. are considered international physicians (AMA, 2010) and given that exposure to such programming could influence patient-provider relationships (Quick, 2009; Street, 2003), it becomes pertinent to examine the influence of the content of this genre of programming on people’s perceptions of international physicians and interpersonal health behavior involving this group of physicians.
Exposure to images of minority healthcare providers in entertainment programming could become cognitively available to message recipients in the form of exemplars if they come in contact with a minority healthcare provider resembling the one they saw in the narrative (Shrum, 1999). Such exemplars could have an influence on intergroup attitudes and could guide communication behavior in a health context. The next section expands on this and reviews the relevant literature on patient-provider communication and portrayals of medically focused interaction in entertainment media.

Entertainment Media Portrayals and Patient-Provider Communication

Successful interpersonal communication between doctors and patients is one of the most important components of a medical interaction. Patient-centered communication is conceptualized as one in which patient’s wishes, needs, and perspectives are respected, honored, and understood; bio-psychosocial aspects of patient care are considered; and the doctor-patient relationship is one built on a partnership model (Epstein et al., 2005; Lambert et al., 1997; Mead & Bower, 2000).

Patient-centered communication influences the patient’s levels of comfort, satisfaction, and trust in medical encounters and is the key to significant health outcomes (Street et al., 2008). The attitudes patients hold towards physicians may generate positive affect which can influence participation in healthcare interaction. Furthermore, patient’s perceptions of similarity with physicians also influence their levels of communication in health context (Cooper et al., 2003; Cooper-Patrick et al., 1999; Street, O’Malley, Cooper & Haidet, 2008).
The research on patient-provider relationship, till now, has not examined the influence of mediated, entertainment narrative portrayals on viewer’s attitudes regarding healthcare interaction despite increasing evidence of portrayals of such instances in entertainment programming (Jain & Slater, 2010; Quick, 2009). As suggested by Street (2003), media context can influence healthcare interaction; still research on media’s impact on patient-provider communication has primarily focused on the role of the internet. The current research tries to fill in the gap by exploring the role of mediated information, presented in a narrative style entertainment format, on message recipient’s perceptions of healthcare interaction and attitude towards minority healthcare providers.

One possibility is the generalization of attitudes to minority/international physicians as a result of exposure to an incompetent international physician in a narrative style entertainment show. Alternatively mediated portrayals of a competent Asian physician could perpetuate the “model minority” stereotype (Lee & Fiske, 2006) and influence message recipients’ attitudes and behaviors accordingly. Therefore the examination of the influence of mediated portrayals featuring international physicians on message recipient’s social reality perceptions is warranted.

A content analysis to understand physician-patient relationship in the medical shows ER and Chicago Hope found that in most shows, television physicians are shown in powerful and authoritative positions, making the majority of the decisions for patients (Makoul & Peer, 2004). Another study found that physician’s interpersonal style was positively skewed such that most physicians on television were shown as warm, caring, and friendly (Pfau et al., 1995). Still another content analysis of physicians on television
found that doctors were shown as having more interpersonal style (measured by rating television physicians on items measuring sociability and composure) in news magazine program formats than in prime-time fiction and day-time soap operas, and network news portrayed female physicians as having more interpersonal style than male physicians (Chory-Assad & Tamborini, 2001).

Though these studies provide a general picture of television physicians’ interpersonal approach, none of the abovementioned studies, however, systematically examine the influence of exposure to medically focused programming on viewer’s perceptions regarding minority healthcare providers and perceptions of communicating with them in a health context. Experiencing patient-provider interaction involving a minority provider on television could influence viewer’s attitudes and may also provide scripts to the viewers about engaging in conversation with physicians which could potentially influence their expectations regarding medical interaction involving minority physicians. Furthermore, television portrayals might become a source of information regarding the out-group, in this case international physicians, when other sources of information are lacking (Ball-Rokeach & DeFleur, 1976) and could thus play an instrumental role in influencing viewer’s attitudes.

Exposure to messages containing stereotypical information about African Americans influenced participant’s social reality perceptions regarding African American stereotypes and led to an increase in prejudicial feelings towards this group (Ramasubramaniam, 2011). Another study focusing on Latinos found that negative stereotypical depiction of this minority group in the media influenced people’s
perceptions towards them negatively and also had an undesirable influence on intergroup relations (Mastro, Behm-Morawitz, & Ortiz, 2007). In other words, previous research is suggestive of the influence of valence of portrayals on message recipient’s social reality perceptions regarding out-group members. Because direct intergroup contact is considered more influential than mediated contact (Schiappa, 2005) and a single experimental exposure will provide only a single exemplar of the outgroup, the following hypotheses are proposed tentatively for both general and role specific attitudes towards the out-group:

H1: There will be an effect of valence of portrayal on intergroup attitudes such that people who watch positively valenced portrayals would express relatively positive and those who watch negatively valenced portrayals would express relatively negative attitudes towards members of that out-group in general after controlling for prior contact with the out-group.

H2: There will be an effect of valence of the portrayals on attitudes towards international physicians such that people who watch positively valenced portrayals would express relatively positive and those who watch negatively valenced portrayals would express relatively negative attitudes towards South Asian physicians after controlling for prior out-group contact and contact with physicians.

Although mediated portrayals could influence message recipient’s perceptions as suggested by previous research, their influence becomes more important when the message recipients report low levels of contact with the out-group (Schiappa et al., 2005). Indeed, as suggested by the media dependency theory (Ball-Rokeach & DeFleur, 1976)
people turn to media for information when they lack other sources of information regarding the issue. When people report direct intergroup contact and Allport’s (1954) conditions for positive intergroup contact - equal status, common goals, cooperation, institution support, and friendship potential- are met, though the contact might evoke intergroup anxiety (Ortiz & Harwood, 2007), the non-mediated contact becomes more influential. In other words, message recipient’s prior contact with the out-group would act as a moderator of the effects of exposure on intergroup attitudes. Because affective ties are more influential in determining out-group attitudes (Pettigrew, 1998) rather than just the quantity of contact (as measured through level of contact), quality of contact is proposed as the moderator of valence.

H3: Quality of contact would moderate the effect of valence on intergroup attitudes towards South Asians.

H4: Quality of contact would moderate the effect of valence on intergroup attitudes towards South Asian physicians.

Anxiety is commonplace in intergroup interactions and people with limited to no contact with an out-group experience the most anxiety during the interaction (Greenland & Brown, 1999; Stephen & Stephan, 1985). Mediated intergroup contact may reduce anxiety by eliminating the need to directly interact with an out-group member (Ortiz & Harwood, 2007; Schiappa et al., 2005). Mediated contact however may be effective in reducing anxiety only when the out-group is portrayed positively and might enhance anxiety in the negative portrayals, especially when people have limited contact with the out-group. In other words:
H5: There will be an effect of valence of the portrayals on intergroup anxiety such that people who watch positively valenced portrayals would express less anxiety and those who watch negatively valenced portrayals would express more anxiety towards the out-group.

H6: Quality of contact would moderate the effect of valence on intergroup anxiety towards South Asians.

As noted elsewhere, levels of trust, comfort, and satisfaction are important components of patient provider relationship and could influence health outcomes in patients (Street et al., 2008). When a physician uses reassuring communication, validates patients concerns, and creates a supportive environment, that eases the patient’s anxiety and enhances their motivation levels, which in turn positively influences the distal health outcomes such as quality of life (Street, Gordon, & Haidet, 2007). Because valence is shown to influence perceptions (Mastro, et al., 2007) it is likely that negative portrayals of physicians in the narrative could influence message recipient’s perceived levels of comfort and satisfaction with physicians accordingly. In other words:

H7: There will be an effect of valence of the portrayal on perceived levels of comfort with international physicians such that people who watch positively valenced portrayals would express greater perceived comfort than those who watch negatively valenced portrayals after controlling for their perceived comfort with physicians in general.

H8: There will be an effect of valence of the portrayal on perceived levels of satisfaction with international physicians such that people who watch positively valenced
portrayals would express greater perceived satisfaction than those who watch negatively valenced portrayals, after controlling for perceived satisfaction with physicians in general.

Furthermore, because medical interactions in general are filled with anxiety, seeing an out-group physician in a negative manner should further enhance anxiety towards the out-group. This could then have an indirect influence on message recipient’s levels of comfort and satisfaction in an intercultural medical interaction. In other words:

H9: Intergroup anxiety should mediate the effect of valence on perceptions of comfort with international physicians.

H10: Intergroup anxiety should mediate the effect of valence on perceptions of satisfaction with international physicians.

Minority Portrayals and Intergroup Contact in Media

Television portrayals often depict women and minorities in occupational roles stereotypically (Mastro & Greenberg, 2000; Ramasubramaniam & Oliver, 2007; Seggar & Wheeler, 1973; Signorielli & Kahlenberg, 2001; Vande Berg & Streckfuss, 1992). For example, African American characters on television are frequently shown in non-professional roles as blue collar workers, cooks, or housekeepers (Seggar & Wheeler, 1973). Latinos, both men and women, are often shown as holding lower status jobs (Mastro & Behm-Morawitz, 2005; Mastro & Ortiz, 2008). Women in general are either shown as not working or are cast in non-prestigious jobs (Signorielli, 2009). A recent content analysis of programs focused on health-related storylines found that more males than females were depicted as caregivers (defined in hospital settings as doctors, nurses,
or any other healthcare provider including, especially in a non-hospital setting, any friend or family member) and males in general dominated the narratives (Hether & Murphy, 2010). In medically focused entertainment programming, the number of women as doctors on television was representative of the total number of female physicians in the U.S.; however most women physicians on these programs were not shown as active caregivers (defined as engaging in interaction with patients). This suggests that although women were shown as physicians, inclusion of these women was presumably often for the extension of heterosexual romantic narrative plotlines (Jain & Slater, 2010).

Though much research has focused on the portrayals of minorities and women in entertainment programming, research examining portrayals of international physicians on television is relatively rare. Considering more than a quarter of all physicians in the U.S. are international physicians (AMA, 2010), examination of media representations, if any, of this group is important to understand the social reality perceptions media might be creating for program viewers. One study found that international physicians are shown much less frequently in the media than their proportion in the actual population (Jain & Slater, 2010). Limited or negative portrayals of out-groups (i.e., international physicians) may influence message recipients social reality perceptions and can lead to stereotyping of and prejudice towards the out-group (Dixon & Linz, 2000; Mastro, 2003). Furthermore, with the lack of other sources of information regarding international physicians, message recipients (at least those who have not had minority physicians personally) might depend primarily on media portrayals for information regarding this group of physicians (Ball-Rokeach & DeFleur, 1976).
As noted above, because narrative portrayals could serve as a potential source of information regarding minority groups especially with the lack of other direct information sources, it becomes imperative to examine the influence of involvement with narrative on message recipients attitudes regarding the portrayed out-group, in this case international physicians. The next section examines the literature on media involvement and proposes relevant hypotheses.

Identification

Identification (Cohen, 2001) is a form of involvement with the narrative character and is experienced when the message recipient takes on the identity of the character in the narrative and merges the self with the character. This includes sharing both cognitive and affective perspective of the character by becoming completely absorbed in the text (Cohen, 2001).

“When identifying with a character, an audience member imagines him-or herself being that character and replaces his or her personal identity and role as audience member with the identity and role of the character within the text” (Cohen 2001, p. 251).

Empathy, cognitive aspect, motivational aspect, and absorption are dimensions of identification (Cohen, 2001). The absorption dimension of identification can be compared to narrative transportation (Green& Brock, 2000; 2002; Moyer-Guse, 2008; Tal-Or & Cohen, in press) and involves loss of self-awareness during message reception. Enjoyment, enhanced involvement in the narrative, and narrative consistent persuasion are some of the consequences of identification (Cohen, 2001, 2009).
Identification could result in attitude change because during identification, the message recipient is transported into the shoes of the character (Cohen, 2001). In other words, because the identification process involves adopting cognitive and affective perspective of the character, message recipient could be influenced at both cognitive and behavioral level. Indeed identification with a narrative character enhanced self efficacy, reduced counterarguing, and motivated message recipients to engage in sexual discussions in one study (Moyer-Guse, Chung, & Jain, in press). This effect of identification could also be of value in the research on intergroup attitudes.

Because identification can influence message recipients at both cognitive and affective levels, identification with an out-group narrative character should also influence message recipient’s intergroup attitudes. Although identification is not bound by demographic characteristics according to one perspective (Cohen, 2001), other research is suggestive of relative difficulty in identifying with out-group characters (Ortiz & Harwood, 2007). This latter perspective notes that message recipient’s intergroup attitudes are influenced not due to identification with an out-group character but due to message recipient’s identification with an in-group character who maintains positive relations with the out-group characters in the narrative (Ortiz & Harwood, 2007).

Considering the relatively minor role of demographic similarity in identification, valence of the character could be one possible antecedent to identification rather than group differences (Cohen, 2001, 2009; Tal-Or & Cohen, in press). In other words, intergroup attitudes might be influenced when message recipients identify with positively portrayed out-group character because people want to be associated with positive characters (Tal-
Or & Cohen, in press; Hoffner & Cantor, 1991). Therefore the following hypotheses are proposed:

H11: After controlling for intergroup contact, stronger levels of identification will be reported with the character when he or she is portrayed positively than when he or she is portrayed negatively.

H12: Identification with the out-group character should moderate the effect of valence on attitudes towards South Asians after controlling for intergroup contact.

H13: Identification with the out-group character should moderate the effect of valence on attitudes towards South Asian physicians after controlling for intergroup contact.

H14: Identification with the out-group character should moderate the effect of valence on intergroup anxiety after controlling for intergroup contact.

Though identification focuses on message recipient’s engagement with the narrative characters and the subsequent influence on attitudes, the influence of engagement with the narrative on message recipient’s out-group attitudes also needs to be considered. The next section elaborates upon this and proposes related hypotheses

Narrative Transportation

Transportation or absorption in a narrative is a cognitively engaging activity that blurs the boundaries between the narrative and the real world (Green & Brock, 2000, 2002). It is a “distinct mental process, an integrative melding of attention, imagery, and feelings, which may mediate the impact of narratives on beliefs” (Green & Brock, 2000, p. 701; 2002, p. 324).
Because transportation requires message recipient’s complete focus on the narrative, one of the consequences of transportation is persuasion in line with the narrative (Green & Brock, 2002). Furthermore, during transportation counterarguing is suppressed and the information is processed with strong affective response (Green & Brock, 2000; Slater & Rouner, 2002).

Although much attention has been devoted to understanding the influence of narrative transportation on message recipient’s attitudes and beliefs in general, little has been done to understand the influence of transportation specifically on message recipient’s intergroup attitudes. As mentioned previously, because during transportation all the mental processes are focused on the narrative and counterarguing is suppressed (Slater & Rouner, 2002), the content of the narrative might influence message recipient’s “real-world beliefs” (Green & Brock, 2000). In other words, because transportation provides the opportunity for complete “immersion” in the narrative world, the transported person may perceive events in the narrative to be more believable and may adjust their social reality perceptions according to the narrative content (Green & Brock, 2000). In terms of intergroup attitudes, this would mean that when the narrative portrays the out-group negatively, message recipients who report experiencing high levels of transportation would express negative attitudes towards the out-group controlling for their levels of contact. Similarly, people who experience high levels of transportation should indicate positive attitudes towards the out-group, if the narrative portrays the out-group positively. Transportation should thus influence message recipient’s intergroup attitudes in line with the valence of the narrative. In other words:
H15: Transportation into the narrative should moderate the effect of valence on attitude towards members of the portrayed out-group after controlling for prior intergroup contact.

H16: Transportation into the narrative should moderate the effect of valence on attitude towards international physicians after controlling for prior intergroup contact and contact with physicians in general.

H17: Transportation into the narrative should moderate the effect of valence on intergroup anxiety after controlling for prior intergroup contact.

Level of trust and comfort experienced with a physician in a medical interaction predicts patient satisfaction (Street et. al., 2008). Transportation in a medically focused narrative featuring negatively valenced patient-provider interaction could influence message recipient’s attitudes towards minority healthcare providers negatively because the process of being transported could make events feel realistic. This could also lead to enhanced anxiety towards minority physicians and might influence perceptions of comfort and satisfaction towards minority healthcare providers negatively. In other words:

H18: Transportation into the narrative should moderate the effect of valence on perceptions of comfort experienced with minority healthcare providers after controlling for message recipient’s intergroup contact, contact with physicians, and levels of comfort with physicians in general.

H19: Transportation into the narrative should moderate the effect of valence on perceptions of satisfaction experienced with minority healthcare providers after
controlling for message recipient’s intergroup contact, contact with physicians, and levels of satisfaction with physicians in general.

Group Representativeness and Attitude Generalization

Narrative characters should only be able to influence the attitudes of the message recipients towards the out-group to the extent the message recipients find the character to be a typical representation of the out-group (Mastro & Kopacz, 2006; Ortiz & Harwood, 2007; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). If the viewers don’t perceive the out-group character on television as a typical representation of the out-group (in this case South Asians and international physicians) then they will not generalize the attitude to the out-group regardless of the valence of the portrayal because the character won’t be considered representative member of that social group. Similarly the message recipients will also not perceive any interaction anxiety towards the out-group unless the character is perceived to be a representative member of the out-group (Ortiz & Harwood, 2007).

Therefore:

H20: Representativeness of the narrative character to its in-group (South Asians) should moderate the effect of valence of portrayal on attitude towards the out-group (South Asians) after controlling for intergroup contact.

H21: Representativeness of the narrative character to its in-group (South Asian) should moderate the effect of valence of portrayal on intergroup anxiety after controlling for intergroup contact.
CHAPTER 2

STUDY 1: METHOD

To understand the influence of narrative transportation on people’s perceptions of South Asians and international physicians the participants were randomly assigned to one of the three conditions (valence: positive, negative, control) and were requested to complete a survey designed in Media Lab after watching the edited episode of the show ER.

Participants

Participants for the study were recruited from the students enrolled in different communication classes in a large Midwestern university. Of 251 participants, 84 were exposed to the positively valenced condition and 85 were exposed to the negatively valenced condition. Participants on an average were 21 years old ($SD = 2.85$), 58% ($n = 144$) were females, and 70% were Caucasian ($n=177$).

Measures: Independent Variables, Mediators, Moderators, and Outcome Variables

Manipulation

The video for the study was created by editing an episode of the show ER featuring a South Asian physician as one of the primary physicians on that episode of the show. The video for each condition was about 11-12 minutes long.
In the positively valenced condition the physician, Dr. Neela Rasgotra was shown as a caring, competent, and empathetic physician. In this video, Neela’s patient was an adolescent girl who came to the ER after she suffered an injury caused in a minor brawl with her foster brother. The patient expressed to Neela that she was scared because she could be transferred to a new home over this incident, even though she was very happy in her current foster home. The participants exposed to this condition saw Neela effectively advocate for the girl with the social worker so that the patient was not uprooted from her current foster home.

In the negatively valenced condition the same physician, Dr. Neela Rasgotra, was shown to be raising concerns among her attending physicians for her inability to competently communicate with her patients, to the point that it was a focus of discussion at a formal meeting. She was also shown as a callous physician and an incompetent communicator who committed a serious error in communicating the death of an adolescent patient to the wrong family and did not know how to handle the delivery of bad news.

The control condition was also included in this experiment. In the control condition, the international physician Dr. Neela Rasgotra was almost non-existent and was featured in the background only. She was not shown communicating to the patients at all. The reason for including control condition was to make sure that the effect was occurring due to the manipulation and would not be exhibited in the participants assigned to the control condition. In other words, the inclusion of control condition helped in comparing the effect of both the positively and negatively valenced condition. The data
from the participants in the control condition was removed while analyzing the hypotheses that involve narrative engagement as one of the moderators of valence. In other words, it would be futile to assess the moderating effect of identification with the protagonist on valence for the participants assigned to the control condition as the protagonist was not featured prominently in the control condition. Therefore to analyze such predictions, only the data from the participants in the positively and negatively valenced condition was employed. The control condition was also dropped from other interaction analyses if results were initially significant but visual inspection showed that effects of positive and negative portrayals were close to parallel and the interaction was due to differences from control, as all interaction hypotheses concerned differences associated with the positive versus negative conditions.

In the next section, the items used in the instrument are elaborated upon. Please refer to appendix A for the details of the instrument.

Media Variables

To make sure that there was no difference between the participant’s levels of enjoyment between the three conditions, the first set of questions explored, on a seven-point semantic differential scale, if the video was found to be enjoyable. The overall enjoyment scale was created by including four items measured on a seven-point *strongly agree* to *strongly disagree* scale (α = .94; M = 5.04, SD = 1.20). Frequency of exposure (M = 1.54, SD = 1.11) and familiarity (M = 2.76, SD = 1.84) with the show *ER* was also measured. A single item was included to measure participant’s previous exposure to the
episode of the show used in the experimental manipulation. No prior exposure to the show was reported by 86% of the participants.

Transportation into the narrative (10 items; $\alpha = .78; M = 4.37, SD = .91$) was measured using the transportation scale by Green and Brock (2000). The original scale has 11 items but one of the items “the events in the show have changed my life” was not included due to the inapplicability of the item to this audience. Identification with the protagonist ($\alpha = .92; M = 4.32, SD = 1.17$) was measured using a ten item identification scale (Cohen, 2001) and perceived realism of the narrative ($\alpha = .80; M = 5.01, SD = 1.01$) was measured with five items scale by Rubin (1981). The response categories for the items were measured on a seven point strongly disagree to strongly agree scale.

**Group Typicality**

To understand the lead character’s representativeness to her in-group, South Asians (2 items; $r(251) = .69, p < .01; M = 3.90, SD = 1.32$) and South Asian physicians (2 items; $r(223) = .74, p < .01; M = 4.13, SD = 1.35$), a seven point strongly agree to strongly disagree group typicality measure was used (Harwood, Hewstone, Paolini, & Voci, 2005).

**Intergroup Anxiety**

Intergroup anxiety towards South Asians (5 items; $\alpha = .85; M = 2.3, SD = .80$) was measured using the intergroup anxiety scale (Stephan and Stephan, 1985). On a five point semantic differential scale, people responded to items such as levels of awkwardness, anxiousness, or ease they might feel when mixing with a complete stranger who was of South Asian ethnicity (Stephan and Stephan, 1985). A higher number
indicates more anxiety. Anxiety towards South Asian physicians was not measured to avoid confounding of results between intergroup anxiety and anxiety experienced during medical interaction.

*Out-group Attitudes*

Out-group attitudes towards South Asians (6 items; \( \alpha = .92; M = 5.37, SD = 1.03 \)) and international physicians (6 items; \( \alpha = .93; M = 5.40, SD = 1.05 \)) was measured (Wright, Aron, McLaughlin-Volpe, Ropp, 1997) by asking people to respond to statements such as feelings of negativity, warmth, contempt, suspicion, friendliness, and admiration on a seven-point semantic differential scale. A higher number reflects a more positive attitude.

*Perceived Comfort and Satisfaction*

Perceptions of comfort (\( M = 5.10 \; SD = 1.41 \)), and satisfaction (\( M = 5.09 \; SD = 1.36 \)), with international doctors was measured on a seven-point *strongly agree* to *strongly disagree* scale by presenting the participants with the following hypothetical scenario.

“Please imagine a hypothetical situation. Imagine that you are not feeling well and decide to get yourself checked out. When you arrive at the clinic you are assigned to a South Asian doctor. Assume that the doctor has accented but understandable English.”

Following that, the participants were asked to indicate their perceived levels of comfort (\( M = 5.8 \; SD = 1.1 \)), and satisfaction (\( M = 5.7 \; SD = 1.1 \)), with the South Asian physician on a 7-point *strongly disagree* to *strongly agree* scale. The question was repeated for four different ethnic groups to mask the intent and to assess the baseline
perceptions of comfort and satisfaction with physicians in general by asking the participants about their perceived comfort and satisfaction levels with European American physicians (with the presumption that for most participants, the primary care physician would be of European American ethnicity).

*Intergroup Contact*

Participant’s level of contact with physicians in general was measured by asking them the number of times they see a physician of any kind and the number of physicians they personally know (e.g. physicians they consider friends or family). Approximately 80% of the participants reported going to the doctor once every three to twelve months. Contact with South Asian physicians was measured by asking how often they went to see a doctor who was of South Asian ethnicity. About 15% of all the participants reported going to a South Asian physician once a year and 41% reported that they have never seen a South Asian physician.

Intergroup contact with South Asians was measured by asking the number of South Asian people participants interacted with, and the quality of the contact (Mastro, Behm-Morawitz, Ortiz, 2007). On average participants reported interacting with people of South Asian ethnicity once every two week ($M = 4 \ SD = 2.46$). The quality of contact ($\alpha = .90; \ M = 5.23, \ SD = 1.19$) was measured using six items on a 7-point semantic differential scale. A higher number indicates more positive contact.

*Manipulation Check*

Two questions explored the validity of the manipulation. Participants were asked to indicate a) the level of perceived competence of the physician shown in the video on a
7-point strongly agree to strongly disagree scale ($M = 4.9 \ SD = 1.47$) and b) ethnicity of the physician who was the protagonist in the video they saw. 86% of the participants correctly identified the South Asian ethnicity of the protagonist. The survey ended with asking participant demographics.
CHAPTER 3

STUDY 1: RESULTS

Participants found all the experimental conditions to be equally enjoyable \([F(2, 248) = 1.53, p = .22]\). A manipulation check was performed by measuring participants’ perceptions of competence of the main character *Neela* on a 7-point scale (1-*completely incompetent* to 7-*completely competent*). The results indicate that the manipulation was effective \([F(2, 247) = 56, p < .001]\). People assigned to the positively valenced condition perceived *Neela* to be significantly more competent \((M = 5.9, SD = 1.15)\) than those assigned to the negatively valenced \((M = 3.9, SD = 1.31)\) or control condition \((M = 4.91, SD = 1.17)\). Bonferroni post hoc comparison revealed a significant difference between all three conditions.

Another item that served as a manipulation check asked participants to assess the ethnicity of the protagonist. 86% of all participants correctly identified the South Asian ethnicity of the main character.

Hypothesis Testing

To test hypothesis 1, which proposed that valence of the portrayals would influence intergroup attitudes towards South Asians, a one way analysis of covariance (ANCOVA) was run with experimental condition as a fixed factor and levels and quality of prior contact with South Asians as covariates. The two covariates, level and quality of
contact were significantly correlated with the dependent variable and were hence included as the covariates in the analyses (Hayes, 2005; Lomax, 2007).

The media use variables, familiarity with the show *ER*, prior exposure to the episode of the show used in the experimental condition, and frequency of watching *ER* were not used as covariates for three reasons. First since random assignment was used, it is assumed that participants should not differ significantly between the groups in their exposure to the show *ER*. Indeed there was no difference across condition in participant’s exposure to the episode of the show used in the study. Participants also did not differ across condition in their levels of familiarity with the show and the protagonist. Secondly, none of these three media use variables explained significant variance in the outcome variable (Hayes, 2005; Lomax, 2007). Furthermore, the media use variables were significantly correlated with each other hence their inclusion in the model would not necessarily improve it but would eat up degrees of freedom (Lomax, 2007).

Hypotheses 1 and 3 were tested together. Hypothesis 1 proposed significant influence of the valence of the portrayal on participant’s intergroup attitudes. Hypothesis 3 proposed the moderating role of level and quality of contact by condition on participant’s intergroup attitudes. To test these set of hypotheses in SPSS, a custom ANCOVA model was created. The main effect of condition and quality of contact was assessed. Interaction terms between quality of contact and condition was also added to the model.

There was not a significant difference between exposure to different conditions and intergroup attitudes \([F(2, 232) = 1.56, p = .21]\). Attitudes differed significantly based
on participant’s levels \([F(1, 232) = 4.47, p = .04; M = 4, SD = 2.46]\) and quality of intergroup contact \([F(1, 232) = 92.22, \ p < .001; M = 5.23, SD = 1.19]\) with the out-group \((M_{\text{positive}} = 5.5, SD = 1.02; M_{\text{negative}} = 5.4, SD = 1.11; M_{\text{control}} = 5.29, SD = 0.95)\) suggesting that non-mediated contact takes precedence over mediated contact in influencing intergroup attitudes. Therefore hypothesis 1 was not supported. Neither quality \([F(2, 232) = 1.44, p = .24]\) nor level \([F(2, 232) = .70, p = .5]\) of contact moderated the effect of exposure on participant’s attitude. Hypothesis 3 was not supported.

The analyses were run again to make sure the race of the participant did not influence the attitudes because of the possibility of differential responses to a non-majority protagonist, and a patient’s family who was African American in the negative condition and white in the positive condition. In the above model, dummy coded race was added as another factor. If the participants reported their race as European American, then they were assigned a value of 1 in the transformed variable. If the participants reported their race as anything but European American, then they were assigned a value of 0. Therefore in the analyses, a value of 1 represented European American and a value of 0 represented non-European American. Then the model was set up in the manner described above. The results remained as before. Attitudes differed significantly based on participant’s levels \([F(1, 233) = 4.26, p = .04]\) and quality of intergroup contact \([F(1, 233) = 92.36, \ p < .001]\) with the out-group. Hypothesis 2 proposed that attitude towards international doctors (specifically South Asian providers) would differ based on the valence of the portrayal after controlling for prior exposure to the show. Hypothesis 4
proposed the moderating role of the quality of contact by condition on participant’s attitude regarding South Asians physicians.

To test this set of hypothesis, ANCOVA was run with the following covariates: Level and quality of contact with South Asians, and frequency of visit to South Asian physicians as these variables were significantly correlated with the outcome variable – attitudes towards international physicians (Hayes, 2005; Lomax, 2007). Interaction term between condition and prior contact was created and added in the model.

Again, no difference was found in participant’s attitudes towards South Asian physicians based on the condition they were exposed to \([F(2, 232) = .06, \ p = .95]\). In other words, valence of the portrayal did not influence attitudes towards South Asian physicians. The participants intergroup attitudes differed only on the basis of quality \([F(1, 232) = 47.02, \ p < .001; \ M = 5.23, \ SD = 1.19]\) of non-mediated intergroup contact they had with South Asians in general \(M_{\text{positive}} = 5.41, \ SD = 1.13; \ M_{\text{negative}} = 5.46, \ SD = .99; \ M_{\text{control}} = 5.49, \ SD = 0.99\). No moderating effect of prior contact by condition on participant’s attitudes towards South Asians physicians was found. The hypotheses 2 and 4 were not supported.

Hypotheses 2 and 4 were tested again after including participant race as another factor. Covariates were as before: Level and quality of contact and frequency of visiting South Asian physicians. Interaction terms between prior contact and condition were also added to the model. As before, quality of contact was a significant predictor of attitude towards South Asian physicians \([F(1, 229) = 41.91, \ p < .001]\). Race of the participant moderated the effect of the valence of the portrayal \([F(2, 229) = 3.26, \ p = .04]\). There
was no difference for European American participants’ attitude towards South Asian physicians by condition. However, non-European American participants show slightly more negative responses to South Asian physicians after being exposed to negatively valenced condition, but, oddly, even more negative responses after seeing the positively valenced portrayal. This is particularly interesting considering patient’s family who is misinformed in the negatively valenced condition is African American, and the family in the positive version is European American. The reasons for this pattern are not clear.
Figure 1. Moderating effect of participant race by condition on participants’ attitude towards South Asian physicians.

Participant Race: 0 = Non-European American; 1 = European American

Note: Positive condition refers to exposure to the positively valenced portrayal. Negative condition refers to exposure to the negatively valenced portrayal. The dependent measure is attitude towards South Asian physicians.
Hypothesis 5, which proposed that levels of intergroup anxiety towards South Asians would differ based on the valence of the portrayals, was tested using ANCOVA with level and quality of contact with South Asians, as covariates and valence as the fixed factor. Interaction term between prior contact (level and quality of contact) and valence of exposure was created and added to the model to test hypothesis 6.

Intergroup anxiety towards South Asians differed based on the level \( F(1, 232) = 7.2, p = .008 \) and quality \( F(1, 232) = 51.2, p < .001 \) of intergroup contact. Valence of the portrayal did not have any influence on intergroup anxiety \( F(2, 232) = 2.23, p = .11; M_{positive} = 2.21, SD = .86; M_{negative} = 2.31, SD = .78; M_{control} = 2.34, SD = .75 \).

Intergroup anxiety was measured on a five point semantic differential scale where higher numbers meant more anxiety. Hypothesis 5 was not supported.

Hypothesis 6 which proposed moderating role of prior contact by condition on participant’s intergroup anxiety was also not supported. Level \( F(2, 232) = 2.41, p = .09 \) or quality \( F(2, 232) = 1.45, p = .24 \) of contact did not moderate the effect of valence on intergroup anxiety.

The hypotheses 5 and 6 were tested again with race of the participants added as another factor. The pattern remained as before. Level \( F(1, 231) = 7.46, p = .007 \) and quality \( F(1, 231) = 49.39, p < .001 \) of intergroup contact were the only significant predictors of intergroup anxiety towards South Asians. No interaction effect was observed between contact and valence of the portrayal on participants’ intergroup anxiety.
Hypotheses 7 and 8 proposed that valence of the portrayals would influence participants’ perceptions of comfort and satisfaction with international physicians after controlling for their perceptions of comfort and satisfaction with physicians in general. The ANCOVA model was set up in the following manner: Frequency of visit to any physician and frequency of visit to South Asian physician, levels of perceived comfort (or satisfaction if the DV was perceived satisfaction) with European American physicians, level, and quality of contact with South Asians were all added as covariates. Valence was added as a fixed factor. Perceptions of comfort (or satisfaction) with European American physicians was used as a covariate with the presumption that most participants would have European American physicians as their primary care provider. Therefore perceptions of comfort (or satisfaction) they might express towards them should be treated as a covariate in the analysis.

Participant’s perceptions of comfort towards South Asian physicians ($M_{positive} = 5.33, SD = 1.29; M_{negative} = 5.05, SD = 1.4; M_{control} = 5.19, SD = 1.33$) differed by their frequency of visit to any physician in general [$F(1, 228) = 4.25, p = .04$) and South Asian physician in particular [$F(1, 228) = 7.38, p = .007$], perceptions of comfort with physicians in general [$F(1, 228) = 36.01, p < .001$], and quality of non-mediated contact with South Asians [$F(1, 228) = 22.91, p < .001$]. Valence did not have any influence on perceptions of comfort towards South Asian physicians.

Inclusion of participant race as a fixed factor did not influence the findings. The perceptions of comfort towards South Asians physicians differed by participants frequency of visit to any physician in general [$F(1, 229) = 4.20, p = .04$) and South Asian
physician in particular \( F(1, 229) = 6.59, p = .01 \), perceptions of comfort with physicians in general \( F(1, 229) = 37.39, p < .001 \), and quality of non-mediated contact with South Asians \( F(1, 229) = 19.67, p < .001 \). Similarly, participant’s perceptions of satisfaction towards South Asian physicians \( M_{\text{positive}} = 5.43, SD = 1.11; M_{\text{negative}} = 5.08, SD = 1.34; M_{\text{control}} = 5.27, SD = 1.27 \) differed by their frequency of visit to any physician in general \( F(1, 228) = 8.9, p = .003 \) and South Asian physician in particular \( F(1, 228) = 8.85, p = .003 \), perceptions of satisfaction with physicians in general \( F(1, 228) = 60.99, p < .001 \), and quality of non-mediated contact with South Asians \( F(1, 228) = 21.86, p < .001 \).

Valence of the portrayal had no influence on participant’s perceptions of satisfaction towards South Asian physicians.

Inclusion of participant race as a fixed factor did not influence the findings. The perceptions of satisfaction towards South Asian physicians differed by participants frequency of visit to any physician in general \( F(1, 229) = 8.34, p = .004 \) and South Asian physician in particular \( F(1, 229) = 8.13, p = .005 \), perceptions of satisfaction with physicians in general \( F(1, 229) = 60.62, p < .001 \), and quality of non-mediated contact with South Asians \( F(1, 229) = 20.38, p < .001 \).

Hypotheses 9 and 10 proposed intergroup anxiety as a mediator of valence of portrayal on participant’s perceptions of comfort and satisfaction towards international physicians. Because valence did not influence intergroup anxiety, the mediation hypotheses were not tested further.

The next hypothesis proposed that after controlling for intergroup contact and familiarity with the show, stronger levels of identification with the protagonist should be
reported when she is portrayed positively than when she is portrayed negatively (Tal-Or & Cohen, 2010). A one way ANCOVA was run with the following covariates:

Familiarity with the show, level, and quality of intergroup contact. Identification with the protagonist differed based on participant’s familiarity with the show \( [F(1, 235) = 10.07, p = .002] \), and valence of the condition \( [F(1, 235) = 24.49, p < .001] \). People assigned to the condition where the protagonist was portrayed positively reported stronger identification \( (M = 4.94, SD = .89) \) than those assigned to the condition where she was portrayed negatively \( (M = 4.29, SD = 1.18) \). As expected, identification with the protagonist in the control condition was not high \( (M = 3.77, SD = 1.07) \). Bonferroni \textit{post hoc} comparison revealed a significant difference between all three conditions.

The analyses were run again with participant race added as another factor. Overall model was as before. Identification with the protagonist differed based on participants’ familiarity with the show \( [F(1, 232) = 9.92, p = .002] \), valence of the condition \( [F(1, 232) = 21.62, p < .001] \) and participants’ race \( [F(1, 232) = 7.67, p = .006; M_{\text{European American}} = 4.22, SD = 1.1; M_{\text{Non-European American}} = 4.70, SD = 1.23] \). Hypothesis 12, 13, and 14 proposed that identification with the out-group character should moderate the effect of valence on participant’s attitude towards South Asians, South Asian physicians and their levels of intergroup anxiety towards South Asians respectively.

The ANCOVA model to test these hypotheses was set up in the following manner. Valence of the portrayal was added as a fixed factor. Identification with the protagonist, level, and quality of contact were added as covariates. An interaction term
between condition and identification was created and added in the model. Appropriate outcome variables were added in the model.

Identification did not moderate the influence of valence on attitudes towards South Asians \( F(2, 233) = .56, \ p = .57 \). Quality \( F(1, 233) = 91.52, \ p < .001 \) and level \( F(1, 233) = 5.11, \ p = .02 \) of intergroup contact predicted out-group attitudes towards South Asians. There was no effect of identification by valence on participant’s attitudes towards South Asian physicians either \( F(2, 233) = .54, \ p = .58 \). Quality \( F(1, 233) = 48, \ p < .001 \) and level \( F(1, 233) = 7.73, \ p = .006 \) of intergroup contact was the only significant predictors of attitude towards South Asian physicians. The pattern was the same for intergroup anxiety. Identification did not moderate the effect of valence on participants levels of intergroup anxiety towards South Asians \( F(2, 233) = 1.74, \ p = .18 \). Quality \( F(1, 233) = 51.81, \ p < .001 \) and level \( F(1, 233) = 7.73, \ p = .006 \) of intergroup contact influenced intergroup anxiety. Hypotheses 12-14 were not supported.

Hypotheses 12-14 were tested again after adding participant race as another factor in the analyses. The findings did not change after the inclusion of this variable. The overall pattern remained as before. Participants attitudes towards South Asians differed by quality \( F(1, 230) = 88.64, \ p < .001 \) and level \( F(1, 230) = 4.74, \ p = .03 \) of intergroup contact. There was still no effect of identification by valence on participant’s attitudes towards South Asian physicians \( F(2, 230) = .52, \ p = .59 \). Quality \( F(1, 230) = 42.62, \ p < .001 \) and level \( F(1, 230) = 4.29, \ p = .04 \) of intergroup contact significantly predicted attitude towards South Asian physicians but identification did not moderate the effect of condition on participants attitudes towards South Asian physicians \( F(2, 230) = \).
The pattern was the same for intergroup anxiety. Identification did not moderate the effect of valence on participants levels of intergroup anxiety towards South Asians \([F(2, 230) = 1.94, p = .14]\) Quality \([F(1, 230) = 50.58, p < .001]\) and level \([F(1, 230) = 7.63, p = .006]\) of intergroup contact influenced intergroup anxiety.

The next set of hypotheses proposed transportation into the narrative as a moderator of the effect of valence on different outcomes. To analyze these hypotheses, 1X3 ANCOVA (condition: positive, negative, control) was run with level and quality of intergroup contact as covariates. Transportation was also added as a covariate and transportation by condition interaction terms was created and added in the model. Transportation did not moderate the effect of condition on participants attitudes regarding South Asians \([F(2, 233) = .53, p = .59]\) or South Asians physicians \([F(2, 233) = .90, p = .41]\). There was no effect of transportation by condition on participants anxiety towards South Asians out-group \([F(2, 233) = .39, p = .68]\). Hypotheses 15-17 were therefore not supported.

The above pattern persisted after including participant race as another factor in the model. Transportation still did not moderate the effect of valence on participants’ attitude towards South Asians \([F(2, 230) = .51, p = .6]\) or South Asian physicians \([F(2, 230) = .96, p = .38]\). There was no effect on anxiety either \([F(2, 233) = .46, p = .63]\). Level and quality of contact were the only significant predictors of participants’ attitude towards South Asians and South Asians physicians and intergroup anxiety.

The next two hypotheses proposed transportation as a moderator of the effects of valence on perceptions of comfort and satisfaction with South Asian physician after
controlling for intergroup contact, frequency of visits to South Asian physicians, and general levels of comfort (or satisfaction with physicians). To test this hypothesis a 1X3 ANCOVA (condition: positive, negative, control) was created. Quality of intergroup contact, frequency of visit to South Asians physicians, transportation into the narrative, and perceptions of comfort (or satisfaction if the DV was perceptions of satisfaction with South Asian physician) were added in the model as covariates. Interaction terms between condition and transportation were created and added to the model.

Although transportation did not moderate the effect of valence on participants perceptions of comfort with South Asians physicians, levels of transportation into the narrative had a main effect on perceptions of comfort $[F(1, 230) = 6.81, p = .01]$. Participants levels of comfort with physicians in general also predicted how comfortable they would feel with South Asians physicians $[F(1, 230) = 35.92, p < .001]$. Quality of contact was another significant predictor of perceptions of comfort towards South Asians physicians $[F(1, 230) = 22.75, p < .001]$. To analyze the influence of transportation, a multiple linear regression was run. The model was set up in the following manner. In block 1, people’s perceptions of comfort with physicians in general, average frequency of going to South Asians physician, and quality of contact with South Asians in general were added. In block 2, transportation was added. Levels of transportation were directly correlated with perceptions of perceived comfort $[b = .130, t(238) = 2.33, p = .02]$. The findings did not differ after participant race was included as another factor in the model.

There was no effect of transportation by valence on participant’s perceptions of satisfaction with South Asians physicians $[F(2, 230) = 1.57, p = .21]$. Levels of
transportation into the narrative had a main effect on perceptions of satisfaction \([F(1, 230) = 6.56, p = .01]\). Participants levels of satisfaction with physicians in general also predicted how satisfied they would feel with South Asians physicians \([F(1, 230) = 55.13, p < .001]\). Quality of contact was another significant predictor of perceptions of satisfaction towards South Asians physicians \([F(1, 230) = 22.43, p < .001]\). To analyze the influence of transportation, a multiple linear regression was run. The model was set up in the following manner. In one block, people’s perceptions of satisfaction with physicians in general, average frequency of going to South Asians physician, quality of contact with South Asians in general, and transportation in the narrative were added to the model. Levels of transportation were directly correlated with perceptions of perceived satisfaction \([b = .12, t(238) = 2.27, p = .02]\). The findings did not differ after participant race was included as another factor in the model.

Hypotheses 20 and 21 proposed that representativeness of Neela to her in-group (South Asian and South Asian physicians) should moderate the effect of valence of the portrayal on intergroup attitudes. In the ANCOVA model valence was added as a fixed factor. Protagonist’s typicality to South Asians (or South Asians physicians) was added as a covariate along with prior contact with South Asians. An interaction term between valence and typicality was also added to the model.

Protagonist’s typicality to her in-group did not moderate the effect of valence on participants attitude regarding South Asians \([F(2, 233) = 1.24, p = .29]\). Perceptions of representativeness did however had a main effect on attitudes \([F(1, 233) = 4.58, p = .03]\). Quality \([F(1, 233) = 83.1, p < .001]\) and level \([F(1, 233) = 4.68, p = .03]\) of contact were
other significant predictor of attitude towards South Asians. To analyze the influence of group typicality, a multiple linear regression was run. The model was set up in the following manner. In one block quality of contact with South Asians in general and perception of typicality were added. The more typical the participants perceived Neela to be like other South Asians, the more positive attitudes they expressed towards South Asians in general \(b = .11, \ t(239) = 1.94, p = .05\). Participants in the positively valenced condition \((M = 4.10, SD = 1.20)\) perceived Neela to be a more typical representative of South Asians \(F(2, 248) = 3.49, p = .03\) than those in the negatively valenced condition \((M = 3.6, SD = 1.43)\). Post hoc test using Bonferroni multiple comparison procedure revealed significant difference between positively and negatively valenced conditions. This suggests that there were pre-existing positive assessments of such physicians on the whole and in negative condition, she was regarded as an exception. The findings did not differ after participant race was included as another factor in the model.

The protagonist’s typicality to her in-group South Asians physician did not moderate the effect of valence on participants attitude regarding South Asian healthcare providers \(F(2, 233) = .53, p = .59\). Perceptions of representativeness did however had a main effect on attitudes \(F(1, 233) = 5.6, p = .02\). Quality \(F(1, 233) = 44.54, p < .001\) was the other significant predictor of attitude towards South Asian physicians. To analyze the influence of group typicality, a multiple linear regression was run. The model was set up in the following manner. In one block quality of contact with South Asians in general and perception of typicality were added. The more typical the participants perceived
Neela to be like other South Asian physicians, the more positive attitudes they expressed towards South Asians physicians \[ b = .13, \ t(239) = 2.15, p = .03 \].

The findings did not differ after participant race was included as another factor in the model. However level of contact \[ F(1, 230) = 4.11, p = .04 \] with South Asians in general became a significant predictor of attitude towards South Asians physicians along with quality \[ F(1, 230) = 40.25, p < .001 \] and the representativeness of the protagonist to other South Asians physicians \[ F(1, 230) = 5.03, p = .03 \].

To test the moderating role of group representatives and valence on participant’s intergroup anxiety towards South Asians, the 1X3 ANCOVA (condition: positive, negative, control) was run with the following covariates: Level, and quality of intergroup contact with South Asians and participants perceptions regarding Neela as South Asian. The protagonist’s typicality to her in-group South Asians physician did not moderate the effect of valence on participants attitude regarding South Asian healthcare providers \[ F(2, 233) = 1.01, p = .36 \]. Quality \[ F(1, 233) = 49.56, p < .001 \] and level \[ F(1, 233) = 6.36, p = .01 \] were the significant predictors of intergroup anxiety. The findings did not differ after participant race was included as another factor in the model.
CHAPTER 4

STUDY 1: DISCUSSION

In this study, many of the hypotheses related to the influence of mediated out-group portrayals on message recipient’s out-group attitudes were not supported. More specifically, valence of portrayals had no influence on attitudes towards South Asians or South Asian physicians, and did not seem to have an influence on intergroup anxiety. Though disappointing and different from previous research that found the influence of mediated portrayals of Latinos and African Americans on people’s intergroup attitudes (Mastro & Ortiz, 2008; Ramasubramaniam, 2011), the findings are not surprising considering the “model minority” status attributed to the South Asian minority group in American society (Lin, Kwan, Cheung, & Fiske, 2005; Ramasubramaniam & Oliver, 2007). A “model minority” stereotype is often associated with the Asian American minority and is typically associated with qualities that are valued in the U.S. society such as hard work and intelligence (Ramasubramaniam & Oliver, 2007). The model minority stereotype also emphasizes the economic and educational success associated with Asian Americans (Lin et al., 2005) and as per stereotype content model (Fiske et al., 2002) this group is perceived by people as high in competence but low in warmth.

Perhaps the participants in this study were engaging in subtyping (Kunda & Oleson, 1995). Although subtyping is primarily considered in maintenance of negative
stereotypes, people could also engage in subtyping when negative information about “model minority” group is communicated. In other words, because South Asians are considered a “model minority”, perhaps the instances of negative portrayal that the participants were exposed to were considered as an exception and were thus mentally categorized separately than the existing mental schema of South Asians. Indeed participants in the positively valenced portrayals perceived the protagonist to be a more typical representative of South Asians than those assigned to the negatively valenced portrayals \([F(2, 248) = 3.49, p = .03]\). This suggests that perhaps the participants in the negatively valenced condition were not categorizing the protagonist as a representative member of the out-group and hence separating the instance (of the negative portrayal) as an exception. (We note that in the present study context the majority group in the study population is European American; use of “majority” and “European American” as synonymous is reflective of course only of the study population employed).

The results in this study indicate a consistent pattern. Both the levels and quality of intergroup contact consistently influenced participant’s attitudes towards South Asians, South Asian physicians, perceptions of comfort and satisfaction with South Asian physicians, and levels of intergroup anxiety towards South Asians. This suggests that mediated contact with minority groups may influence attitudes but only when the levels of intergroup contact are low (Schiappa et al., 2005). In this study, we did not find any influence of mediated contact, perhaps because the majority of the students, which in this context are European American, reported having some contact with South Asians. Moreover, 62% of the participants in the study reported being in contact with South
Asians from everyday to once every two weeks, and the mean score on the quality of contact with South Asians was positively skewed ($M = 5.23$ on a 7-point scale, $SD = 1.20$).

Furthermore, of the total minority enrollment at Ohio State (14%), Asian students constitute 5.3% (OSU, 2010) and South Asians constitute the third largest group of international students on Ohio State Campus (enrollment total: 821) very close to the enrollment of Korean students (enrollment total: 822) (OIA, 2010). As noted above, mediated contact may influence intergroup attitudes by compensating for the lack of direct, non-mediated intergroup contact. This was not the case in this study as the majority of the participants reported being in contact with South Asians. Therefore, it is not surprising that we found little effects of mediated contact in this study. Perhaps if the study is repeated with a population that does not have high levels of contact with South Asians the findings may be different (Ball-Rokeach & DeFleur, 1976).

Though many explanations could be forwarded for not finding the hypothesized effects, one that also needs to be considered is related to participant’s reluctance to express their actual feelings towards the out-group in order to not appear prejudiced. As mentioned previously, this group of participants report significant levels of contact with South Asians. Thus they might be reluctant to express any negative feelings they might hold in order to appear unprejudiced and unbiased. At the same time, this is just a speculation and participants in this group genuinely might not feel any negativity towards this group. However, this question is worth examining and one way to get around this
issue is by using non-deliberative measures to gauge participant’s actual attitudes, as will be done in Study 2.

Other hypotheses this study tested related to transportation into the narrative and influence on intergroup attitudes. To my knowledge, this was the first study to explore the role of narrative transportation on intergroup attitudes. According to the narrative transportation model (Green & Brock, 2000; 2002), when message recipients are absorbed into the narrative, the boundaries between reality and fiction are blurred and the attitudes and beliefs are influenced as per the message in the narrative due to reduction in counterarguing (Green & Brock, 2000, 2002; Moyer-Guse, 2008; Slater & Rouner, 2002). Although confirmed in various contexts, this model has not been previously tested in the context of intergroup attitudes and this study tries to fill the gap in the literature by exploring transportation in the narratives featuring out-group characters.

One of the limitations of the study revolves around the choice of covariates. Perhaps a more meaningful covariate to test the effect of transportation as a moderator in this study would be message recipients’ prior intergroup attitudes measured sufficiently ahead of the experimental session. Unfortunately this was not done in this research which could have contributed to suppression of some of the effects. Future research should measure both intergroup contact and attitudes towards the out-group to gain a better perspective while exploring such questions.

We also tested for the influence of negatively valenced portrayals of international physicians on message recipient’s perceptions of comfort and satisfaction with foreign doctors in general. Perceptions of comfort and satisfaction with physicians predict health-
related quality of life among patients (Street, Makoul, Arora, & Epstein, 2009).
Considering the number of practicing physicians in the U.S. who are considered international in status, it is pertinent to examine the expectations media portrayals might be creating in the viewers. Non-mediated contact with physicians in general and South Asian physicians in particular, general perceptions of comfort and satisfaction with physicians, and quality of non-mediated contact with South Asians determined the perceptions of comfort and satisfaction. In other words, if people were already comfortable with the physician and felt satisfied with the care they received, mediated portrayals, even of an incompetent physician, did not make much difference to their perceptions.

It should be noted that the sample in the study was of the age where medical visits and chronic health issue are not a major concern for most people. Indeed approximately 30% of the participants reported that they either never go to a doctor or visit a doctor only once every year and the next 30% reported going to a doctor once every six months. The data suggests the relative unimportance of medical visits and patient-provider relationship in this group of participants. If the study is repeated in another sample where medical issues are more salient, the results might be different perhaps due to engagement and investment in the health issues by that sample.

Another variable of interest in the study was identification with the out-group protagonist. Previous research suggests relative difficulty in identifying with a protagonist who belongs to a different racial group than the viewers in-group (Ortiz & Harwood, 2007). In this study, participants levels of identification differed based on their
familiarity with the show and valence of the character and not with the out-group status of the main character as suggested by previous research from Ortiz & Harwood (2007). This finding reinforces Cohen’s (2001) assertion that identification is not dependent upon gender, ethnicity, or other demographic characteristics. The finding that people can identify with an out-group character and therefore vicariously experience the out-group’s perspective could have potential implications for intergroup attitudes.

Despite the limitations of the study there are some strengths of this research that should be mentioned. This study is one of the first to examine the influence of media portrayals of a group that has been increasing exponentially in the United States-South Asian physicians-and contributes importantly to the healthcare system in the country. Furthermore, understanding narrative transportation and resulting influence on person perception and intergroup attitudes, to my knowledge has not been studied previously. Also the issue of subtyping in model minority stereotype is thought provoking and can further the understanding of categorization of stereotype disconfirming instances in positive stereotyping. The findings that the participants in the positively valenced condition perceived Neela to be a more typical representative of South Asians than those in the negatively valenced condition provides further evidence for this interpretation.
CHAPTER 5

STUDY 2: THEORETICAL FRAMEWORK AND HYPOTHESES

Summary of the Results from Study 1

The study 1 tested the influence of positive or negative narrative portrayals of an international physician on participant’s attitudes regarding South Asians and South Asian physicians using deliberative explicit measures. The theoretical premise was being tested to demonstrate the influence of narrative engagement (e.g. identification with the character and transportation into the storyline) on participants’ out-group attitudes.

The main findings from study 1 clearly indicated the significance of prior contact as a predictor of attitudes. Moreover, it became apparent that the population from which the study sample was drawn, has high levels of prior contact with the out-group of interest in this study. Therefore based on the results of the study 1, in this study, prior contact measured as quality of contact with other South Asians, was hypothesized to be a significant predictor of attitudes and intergroup anxiety.

H1: Quality of non-mediated contact would positively predict attitude towards South Asians.

H2: Quality of non-mediated contact would positively predict attitudes towards South Asians physicians.

H3: Quality of non-mediated contact would negatively predict intergroup anxiety.
None of the other relationships proposed between media engagement variables and out-group attitudes was supported. However, in study 1, it was proposed and supported that the participants will more strongly identify with the protagonist when she is portrayed positively than when she is portrayed negatively (Tal-Or & Cohen, 2010). Identification with the protagonist differed based on participant’s familiarity with the show [$F(1, 235) = 10.07, p = .002$], and valence of the condition [$F(1, 235) = 24.49, p < .001$] such that participants assigned to the condition where the protagonist was portrayed positively reported stronger identification ($M = 4.94, SD = .89$) than those assigned to the condition where she was portrayed negatively ($M = 4.29, SD = 1.18$). Although participants perceived the portrayal to be negative, still the attitude generalization based on the valence of the portrayal, as predicted, was not achieved.

Two reasons come to mind. Either the participants were subtyping the negative portrayal as an isolated incidence involving South Asians (for further discussion of this point, please see the discussion section of the study 1) and therefore not generalizing to the other members of the out-group. Or, perhaps more likely, the nature of the impact was such that it was on the level of automatically activated attitudes (Fazio, 2007) and would be corrected cognitively when high motivation and opportunity is present (Fazio & Towles-Schwen, 1999; Fazio & Olson, 2003; Olson & Fazio, 2008) when deliberative measures are used. Therefore, in this study it was decided to explore the second possibility by incorporating unobtrusive assessments of attitudes by employing reaction-time measures. The reaction-time measures were also incorporated as they would help in answering a theoretical question of substantive interest: Relationship between media
engagement and attitude or attribute accessibility. Before reviewing literature and
generating hypotheses concerning attitude and attribute accessibility, I will discuss issues
with respect to response time measurement, implicit and automatically-activated
attitudes, and accessibility more generally.

Implicit Attitude Measures

Individuals don’t always want to profess their true attitudes especially those that
are stricken with social desirability concerns. Given the motivation and opportunity, they
try to engineer their attitudes using deliberative judgments. When either or both are
lacking, judgments are guided by more spontaneous, automatic attitudes (Brinol et al.,
2008; Eno & Ewoldsen, 2010; Fazio & Towles-Schwen, 1999; Fazio & Olson, 2003;
Olson & Fazio, 2008).

Measures that assess attitudes without a participant’s knowledge of what is being
assessed and that capture the attitude in an automatic manner are called implicit
measures. They are indirect measures because participants are not aware of what the
researcher is really interested in measuring. Along with the lack of awareness of what is
being assessed, participants also have no control over the measurement outcome
(Dehouwer, 2009). Implicit measures of attitudes are effective in understanding people’s
real attitudes towards socially sensitive topic (e.g. attitude towards people of other racial
groups) which people might not acknowledge deliberatively with explicit measures (such
as surveys) due to social desirability issues or because of some other motivations (Olson
& Fazio, 2008).

Implicit Measures: Overview and Different Types
The media’s influence on attitude is of much interest in our discipline. Specifically the question of how racial attitudes are influenced as a result of media exposure has attracted a great deal of scholarship. This question is especially important because previous research documents the stereotypical nature of media portrayals and subsequent influence upon audience attitudes (Shrum, 1999). Much of this research has used explicit measures of attitudes to assess these sensitive topics.

When explicit measures are used, participants have ample opportunity to deliberate on judgments. Because of the sensitivity of the topic under investigation (e.g., race) motivation to respond in a socially desirable manner is also high. As per MODE model (Fazio & Towles-Schwen, 1999; Fazio & Olson, 2003; Olson & Fazio, 2008) when both motivation and opportunity are high, deliberative rather than spontaneous judgments on the issue will be provided. Resultantly even though huge research efforts are concentrated on understanding this topic that has important social implications, results may have been biased. Therefore media research could be especially benefitted by employing implicit attitude measures to understand people’s attitudes.

The next section, presents a concise review of different types of implicit attitude measures. This section is based on Fazio and Olson’s (2003) review of different implicit measures. Readers are advised to go to the original paper for the detailed description. Here, only the brief review is presented.

**Priming**

Priming procedures are one type of implicit measures. During these procedures Fazio et al primed participants with the pictures of African American faces and recorded
the latency with which they responded to an evaluative object as positive or negative. Compared to white faces, black faces facilitated responding to negative adjectives suggesting that black primes automatically activated negativity (Fazio & Olson, 2003).

_Linguistic Intergroup Bias_

This is another implicit attitude measure which posits that positive behavior displayed by an in-group member will be described in relatively abstract terms by people, whereas the same behavior shown by an out-group member will be described in relatively concrete terms. The reverse is true for negative behaviors (Fazio & Olson, 2003).

_Expectancy Congruent versus Expectancy Incongruent Events_

Another measure to assess implicit attitudes makes use of the fact that people explain expectancy incongruent events more often than expectancy congruent events (Hastie, 1984). The participants were asked to complete a sentence and the key was whether the participants completed the sentence by explaining the behavior or simply continued the sentence without explaining. If participants go at length to explain a behavior enacted by a minority group member that is inconsistent with their schema, that might indicate they didn’t expect that person to engage in such behavior and might indicate stereotyping (Fazio & Olson, 2003).

Spatial Simon test and GNAT (Go no go association tasks) are some other measures to understand implicit attitudes (Fazio & Olson, 2003).

_ Implicit Association Test (IAT) _

Perhaps the most common type of implicit measure is implicit attitude test (IAT; Greenwald, McGhee, Schwartz, 1998; Nosek, Greenwald, Banaji, 2007). This measure
records the strength of association between a target concept and an attribute dimension. The participants are first asked to pair target categories (e.g. pictures of African Americans and European Americans) as typical of Blacks or Whites. Then they are asked to pair words that have positive or negative evaluation into positive or negative categories. For example, “joy” is supposed to go into the category good and “pain” is supposed to go into category bad. Then the critical phase comes in which target categories (e.g. pictures of African Americans or European Americans) are combined with specific attribute words. So e.g. in the first critical phase African American could be paired with good and European American could be paired with bad. Then pictures of different African American or European American faces appear on screen and participants are supposed to categorize them appropriately. In between the pictures, different words that have positive or negative connotation also appear such as agony, happy, peace, terrible, and participants are asked to categorize those appropriately as well. In the next critical phase, the whole category attribute dimension is reversed such that now instead of pairing African Americans with good and European Americans with bad (as was the case in the first critical phase), African American faces are now paired with bad and European American faces are now paired with good. The rest remains the same. Participants have to categorize African American/European American pictures and words with positive/negative connotation appropriately.

The main thing is what response mapping participants find easier and hence are faster at responding to. For example if participants find responding to pictures of European American faces and categorizing the words as good easier (because of the
automatic preexisting associations between White and good) and thus are faster at that as opposed to categorizing pictures of African Americans faces and positive words that may suggest participant’s implicit preference towards the category European American. On the other hand, if participants are faster at categorizing pictures of African American faces and negatively valenced words appropriately this might indicate automatic bias towards the category African Americans due to preexisting automatic associations between African American and negativity (Fazio & Olson, 2003).

MODE Model: Motivation and Opportunity as Determinants of Behavior

MODE model provides a theoretical basis to predict when the attitudes measured by implicit and explicit attitude measures will be correlated; when would implicit and explicit measures predict the attitudes; and when would individuals make spontaneous versus more deliberative judgments about the attitude objects (Brinol et al., 2008; Eno & Ewoldsen, 2010; Fazio & Towles-Schwen, 1999; Fazio & Olson, 2003; Olson & Fazio, 2008).

MODE model defines attitude as a link between object and its evaluation. According to this model each individual’s attitude towards an attitude object exists on a continuum where one end of the continuum represents no attitude at all and the other end represents extremely strong association between the attitude object and its evaluations rendering the latter association automatic. According to the MODE model individuals can make spontaneous or deliberative judgments regarding the attitude object. Spontaneous judgments are automatic associations between the object and its evaluations and deliberative judgments are more thought out, effortful considerations regarding the
attitude object. Spontaneous attitudes which are accessible in the memory can orient
attention, influence categorization of the attitude object, and bias visual perceptions of the
object (Eno & Ewoldsen, 2010; Fazio & Towles-Schwen, 1999; Roskos-Ewoldsen &
Fazio, 1992). The implication is that attitudes which are so accessible could impact the
way we discern the new information and thereby bias information processing (Roskos-

Whether individuals will make spontaneous or deliberative judgment, is in turn
dependent upon two factors: Motivation and opportunity (Olson & Fazio, 2008).
Motivation can influence the judgments when people have some desire for accuracy, fear
of invalidity, need to belong, and need to feel positively towards the self (Olson & Fazio,
2008). Opportunity to make the judgment involves time and cognitive resources such as
fatigue and self-regulation among other things (Olson & Fazio, 2008). An individual will
choose deliberative processing over spontaneous to make judgments when both the
motivation and opportunity to do so are available. If either (or both) are lacking, then
spontaneous judgments are made.

When attitudes are measured using implicit and explicit attitude measures, for
most topics they are correlated barring socially sensitive topics such as racial issues (Eno
& Ewoldsen, 2010; Olson & Fazio, 2008). This divergence can be explained in terms of
the MODE model. When people are asked about a sensitive topic they might have
concern or restraint motivation to not appear prejudiced (Olson & Fazio, 2008). Given
the opportunity (as is the case with the most explicit measures) the expressed attitudes
might not reflect the real attitudes which implicit attitude measures (e.g. PIAT) might be
more apt at capturing. Therefore the resulting correlation between the attitudes measured through implicit and explicit measures might be low in the context of racial attitudes.

Implicit Attitude Measures: Some Underlying Issues

Implicit measures lack any theoretical perspective to guide them other than simple associations (Olson & Fazio, 2008). MODE model (Fazio & Towles-Schwen, 1999) might be one way to explain when the attitudes will be driven more spontaneously versus deliberatively.

Though implicit measures such as IAT are useful in understanding the underlying attitudes of people which they might not want to disclose honestly due to different reasons, in essence, IAT assesses associations between categories and attributes (black-good, white-good) and not between specific exemplars of those categories and attributes (Olson & Fazio, 2008). Therefore IAT is flawed in the sense that someone might have evaluations towards particular target category but not for specific exemplars (Fazio & Olson, 2003; Olson & Fazio, 2008). Furthermore if the categorization of a particular picture/name is not done by race at the moment when the participant is taking the IAT, then estimate of attitudes as measured by IAT will be different from participants attitudes because this stimulus is not being categorized by race (DeHouwer, 2009; Fazio & Olson, 2003; Olson & Fazio, 2008).

Another issue with IAT is that of extrapersonal associations. For example IAT asks participants to categorize stimulus as good and bad (DeHouwer, 2009). When they do so, participants might not be displaying their attitude towards the stimuli but something else. For example historically African Americans were subjected to negative
treatment (Eno & Ewoldsen, 2010). When these participants are asked to categorize
African Americans, and if they go ahead and categorize the pictures of individuals from
the social category as negative, they actually might be categorizing in response to the
negative treatment that this group received in the past rather than having negative
attitudes towards the target category African American (DeHouwer, 2009; Han, Czellar,
Olson, & Fazio, 2010; Olson & Fazio, 2008). Therefore IAT’s validity may be
questioned.

A recent research provides further evidence that IAT is plagued with
extrapersonal associations and that IAT is malleable and subject to multiple meanings
(Han, et al., 2010). The research found that prior unrelated tasks influenced the salience
of personal versus normative factors such that people scored differently on
“pleasant/unpleasant” labels for different categories when the stem was termed “people
like/people dislike” versus “I like/I dislike”. Han et al. (2010) also found that only
traditional IAT was influenced by the salience of preceding counterfactual information
but Personal IAT (PIAT) which used the category labels “I Like” or “I dislike” was not.
The researchers made it salient to the participants that after an attack, flowers were
considered injurious and insects were considered friendly. Later when these participants
completed the IAT, they labeled flowers negatively and insects positively. However,
participants own personal attitudes didn’t change as shown by their scores on PIAT.
When asked to indicate on PIAT whether they liked flowers or insects participants
answers were not impacted by prior counterfactual information. They still seemed to
prefer flowers and associate unpleasant with insects. Thus Han et al.’s research (2010)
demonstrated that IAT captures some attitudes but the exact validity of the measure remains questionable. PIAT might be a better indicator of participant’s attitudes than traditional IAT.

Attitude and Attribute Accessibility

Attitude accessibility refers to how easily an attitude is accessed from memory (Roskos-Ewoldsen, 2007); it is also conceptualized as the strength between attitude object and its evaluation (Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Fazio, 1993). Priming of certain attitudes activates those attitudes and influences subsequent object evaluations (Fazio & Wilson, 1986). Priming of the word “nurse” for example activated evaluations related to “doctor” (Fazio, 2001). Accessible attitudes can determine behavior when presented with a prime (Roskos-Ewoldsen, 1997) and appropriate context (Slater, 2002) and hence attitude accessibility is especially relevant for health-related behavior change (Shen et al., 2009; Slater, 2006; Roskos-Ewoldsen, Yu, & Rhodes, 2004), voting behavior (Fazio & Williams, 1986), and media effects research (Roskos-Ewoldsen et al., 2002; Nabi & Krcmar, 2004).

While attitude accessibility refers to the ease with which an evaluation (of an attitude object) can be invoked (Fazio & Williams, 1986), attribute accessibility refers to the ease with which the categories regarding the target object could be evoked from the memory (Bruner, 1957; Bussell & Shurm, 2003; Fazio, 1986; Higgins & King, 1981; Higgins, Kind, & Mavin, 1982; Roskos-Ewoldsen, 1997). The target object could be categorized in many different ways first in terms of “superordinate categories” that are
chronically available such as race, sex, or perhaps both and then in terms of other more informative “subtyped categories” (Stangor, Lynch, Duan, & Glass, 1992).

Television portrayals may influence accessibility of constructs temporarily by providing information that could be used in social categorization of the stimuli (Shrum, 1996). These constructs can become available later on and influence impression formation and person perception when a similar target object is encountered (Bargh, 1986; Smith & Zarate, 1992). For example, if a message recipient is exposed to a television portrayal in which a South Asian female physician is portrayed as incompetent, the attribute can become available later on if the message recipient comes in contact with a South Asian female physician in real life. Availability of these attributes can influence future judgments of the target group (Higgins, King, & Mavin, 1982).

Prior research notes two primary influencers of accessibility: Frequency and recency of the prime (Roskos-Ewoldsen, Roskos-Ewoldsen, & Dillman-Carpentier, 2002). Based on this notion, Shrum (1996, 2009) proposed that among heavy viewers of television, certain attitudes and exemplars become chronically accessible due to repeated exposure to the prime and influence message recipient’s future behavior accordingly. Though, quite possible, it is argued that message recipients don’t necessarily have to be heavy viewers for some attitudes to become more readily available. Other processes that a message recipient can engage in with a narrative can also influence accessibility.

One such process is absorption. Absorption into the narrative provides message recipients with an opportunity to experience the narrative world without being physically present in that world (Green & Brock, 2000). This vicarious “direct” experience with the
narrative world could then result in stronger association between the object and its evaluations because past research has demonstrated that attitudes formed through direct experience are stronger, more stable, and more quickly accessible than those formed through indirect experience (Fazio & Zanna, 1981). Therefore it is proposed that:

H4: Transportation into the narrative would moderate the effect of valence of the portrayal on participant’s attitude accessibility towards the out-group South Asians physicians such that with increasing levels of transportation, a stronger effect of experimental manipulation will be observed: persons exposed to a positively valenced portrayal will respond with faster favorable evaluations of South Asians faces; the converse will be true for those participants exposed to the negative portrayals (i.e., slower positive evaluations or faster negative evaluations).

Accessibility of attributes should similarly be aided by narrative transportation by providing the message recipients with a form of vicarious “direct interaction” with the target object. In other words, when message recipients are transported into a narrative featuring an out-group protagonist they are provided with an opportunity to establish intergroup contact with that individual. Naturally the attributes that the individual (protagonist) exhibits should also become more easily available because the message recipients have now established “direct contact”. Attribute generalization when other members of the out-group are judged should then reflect the valence of the portrayal in which message recipients were absorbed or transported. In other words:

H5: Transportation into the narrative would moderate the effect of valence of the portrayal on participant’s attribute accessibility towards South Asians physicians such
that with increasing levels of transportation, a stronger effect of experimental manipulation will be observed; persons exposed to a positively valenced portrayal will respond faster to positive attributes of South Asians faces; the converse will be true for those participants exposed to the negative portrayals.

Another form of engagement with the narratives that the viewers can experience is called identification with the narrative character (Cohen, 2001). Identification with a protagonist is experienced when the message recipient takes on the identity of the character in the narrative and shares the perspective of the character both cognitively and affectively (Cohen, 2001). When one is so absorbed in the text that the merging of the self and the character is the consequence, the attitude towards the out-group character should be moderated by the valence of the portrayals. The study 1 results suggest that valence of the portrayals and not the category affiliation was an antecedent to the identification with an out-group protagonist. Therefore identification should result in attitude accessibility towards the protagonist’s social category being in line with the valence of the portrayal, when a similar target object is encountered. Indeed, identification is particularly likely to be linked to attitudes about person portrayed as it focuses on the extent of emotional engagement with the character. In other words,

H6: Identification into the narrative would moderate the effect of valence of the portrayal on participants’ attitude accessibility towards the out-group South Asian physicians such that with increasing levels of identification, a stronger effect of experimental manipulation will be observed; persons exposed to positively valenced
portrayals will respond with faster favorable evaluations of South Asians faces; the converse will be true for those participants exposed to the negative portrayals.

H7: Identification into the narrative would moderate the effect of valence of the portrayal on participants’ attribute accessibility towards South Asians physicians such that with increasing levels of identification, a stronger effect of experimental manipulation will be observed; persons exposed to a positively valenced portrayal will respond faster to positive attributes of South Asians faces; the converse will be true for those participants exposed to the negative portrayals.

Attributes: Stereotype Content Model (SCM)

The out-group of interest in this research is South Asian physicians as this group of physicians constitute a sizable number of physicians currently practicing medicine in the U.S. (AMA, 2010). Furthermore, because this out-group is considered a “model minority” it is of interest to examine people’s perceptions of this group of physicians and how the “model minority” status that this out-group holds may influence accessibility of attitude and attributes.

The Stereotype Content Model (SCM; Fiske et al., 2002; Fiske, Cuddy, & Glick, 2007) posits that people use two criteria to evaluate out-group members. They first assess the intentions of the out-group member followed by their perceptions regarding the ability of the out-group member to carry out those intentions. The “perceived intent” is captured by the “warmth” dimension (measured by the following variables: friendly, good-natured, sincere, and warm) and “perceived ability” is captured by the competence dimension (measured through the following variables: competent, capable, confident, and
skillful) (Cuddy et al., 2008, 2009). Most people hold mixed stereotypes towards the members of the racial categories (Fiske et al., 2007). For example, groups that are high on warmth dimension are perceived to be low on competence dimension (e.g., “housewives”) and those that are high in competence dimension are perceived to be low on warmth dimension (e.g., “Asians”) (Cuddy et al., 2008). In-group is considered high in both competence and warmth dimension (Fiske, Cuddy, Glick, Xu, 2002).

It should be noted that the primary purpose of this study is to examine the influence of narrative engagement on accessibility of attitudes and attributes. The main concern is not to expand or test SCM. The main reason for incorporating SCM in the study was to use the specific items from SCM to measure attribute accessibility regarding South Asians because it was noticed after study 1 was conducted that the experimental manipulation may have been violating the stereotypes regarding Asians as per SCM; high in competence but low in warmth (Lee & Fiske, 2006). The narrative video manipulation used in this research portrays South Asians differently from how they are perceived by most people according to SCM. In the positively valenced portrayal South Asians are portrayed as high in both competence ($M = 8.48, SD = 1.84$) and warmth ($M = 9.13, SD = 1.63$) and in the negatively valenced condition South Asians are portrayed as low in both competence ($M = 6.66, SD = 1.79$) and warmth ($M = 6.24, SD = 2.21$). Therefore, the clips portray the out-group non-stereotypically and violate Asian stereotypes as predicted by SCM.

The attributes assessed in the attribute accessibility tests, described above, are based largely on the SCM (please see the methods section). Since these SCM attributes
were not assessed in Study 1, it was important to confirm whether or not deliberative effects on these measures (towards the protagonist) could be detected and then generalized to the larger category:

**RQ1:** Would participants’ explicit judgment of the protagonist as measured by the SCM items (competence, capability, confidence, skillful, warmth, good-natured, sincere, and friendly) lead to attitude generalization towards the out-group on the similar attributes?

Of substantive interest in the study is if the participant’s perceptions of the protagonist predict their reaction-time regarding the out-group on the same attributes and if the valence of the portrayal predicts participant’s reaction-time regarding the out-group South Asian physicians—in other words, might we find main effects of the manipulation that are not contingent on transportation or identification? Therefore, we ask:

**RQ2:** Will valence of the portrayal predict attitude accessibility after controlling for participants’ baseline reaction-time on the task measuring attitude accessibility?

**RQ3:** Will valence of the portrayal predict attribute accessibility after controlling for participants’ baseline reaction-time on the task measuring attribute accessibility?
CHAPTER 6

STUDY 2: METHOD

Design

As in study 1, this study also employed a 1X3 experimental design (valence: positive, negative, control) to examine the influence of media messages on participants' attitudes regarding South Asians and South Asian physicians. The same video stimuli were used in this study as well. Again the control condition was included for comparison purposes and to understand the influence of valence. The data from the participants in the control condition was removed when the analyses were run to test the hypotheses involving narrative engagement as a moderator variable as inclusion of that data would be redundant because of the considerably less prominence given to the out-group protagonist in the control condition. Obviously, questioning the participants in the control condition regarding their attitudes towards the out-group protagonist who is featured in the background in the video would only lead to noise as the judgments would not be a consequence of the experimental manipulation. The control condition was also dropped from other interaction analyses if results were initially significant but visual inspection showed that effects of positive and negative portrayals were close to parallel and the interaction was due to differences from control, as all interaction hypotheses concerned differences associated with the positive versus negative conditions. For the detailed
description of the stimuli, please refer to the methods section of study 1. This study also employed additional measures as described below.

Participants

224 participants recruited from various communication classes at The Ohio State University participated in the study. The subjects were almost equally distributed across the three experimental conditions (positive=73, negative=77, control=73). Participants on an average were 20.5 years old ($SD = 2.92$), 55% ($n = 124$) were females, and almost 60% were Caucasian ($n=132$).

Procedure

Participants came into the communication research space and were told that they would be randomly assigned to watch one of the three videos and would be answering some questions following the video, on the computer. About 12 participants were scheduled per session. They were seated in a large room separated from each other by partitions.

After signing the informed consent, the participants were randomly assigned to watch the video stimulus associated with each experimental condition (described below). Following that, the participants began the reaction-time tasks to measure attitude or attribute accessibility. All the participants completed both the reaction-time tasks. However, the order was randomized. Some participants completed reaction-time task to measure attitude accessibility first while the others completed the attribute accessibility task first.
Measures

The experiment in study 2 involved two additional kinds of measures that were not used in the Study 1. These included reaction-time tasks to measure attitude and attribute accessibility. Traditional explicit measures to assess attitudes, media usage habits, media engagement with the experimental manipulation, and prior contact with the out-group were also used in the Study 2. The majority of the questions on the explicit measure were the same as those used in study 1. However some other additional deliberative measures were also added in this study. Please see Appendix B for the details of the measure. In the next section, reaction-time measures are outlined first followed by the explanation of the additional deliberative measures used exclusively in study 2. Please see the methods section of the study 1 for details on other measures used in this study. Please see appendix B for the measure used in Study 2.

Attitude Accessibility

The reaction-time task for measuring accessibility of participant’s attitudes towards South Asian female physicians was adapted from a previous study (Rhodes & Ewoldsen, 2008, 2009). Participants were asked to indicate whether they liked or disliked a particular item by pressing one of the two keys. The detailed instructions were provided before the task began and the participants were also reminded of the instruction during the experiment. They were told that they should be fast and maintain their speed but should not be so fast that they make inaccurate judgments. Please see appendix C for the details on the attitude accessibility measure.
Participants completed four blocks of 12 items each. Before beginning the task, a set of instructions were provided that emphasized the participants to maintain both speed and accuracy during the task. The first block, which was the practice block, instructed the participants to press the “like” and the “dislike” key so that they could become accustomed to the task. The second and the third block, again consisting of 12 items each, presented the participants with pictures of the objects such as “puppy”, “spider”, and pictures of people of different ethnicities. Blocks 2 and 3 were practice blocks like block 1, but in these blocks the participants were also presented with attitude objects so that they could rehearse and become familiar with the evaluation task. These blocks consisted of pictures of male and female, physicians and non physicians from Asian, African American, and Hispanic ethnicities.

The purpose of including pictures of people of different ethnicities and gender were twofold. As mentioned before, one purpose was to familiarize the participants with the task. The other purpose was to mask the intent of the study that the researcher was specifically interested in understanding the participant’s perceptions of South Asian female physicians. Block 4 which was the critical block also consisted of 12 items. Participants were presented with the pretested pictures of European American and South Asian female physicians and non-physicians in this block and were instructed to evaluate the pictures by pressing one of the two-like/dislike-keys. Block 1-4 also consisted of one item each instructing the participants to press the “like” and the “dislike” key to assess their baseline reaction-time on those particular blocks.
Accessibility of Attributes

One of the other purposes of the study was to understand if valence of the portrayal featuring an out-group protagonist influences accessibility of the attributes in message recipients when a similar attitude object is presented. To understand the extent of generalization, the participants were instructed to indicate, by pressing either the “yes” or the “no” key, if they associated a particular attribute with the attitude object. Reaction-times of the participants were recorded and indicated the strength of the association between the attitude object and the attribute. Please see appendix D for the details on the measure.

After presenting the participants with detailed instructions that were similar to the attitude accessibility tasks, they were presented with combinations of words in block 1. The purpose of this block was to familiarize the participants with the reaction-time task. Block 1 consisted of 12 trials. On each trial, the participants were presented with two words. The first word flashed on screen for 1500 ms and was followed by another word. The participants were instructed to press “yes” if they thought that the first and the second word was related and “no” if they thought otherwise. For example, after being presented with the word “blue” for 1500 ms, the participants were presented with either “ocean” or “city” and they were instructed to indicate if they perceived the words to be related (or not) by pressing the “yes” or “no” key. The instructions stressed the importance of maintaining speed and accuracy.

Block 2 and 3 were critical blocks and consisted of 22 items each. On each item, the participants were presented with a pretested picture of a South Asian or a European
American female physician for 1500 ms. The picture was followed by an attribute derived from the Stereotype Content Model (SCM; Fiske et al., 2002) that measures attributes associated with competence and warmth. The model outlines 8 attributes in total but one of the 8 (sincerity) was dropped in the reaction-time time task by an oversight. The final reaction-time task to measure attribute accessibility had 7 items from SCM. Since all the SCM items included in the reaction-time task were positively valenced attributes, for reliability purposes, three negatively valenced attributes that were not a part of the SCM (uncaring, mean, and unpleasant) were also included in the attribute accessibility task. These items were recoded in a positive direction for the purposes of data analysis.

Participants were instructed to indicate, as quickly and accurately as possible, if the picture and the attribute was related by pressing the “yes” or “no” key. Each block also consisted of 2 pictures that were not critical but served to measure the participant’s baseline response speed on that block. In total, the participants indicated the strength of association between 10 attributes for four different pictures, two of which were of South Asian female physicians and two were of European American female physicians.

Pretest of Target Faces

Before including the pictures as critical items in the reaction-time tasks to measure participant’s accessibility of attitudes and attributes towards people of different ethnicities, it was important to pretest the pictures. Pretesting would ensure that participants perceived the ethnicity of the target object as intended by the researcher. E.g. if the researcher is interested in assessing people’s perceptions regarding South Asian physicians, it is important that the majority of the participants perceive the person in the
picture during the reaction-time task as being of South Asian ethnicity. It was also important to establish that persons portraying the target (South Asian women physicians) were perceived as similar with respect to characteristics such as age and attractiveness so that results in response to these pictures would be more likely to be comparable.

The pretesting of the pictures was done twice. In the first study, participants were shown pictures of people of different ethnicities and were instructed to assess the ethnicity, along with making judgments on the other characteristics. Because on most pictures, the majority of the participants were not able to assess the South Asian ethnicity of the target in the picture, the pretest was conducted again with a different set of pictures. Here the details on the second pretest are provided because the pictures used in the reaction-time task were based on the results of this pretest.

**Pretest Method**

*Procedure and participants.* Students in communication classes were invited to participate in a ten minute online survey. 67 students completed the survey and were offered extra credit in exchange for their participation. The survey was hosted on the website [https://osucomm.qualtrics.com](https://osucomm.qualtrics.com). Most participants were Caucasian (90%) women (63%). The mean age of the participants was 21 years (SD = 1.62).

*Measure-Ethnicity.* The participants were presented with pictures of physicians of different ethnicities and were instructed to assess the ethnicity of people in the pictures. Out of a total of 31 pictures, six each were of South Asian and Caucasian female physicians. The rest of the pictures were of male and female physicians of East Asian, South Asian, Hispanic, African American, and European American ethnicity.
*Measure-Age.* The participants were instructed to assess the age of the person in each picture. This question was presented only for South Asian and European American female physicians as these were the pictures that were to be included as the critical items to assess reaction-time to measure attitude and attribute accessibility.

*Measure-Attractiveness.* On a scale of 1 (*least*) to 5 (*most*) the participants were instructed to assess the attractiveness of South Asian and European American female physicians (12 items; $\alpha = .78; M = 2.9, SD = .48$).

*Pretest Results*

*Ethnicity.* Please see the table below that describes the researcher’s perception regarding the ethnicity of the people in the picture and the number of people who perceived that person to be of that ethnicity. Please see appendix E for the target faces of South Asian physicians used in the study.
Table 1

*Perceived Ethnicity of the Target in the Pictures*

<table>
<thead>
<tr>
<th>Researcher’s perception regarding the ethnicity of the person in the pictures</th>
<th>Participants perceptions regarding the ethnicity of the person in the picture (highest number reported)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American female-1</td>
<td>88%</td>
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<tr>
<td>African American female-2</td>
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</tr>
<tr>
<td>African American male-1</td>
<td>97%</td>
</tr>
<tr>
<td>African American male-2</td>
<td>98.5%</td>
</tr>
<tr>
<td>Asian female-1</td>
<td>82%</td>
</tr>
<tr>
<td>Asian female-2</td>
<td>84%</td>
</tr>
<tr>
<td>Asian male-1</td>
<td>87%</td>
</tr>
<tr>
<td>Asian male-2</td>
<td>88%</td>
</tr>
<tr>
<td>European American female-1</td>
<td>98.5%</td>
</tr>
<tr>
<td>European American female-2</td>
<td>92.5%</td>
</tr>
<tr>
<td>European American female-3</td>
<td>100%</td>
</tr>
<tr>
<td>European American female-4</td>
<td>98.5%</td>
</tr>
<tr>
<td>European American female-5</td>
<td>95.5%</td>
</tr>
<tr>
<td>European American female-6</td>
<td>98.5%</td>
</tr>
<tr>
<td>European American female-7</td>
<td>92.5%</td>
</tr>
<tr>
<td>European American male-1</td>
<td>100%</td>
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Continued
Table 1 continued

<table>
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<tr>
<th>Ethnicity</th>
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</tr>
</thead>
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<td>54%</td>
</tr>
<tr>
<td>Hispanic female-2</td>
<td>66%</td>
</tr>
<tr>
<td>Hispanic male-1</td>
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</tr>
<tr>
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<td>55%</td>
</tr>
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<td>76%</td>
</tr>
<tr>
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<td>19%</td>
</tr>
<tr>
<td>South Asian female-3</td>
<td>24%</td>
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<tr>
<td>South Asian female-4</td>
<td>82%</td>
</tr>
<tr>
<td>South Asian female-5</td>
<td>50%</td>
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<tr>
<td>South Asian female-6</td>
<td>57%</td>
</tr>
<tr>
<td>South Asian male-1</td>
<td>84%</td>
</tr>
<tr>
<td>South Asian male-2</td>
<td>39%</td>
</tr>
<tr>
<td>South Asian male-3</td>
<td>52%</td>
</tr>
</tbody>
</table>

Based on the above information, pictures 1 and 4 were chosen in the reaction-time task to measure participants’ accessibility of attitude and attributes towards South Asian female physicians.

Paired sample *t*-tests indicated no difference *t*(66) = .29, *p* > .05 between the participants assessment of ages of the pictures of the South Asian females 1 (*M* = 25.95, *SD* = 5.28) and 4 (*M* = 25.76, *SD* = 2.54). There was no difference in participants’
perceptions of attractiveness $t(66) = .22, p > .05$ between picture 1 ($M = 3.27, SD = .84$) and picture 4 ($M = 3.30, SD = 1.01$). Both were of similar age as the protagonist character in the video stimulus (adult, but youthful).

Stereotype Content Model.

Participants were asked to indicate on a scale of 0 (not at all) to 10 (extremely) their perceptions of competence and warmth of the protagonist they saw in the video. Cuddy et al.’s (2009) SCM measure consists of eight items each, four of which measure competence (competent, confident, capable, skillful) and the other four measure affect (friendliness, warmth, good-natured, sincere). An index of protagonists’ competence ($\alpha = .86; M = 7.44, SD = 1.84$) and affect ($\alpha = .93; M = 7.49, SD = 2.17$) was created by summing the participants responses on the items measuring competence and warmth.

Positive Affect/Negative Affect Schedule.

Participants’ emotional reactions to the video was measured by asking their response on ten items (Mackinnon et al., 1999) on a 5-point (strongly disagree) to (strongly agree) scale. Five of the 10 items measured positive affect ($\alpha = .88; M = 2.7, SD = .88$) and the other five measured negative affect ($\alpha = .90; M = 1.95, SD = .88$) evoked due to the video. This measure served as a manipulation check.

Motivations to Reduce Prejudice

Participants’ motivation to reduce prejudice (17 items; $\alpha = .73; M = 6.2, SD = 1.27$) was measured on a 0 (strongly disagree) - 10 (strongly agree) scale by Dunton and Fazio (1997). Due to an experimental error, one item was accidently dropped. This scale was added as a potential covariate. However, because no difference was found on
participants’ scores on this measure across different conditions, it was not used in the final analyses.
CHAPTER 7

STUDY 2 RESULTS

Hypotheses Based on Study 1 Findings

Hypotheses 1 and 2 proposed that quality of contact would be a significant predictor of attitudes towards South Asians and South Asian female physicians. To test these hypotheses, a linear regression was run with quality of contact as a predictor variable and attitude as an outcome variable. As hypothesized based on the study 1 findings, quality of contact ($M = 4.78, SD = 1.28$) predicted attitudes towards South Asians ($M = 6.34, SD = 1.58$) in general [$b = .48$, $t(193) = 7.5$, $p < .001$] and South Asian female physicians ($M = 6.84, SD = 1.7$) in particular [$b = .43$, $t(193) = 6.6$, $p < .001$].

Based on the results of study 1, it was hypothesized that participants who have high prior contact with the out-group South Asians, will express lower anxiety. This hypothesis was supported. Participants with high quality of prior contact expressed lower levels of anxiety towards the out-group South Asian [$M = 3.77, SD = 1.75; b = -.32$, $t(193) = -4.77$, $p < .001$].

Replication of Results Found Non-Significant in Study 1

The proposed relationships that were non-significant in study 1, between media engagement variables and intergroup attitudes, were tested again to ensure that the results
replicated those from study 1, and indeed valence of the portrayal or engagement with the narrative did not have any influence on participant’s out-group attitudes, as before.

The first set of analyses confirmed that the valence of the portrayal still did not influence participants’ attitudes towards South Asians. A custom ANCOVA model was created with condition as a fixed factor. Quality of contact was added as a continuous covariate and the interaction term between the condition and the quality of contact was also added in the model to test for interaction between prior contact and valence. There was no effect of condition \([F (2, 189) = .36, p = .7]\) on participants’ intergroup attitudes. Prior contact \([F (2, 189) = .73, p = .48]\) did not moderate the effect of condition either.

Analyses were also run to test for the effect of the valence of the portrayal on participants’ attitudes towards South Asian female physicians and if prior contact moderated the effect of condition on attitudes. The model was set up in the following manner. Prior contact was added as a covariate and the condition was added as a fixed factor. Frequency of visit to South Asian physicians was excluded from the model in this study due to the lack of significant correlation with the outcome variable (Lomax, 2007) and due to the lack of difference between different conditions. The results replicated the study 1 results. There was no effect of valence of the portrayal \([F (2, 189) = .24, p = .79]\) on participants’ attitudes towards South Asian female physicians. Prior contact \([F (2, 189) = .39, p = .68]\) did not moderate the effect of valence either.

Valence of the portrayal did not influence intergroup anxiety and prior contact did not moderate the effect of valence on anxiety, similar to what was found in study 1. In the ANCOVA model (condition: positive, negative, control) prior contact was added as a
covariate. An interaction term between condition and prior contact was created and added to the model. The results replicated the results of study 1. There was no effect of condition $F(2, 189) = .64, p = .53$ on anxiety. Prior contact did not moderate the effect of condition on participants’ intergroup anxiety towards South Asians $[F(2, 189) = .84, p = .43]$.

The analyses were also run to test for the moderating role of identification by condition on participants’ out-group attitudes. The one factor ANCOVA (condition: positive, negative, control) model was set up in the following manner: Identification and quality of contact were added as continuous covariates. An interaction term for identification by condition was created and added to the model. As in study 1, identification did not moderate the influence of valence on attitudes towards South Asians $[F(2, 188) = .39, p = .68]$ or South Asian physicians $[F(2, 188) = .24, p = .78]$. There was however a significant effect of identification with the protagonist $[F(1, 188) = 4.89, p = .03]$ on attitudes towards South Asian physicians in general. As the levels of identification ($M = 4.17, SD = 1.12$) with the protagonist went up, participants expressed more positive attitudes ($M = 6.83, SD = 1.72$) towards South Asian physicians $[b = .26, t(221) = 4.02, p < .00]$. As in study 1, identification did not moderate the effect of portrayal on participants’ intergroup anxiety $[F(2, 188) = .95, p = .34]$.

The next set of analyses was run to test for the effect of transportation as a moderator of condition on the following outcome variables: Attitudes towards South Asians; attitudes towards South Asian physicians; and intergroup anxiety towards South Asians.
The ANCOVA model was set up in the following manner. Condition (positive, negative and control) was added as a fixed factor. Quality of contact and levels of reported transportation were added as covariates. An interaction term between condition and transportation was created and added in the model. The outcome variable as noted above was either the attitude towards South Asians in general or South Asian physicians in particular, and intergroup anxiety.

Transportation did not moderate the effect of valence of the portrayal on participants intergroup attitude towards South Asians \([F(2, 188) = 1.71, p = .18]\) or South Asian physicians \([F(2, 188) = .68, p = .51]\). Levels of transportation \((M = 4.22, SD = .96)\) however did significantly predict participants attitude towards South Asian physicians \([b = .19, t(221) = 2.89, p = .004]\) suggesting that as participants became more transported into the narrative, they expressed more positive attitude towards South Asian physicians. There was no interaction between transportation by condition on participants’ intergroup anxiety \([F(2, 188) = .26, p = .77]\). These set of results largely replicated the results from the study 1. The only difference was that transportation became a significant predictor of attitudes towards South Asia physicians in this study, unlike study 1, where transportation did not have any effect on the attitudes but influenced participants’ perceptions of comfort and satisfaction towards South Asians physicians.

Results on Reaction-Time Measures

*Transformation of Reaction-Time Data*

*Attitude Accessibility.* Reciprocal transformation was carried out on reaction-time data as it tends to be highly skewed (Rhodes & Ewoldsen, 2008, 2009). This procedure is
based on the previous studies by Rhodes & Ewoldsen (2008, 2009). To perform the reciprocal transformation, the response of each participant, measured in milliseconds, was first divided by 1 and then multiplied by 1000. The resulting number represented the response speed rather than response time. In other words, the higher number represents faster response speed, indicative of automaticity. The higher the number, the quicker the response speed, suggesting the faster accessibility of a particular attitude or attribute.

The transformed reaction-times were multiplied by the valence of the response (coded as positive 1 or negative 1) to obtain interaction terms suggesting both the response speed and the valence. The higher positive number indicates a highly accessible favorable attitude towards South Asian female physicians and the lower number indicates less accessible favorable attitudes. Conversely, a low negative number would suggest a less accessible negative attitude, and a high negative number would suggest a more accessible negative attitude, providing a continuous scale from highly accessible negative attitudes at one end to highly accessible positive attitudes at the other.

Three items measured participants’ attitude accessibility on the reaction-time task. In other words, the participants indicated their attitude towards South Asian female physicians by pressing the “like” or “dislike” button responded for three different pretested pictures of South Asian female physicians. Following the reciprocal transformation and after creating the interaction term by multiplying the reaction-time with valence, these three variables were examined for outliers. Responses over or under 3 standard deviations from the mean were deleted. Before the variables were trimmed, each variable measuring attitude accessibility had $n=224$. Trimming of the variables did
not result in significant data loss ($n = 223$). After running a reliability analysis, two of these three variables (pictures) were combined to create a scale of “valenced attitude accessibility” ($\alpha = .81; M = .99, SD = 1.18$). This term was used in the analyses as the dependent variable to test the hypotheses involving attitude accessibility. Transformed reaction time on other items included in the attitude accessibility task was averaged and served as a measure of baseline response time.

Attribute accessibility. Reciprocal transformation was carried out on the items measuring attribute accessibility in a manner similar to the one described above for attitude accessibility. As noted in the methods section, ten items measured attribute accessibility. By pressing the “yes” or “no” key, the participants responded to two pretested pictures of South Asian female physicians on these ten attributes. All the critical items and the other items included in attribute accessibility task were subjected to reciprocal transformation and were then multiplied by valence of the response (+1 for positive and -1 for negative). This yielded a measure of “valenced attribute accessibility”. Participants’ reaction-times on all except critical items (those involving pictures of South Asian female physicians) were averaged to yield a measure of baseline response time for the attribute accessibility task. The critical items were examined for outliers and responses over and under 3 standard deviations were deleted. Table 2 provides sample sizes on each critical variable measuring attribute accessibility before and after the outliers were removed. The names of the attributes are mentioned prior to the number. The number indicates if the attribute was associated with picture 1 or with picture 2. Please see appendix E for the pictures used in the reaction-time tasks.
Table 2

Sample Size Before and After Removing the Outliers in Reaction-Time Task to Measure

Attribute Accessibility

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<th>Variable name</th>
<th>Sample size before removing the outliers</th>
<th>Sample size after removing the outliers</th>
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</thead>
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<td>222</td>
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<td>Capable-2</td>
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<td>220</td>
<td>224</td>
<td>215</td>
</tr>
</tbody>
</table>

The pictures of South Asian female physicians used in the attribute accessibility task were pretested (for details please see the Methods section) to ensure that they were perceived as similar on age, ethnicity, and attractiveness. Although utmost care was observed in assuring comparability of the pictures, in the reaction-time task to measure attribute accessibility the participants did not perceive these pictures to be similar on most attributes as indicated by non-significant correlations and low reliabilities. Please refer to table 3 for reliability and correlations statistics for each set of picture and attribute. The results were confirmed using repeated measure analyses and paired sample t-tests. Participants judged the pictures differently on each attribute.

These results suggest that interpretation of faces can be idiosyncratic with respect to judging attributes, more so than with respect to more affective attitudinal evaluations. Participants’ responses on attitude accessibility were quite reliable between faces ($\alpha = .81$) However, the participants perceived most attributes of the two individuals differently even when these individuals were judged similar in terms of demographic characteristics and attractiveness attribute as suggested by the pretest results. Because the participants associated the same attribute differently for each picture and in eight of nine cases good
reliability was not obtained, the analyses on each attribute accessibility item were run separately. The items were not combined in a scale.

Table 3

*Pearson’s r and Reliability Coefficient for Critical Items Measuring Attitude and Attributes Accessibility with South Asian female Physicians*

<table>
<thead>
<tr>
<th>Attitude/Attribute</th>
<th>Pearson’s r</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Like</td>
<td>.68**</td>
<td>.81</td>
</tr>
<tr>
<td>Capable</td>
<td>.22**</td>
<td>.36</td>
</tr>
<tr>
<td>Warmth</td>
<td>.44**</td>
<td>.60</td>
</tr>
<tr>
<td>Friendliness</td>
<td>.36**</td>
<td>.53</td>
</tr>
<tr>
<td>Skillful</td>
<td>.30**</td>
<td>.46</td>
</tr>
<tr>
<td>Confident</td>
<td>.41**</td>
<td>.58</td>
</tr>
<tr>
<td>Competence</td>
<td>.79**</td>
<td>.86</td>
</tr>
<tr>
<td>Caring</td>
<td>.25**</td>
<td>.40</td>
</tr>
<tr>
<td>Nice</td>
<td>.19**</td>
<td>.30</td>
</tr>
<tr>
<td>Pleasant</td>
<td>.21**</td>
<td>.35</td>
</tr>
</tbody>
</table>

**p < .001

*General Data Analysis Strategy*

A one way analysis of variance (ANOVA) indicated no difference between the conditions in participants’ level of familiarity with the show *ER* \( F(2, 220) = 1.32, p = .27 \). There were no differences found in participants’ frequency of watching the protagonist *Neela Rasgotra* on the other episodes of the show *ER* \( F(2, 220) = 2.28, p = .
No differences were found in terms of the quality of contact with South Asians across conditions \(F(2, 192) = 1.13, p = .33\). Therefore these variables were not included as covariates in the main analyses as the participants were randomly distributed across conditions.

In study 2, the motivations to reduce prejudice scale was also included as a potential covariate. This scale was not included in study 1. The results revealed no difference across condition and hence this was not included as a covariate either.

**Attitude Accessibility**

*Test of main effects.* RQ2 proposed the valence of the portrayal will influence accessibility of attitude regarding South Asian female physicians such that people exposed to the positively valenced condition will be quicker to indicate their favorable attitudes towards South Asian female physicians and those in the negatively valenced condition will be slower.

A one factor ANCOVA (Condition: positive, negative, control) with baseline reaction-time on the attitude accessibility task as a covariate revealed no main effect of condition on participants’ attitude accessibility regarding South Asian female physicians \(F(2, 216) = .09, p = .92\).

*Test of Interaction effects.* Transportation into the narrative, identification with the protagonist, and the main characters typicality to her in-group (South Asians and South Asian physicians) were proposed as the moderators of the effect of condition on attitude accessibility regarding South Asian female physicians.
An ANCOVA revealed significant results for many interaction terms (e.g. group typicality and condition). To probe the nature of these interactions, for every significant interaction term, multiple linear regressions were run after splitting the file by condition. In one step, predictor variable (either identification/transportation/group typicality) and the baseline reaction-time were added. Reaction-time for attitude accessibility towards South Asian female physicians was the dependent variable. The interactions were plotted using beta weights for each condition. The plots demonstrated that in many but not all instances the significant effect were due to the responses of the participants in the control condition.

The control condition featured the protagonist but she remained primarily in the background and was not shown as an active physician. Therefore measures that assessed participant’s involvement with the protagonist such as identification don’t yield much meaningful information for participants in the control condition. The interaction seems to be significant perhaps due to some artifact rather than due to the experimental manipulation. Perhaps participants in the control condition may have been using schemas that existed prior to the experiment and that were not interfered with by new information. In other words, participants’ accessible responses may be an artifact of chronically accessible attitudes and associations regarding South Asians that may have been confounded with transportation/identification, and thus generated distinct effects irrelevant to the theory being tested in this research.

Therefore in all such cases, where the interaction between the experimental manipulation and another predictor variable was significant, the ANCOVA was run again
after excluding the data from the participants in the control condition. If the interaction effect still remained significant, that suggests that the predictor variable was working differently for participants in the positively and negatively valenced conditions. In other words, the manipulation was influencing the outcome variable through the moderator. If the significant interaction effect went away after the data from the participants in the control condition was removed, this is suggestive of the effect being due to some artifact of prior attitudes and associations rather than due to the experimental manipulation.

The number of significant interactions went down significantly after the analyses were run again, without the data from the participants in the control condition. Table 4 lists the beta coefficients for the moderator variable by condition if the significant interaction was found before excluding the data from the participants in control condition. As can readily be seen, in most but not all cases the betas for the positive and negative condition were similar and it was the control condition that was clearly the source of the interaction.

Hypothesis 4 proposed that transportation into the narrative should moderate the effect of the valence of the portrayal on participant’s accessibility of attitudes regarding South Asian female physicians. One factor ANCOVA (Condition: positive, negative, control) with baseline reaction-time on attitude accessibility task, transportation, and the interaction term (condition and transportation) as covariate revealed no condition by transportation effect on participants accessibility of attitude regarding South Asian female physicians \[F(2, 215) = .19, p = .83\].
To test the effect of identification as a moderator of the effect of valence of the portrayal on participants’ attitude accessibility, the model was set up in the following manner: Condition was added as a fixed factor. Identification was added as a covariate as was the baseline response time on attitude accessibility task. Interaction term for identification and the condition was created and added to the model.

A one factor ANCOVA (Condition: positive, negative, control) revealed a significant condition by identification effect on participants accessibility of attitude regarding South Asian female physicians [$F(2, 215) = 3.49, p = .03$] and the effect remained significant when the analysis was run again after excluding the data from the participants in the control condition [$F(1, 145) = 4.11, p = .04$]. To probe the nature of the interaction, linear regression was performed after excluding the data from the participants in control condition. After the file was split by condition, baseline response time and identification was added in the model in one step. The results suggest that in the positive condition ($M = .83, SD = 1.23$), as participants’ levels of identification increase, their favorable attitudes towards South Asian female physicians become more easily accessible [$b = .21, t(70) = 1.82, p = .07$] as they were quicker to indicate like on seeing the picture of a South Asian female physician. In the negative condition ($M = 1.05, SD = 1.11$), however as the levels of identification go up, the participant’s became slower to indicate their favorable attitudes towards South Asian physicians [$b = -.11, t(74) = -1.06, p = .29$]. Hypothesis 5 was thus supported.
Figure 2. Moderating effect of identification by condition on participants’ attitude accessibility towards South Asian female physicians.

Note: Positive condition refers to the exposure to positively valenced portrayal. Negative condition refers to the exposure to negatively valenced portrayal. The dependent measure is transformed reaction-time for attitude accessibility. A higher number indicates faster response time for favorable evaluation. Reaction-times are corrected for baseline response speed on the task measuring attitude accessibility.

To test the moderating effect of group typicality by condition, the ANCOVA model was set up by adding condition as a fixed factor, baseline reaction-time, and Neela’s typicality to South Asians in general (or to South Asian physicians in particular, depending upon the hypothesis) as covariates. Neela’s typicality to South Asians \([F(2, 215) = .04, p = .96]\) or South Asian physicians \([F(2, 215) = .13, p = .88]\) did not moderate
the effect of condition on participants’ attitude accessibility regarding South Asian female physicians.

*Attribute Accessibility*

As noted elsewhere, reaction-time on accessibility of attributes was measured by instructing the participants to respond to ten different attributes for two different pretested pictures of South Asian female physicians. Because of the generally unacceptable reliabilities, the participant’s attribute accessibility on each picture was kept separate.

*Test of main effects.* To test the effect of the condition on participant’s accessibility of attributes, as asked in RQ3, the model was set up in the following manner. Condition was added as a fixed factor and participant’s baseline reaction-time on attribute accessibility task was added as a covariate. Reaction-time on different attributes was the outcome variables. The condition did not influence reaction-time on accessibility of any attributes for both the faces. Since there was no main effect of condition, this hypothesis was not supported.

*Test of interaction effects.* Interaction effect was tested by setting up a model in the following manner. Condition was added as a fixed factor. Baseline reaction-time and the appropriate moderator (identification/transportation/group typicality to South Asians/group typicality to South Asian physicians) were added as covariates. The interaction terms between the condition and the moderator were also added to the model. If the interaction between condition and the moderator (identification/transportation/group typicality) was found to be significant, the analyses were run again after excluding the data from the participants in the control condition. If
the significant effect still persisted, only then can the inference be drawn that the moderator was influencing the dependent variable differently in the positive and negative conditions. In the results that follow, only those interactions are reported as supporting hypotheses that remained significant even after the data from the control condition was taken out. If the significant interaction effect became non-significant after the analysis were run again without the participants from the control condition, it could be assumed that the control condition was driving the results. In such cases, the beta coefficients for the moderator variable by condition are listed in table 4.

**Capable.** Identification moderated the effect of condition in how quickly participants associated capability with one of the South Asian female physician pictures \[F(2, 211) = 4.66, p=.01\]. When the analysis was run after excluding the data from the participants in the control condition, the moderation effect still persisted \(F (1, 144) = 4.06, p=.05\). To assess the pattern of the interaction, regression analyses were performed after splitting the file by condition. When the participants identified with the protagonist, they were quicker in associating the attribute “capable” with one of the South Asian female physicians in the positively valenced condition \([M = 1.43, SD = .64; b = .06, t(69) = .50, p = .62]\) but were slower in the negatively valenced condition \([M = 1.33, SD = .85; b = -.24, t(74) = -2.19, p = .03]\).
Figure 3. Moderating effect of identification by condition on participants’ accessibility of the attribute “capable”.

Note: Positive condition refers to exposure to the positively valenced portrayal. Negative condition refers to exposure to the negatively valenced portrayal. The dependent measure is transformed reaction-time for the attribute “capable”. The interaction was significant for only one of the two pictures of South Asians female physicians. A higher number indicates a faster response time for associating positive attribute with the attitude object. Reaction-times are corrected for baseline response speed on the task measuring attribute accessibility.

*Warmth.* Identification moderated the effect of condition on participant’s reaction-time in associating the attribute “warmth” with one of the South Asian female physicians \[F(2, 215) = 3.86, p=.02\]. To probe the nature of the interaction, multiple linear regression was run by splitting the dataset by condition. *Beta* weights for the regression
analyses (please see table 4) suggests that the interaction between condition and identification exists primarily due to the control condition. This was confirmed by running a univariate ANCOVA again after excluding the data from the participants in the control condition. The interaction effect between identification and condition disappeared when the data from the participants in the control condition was deleted \[ F(1, 145) = 1.65, p=.2 \].

*Good-natured.* Identification moderated the effect of condition on participant’s response-time in associating the attribute “good-natured” with one of the South Asian female physician pictures \[ F(2, 215) = 3.97, p=.02 \]. When the nature of the interaction was probed using regression analysis, beta weights (please see table 4) for each condition suggested that the effect existed primarily due to responses of the participants in the control condition. Indeed the interaction effect disappeared when ANCOVA was run again after excluding the data from the participants in control condition \[ F(1, 145) = .86, p = .35 \]. Please refer to table 4 for beta weights by condition.

The protagonist *Neela’s* representativeness to her in-group South Asians was proposed as another moderator of valence of the portrayal on participants’ reaction-time in associating the attribute “good-natured” with South Asian female physicians. A one factor ANCOVA (Condition: positive, negative, control) revealed significant interaction effect of group typicality by condition \[ F(2, 215) = 4.22, p = .02 \]. This effect was significant for one of the two pictures only. To probe the interaction, a linear regression was run after splitting the file by condition. The probing revealed that the effect existed primarily due to the control condition. Please see table 4 for the beta weights by
condition. The interaction effect disappeared when the ANCOVA was run again on the data from the participants in the positive and negative conditions only \(F(1, 145) = .04, p = .85\).

Representativeness of Neela as a typical member of South Asian physicians, rather than South Asians in general, was another of the proposed moderators. There was a significant interaction effect between participants’ perceptions of Neela’s typicality to South Asian physician by condition \(F(2, 215) = 3.43, p = .03\) in how quickly participants associated the attribute “good-natured” with one of the two pictures of South Asian female physicians; however the effect disappeared when the analysis was run again after excluding the data from the participants in the control condition \(F(1, 145) = .32, p = .57\] suggesting the significant interaction was due to the control rather than the experimental condition. Please see table 4 for the beta coefficients.

**Confident.** A one factor ANCOVA (Condition: positive, negative, control) revealed a main effect of transportation on participants reaction-time in associating the attribute “confident” with one of the two pictures of South Asian female physician \(F(1, 211) = 5.37, p = .02\]. Transportation \((M = 4.22, SD = .95)\) predicted reaction-time on the attribute “confidence” \((M = 1.11; SD = .74)\) after controlling for the participant’s baseline reaction-time \([b = .12, t(215) = 1.97, p = .05]\).

**Caring.** A One factor ANCOVA (Condition: positive, negative, control) revealed a main effect of transportation on participants’ reaction-time in associating the attribute “caring” with one of the two pictures of South Asian female physicians \(F(1, 214) = 4.35, p = .04\]. Transportation \((M = 4.22, SD = .96)\) predicted how quickly participants
associated the attribute “caring” \( (M = .93; SD = .72) \) with one South Asian female physician picture after controlling for their baseline reaction-time. The more transported the participants got, the quicker they were in perceiving one of the two South Asian female physicians as “caring” \( [b = .09, t(218) = 1.48, p = .14] \).

*Skillful.* A one factor ANCOVA (condition: positive, negative, control) revealed the interaction effect between participants perceptions of the protagonist’s typicality to South Asian physicians by condition in their accessibility of the attribute “skillful” \( [F(1, 210) = 3.42, p = .03] \) for one of the two pictures of South Asian female physicians. The beta weights (please see table 4) by condition suggested that the significant effect was due to the control condition. The effect disappeared when the analysis was run again after excluding the data from the participants in the control condition \( [F(1, 141) = .006, p = .94] \).

*Nice.* The protagonist’s typicality to other South Asian physicians moderated the effect of condition on participants’ response-time in associating the attribute “nice” with one of the two pictures of South Asian female physicians \( [F(2, 206) = 3.33, p = .04] \). The significant effect persisted when the analysis was run again after excluding the data from the participants in the control condition \( [F(1, 138) = 4.14, p = .04] \). When participants perceived *Neela* as typical of other South Asian physicians, they were faster to associate the attribute “nice” with one of the two pictures of South Asian female physicians in the positively valenced condition \( [M = 1.33, SD = .46; b = .05, t(68) = .51, p = .61] \) but they were slower to categorize the target as “nice” in the negatively valenced condition \( [M = 1.25, SD = .58; b = -.27, t(69) = -2.39, p = .02] \).
Figure 4. Moderating effect of protagonist’s group typicality to other South Asian physicians by condition on participants’ accessibility of the attribute “nice”.

Note: Positive condition refers to exposure to the positively valenced portrayal. Negative condition refers to exposure to the negatively valenced portrayal. The dependent measure is transformed reaction-time for the attribute “nice”. The interaction was significant for only one of the two pictures of South Asians female physicians. A higher number indicates a faster response time for associating positive attribute with the attitude object. Reaction-times are corrected for baseline response speed on the task measuring attribute accessibility.
All the findings were checked with European American/non European American as a factor in the model and a moderator, and all reported effects remained significant.

Table 4

*Beta Coefficients by Condition*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Moderator Variable</th>
<th>Positive</th>
<th>Negative</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmth</td>
<td>Identification</td>
<td>-.02</td>
<td>.20</td>
<td>-.24</td>
</tr>
<tr>
<td>Good-natured</td>
<td>Identification</td>
<td>.25</td>
<td>.09</td>
<td>-.19</td>
</tr>
<tr>
<td></td>
<td>Typicality South Asian</td>
<td>.12</td>
<td>.14</td>
<td>-.29</td>
</tr>
<tr>
<td>Skillful</td>
<td>Typicality South Asian Physician</td>
<td>.21</td>
<td>.14</td>
<td>-.16</td>
</tr>
<tr>
<td></td>
<td>Typicality South Asian Physician</td>
<td>-.19</td>
<td>-.20</td>
<td>.15</td>
</tr>
</tbody>
</table>

RQ1 sought to answer if participants’ explicit judgment of the protagonist as measured by the SCM items (competence, capability, confidence, skillful, warmth, good-natured, sincere, and friendly) lead to attitude generalization towards the out-group members on similar attributes. To answer this research question, participants’ scores on *Neela’s* explicit judgments on various attributes were added as predictors in the regression model. Baseline reaction-time on the attribute accessibility task was added as a
control variable. None of the participants' explicit evaluations of the protagonist, generalized to the other members of the same out-group.
CHAPTER 8

STUDY 2 DISCUSSION

Replication of Deliberative Results

The influence of message portrayal on message recipients’ out-group perceptions were examined in this study. With respect to stimuli and design, the study was a replication of study 1. However, measures adopted in the study were substantially different from those used in study 1. Whereas the first study made use of explicit deliberative measures only, in the second study, non-deliberative reaction-time measures were also employed along with some additional explicit measures. In the context of this study population, all the results are discussed considering European Americans as majority group.

In study 1, different relationships were hypothesized between media engagement variables such as identification and transportation, and outcome variables such as attitudes towards South Asians and South Asians physicians. However, non-mediated contact overwhelmingly predicted the relationships for this population. Based on the findings, it was hypothesized in study 2 that prior contact would predict attitudes towards the out-group in this population that reports significant levels of intergroup contact with South Asians. Analyses were also run to see if the findings of the study 1 were replicated. That is, the analyses were run to make sure if the pattern of results from study 1, the
hypothesized relationships between the variables measuring media engagement and out-
group attitudes, held in study 2 as well.

For both study 1 and study 2, findings were essentially the same with respect to all the hypothesized relationships involving deliberative dependent variables. Neither media exposure nor narrative engagement variables had any influence on message recipients’ attitudes, as measured through deliberative measures, in both study 1 and study 2. However, as predicted, quality of prior contact explained the attitudes towards South Asians in general, and South Asian physicians in particular. As expected, prior contact also predicted intergroup anxiety negatively. This is hardly surprising based on the results of the study 1 and composition of the study sample. The participants in this study, like before, reported high levels of contact with South Asians ($M = 4.78; SD = 1.28$; measured on a 7-point scale).

The results demonstrating the significance of prior contact echo the findings of study 1 and demonstrate the importance of non-mediated interpersonal contact between the people of different cultures. Also evident is the relative unimportance of media portrayals in the wake of significant non-mediated intergroup contact. Indeed parasocial interaction with gay characters in Schiappa et al.’s (2005) research influenced the attitudes more strongly for the participants who reported low levels of non-mediated contact with the out-group. When individuals have non-mediated sources of information, the media’s role as an information provider is diminished as people are not as dependent upon it (Ball-Rokeach & DeFleur, 1976).
The results on the deliberative measures employed in both study 1 and study 2 suggested, then, that the South Asian out-group is perceived to have positive attributes and is relatively familiar to the participants. The valence of the media portrayal and narrative engagement don’t influence participants’ attitude as measured through deliberative measures.

However, it was also theorized that the influence of engagement with a televised portrayal might influence attitudes about out-group members at an automatic level. It may be, for example, that prior contact would determine deliberative responses, but the effects of the portrayal might operate at levels less accessible to conscious deliberation (Fazio, Sonbonmatsu, Powell, Kardes, 1986; Fazio, 2007; Jones & Fazio, 2010). Therefore, non-deliberative reaction-time measures of attitude and attribute accessibility (Fazio & Olson, 2003; Olson & Fazio, 2008) were included. Moreover, because this population reports high levels of intergroup contact, non-obtrusive reaction-time measures had the potential to reduce social desirability bias in responses (Fazio & Olson, 2003; Nosek, Greenwal, & Banaji, 2007).

**Reaction-time results**

Two kinds of reaction-time measures were employed in this study. The one measured participants’ accessibility of attitudes, based on the narrative portrayal they were exposed to, towards South Asians by asking them to make evaluative judgments on pictures of physicians of different ethnicities. The other reaction-time task measured how quickly participants associated certain characteristic attributes with South Asian
physicians and if the narrative portrayal they saw influenced the reaction-time on making those judgments.

The use of reaction-time measures to assess attitudes is not new. However, employing reaction-time measures to assess the relationship between engagement with the narrative portrayals and intergroup attitudes has not yet been explored in the context of media and health. This study fills this gap in the literature by examining the influence of engagement with narrative content on participants’ accessibility of attitudes and attributes towards international physicians of South Asian ethnicity.

The results on attitude accessibility were encouraging and in line with the hypothesized relationship. In study 2, it was hypothesized that participants’ identification with the protagonist Neela would moderate the effect of condition on participants’ accessibility of attitudes towards South Asian physicians accordingly. Participants in the positively valenced condition who reported higher levels of identification were faster in expressing favorable positive attitudes towards South Asian female physicians and the opposite was true for the participants in the negatively valenced condition. This suggests that engagement with narrative content has an effect on accessibility of attitudes. The past research suggests that direct contact with the attitude object influences accessibility of attitudes when the contact with the attitude object is made at a later time (Fazio & Zanna, 1981). In the case of narrative, the direct contact could be especially impactful in influencing attitude accessibility due to the evoked affect in the message recipients (Chung, Slater, & Comello, 2011). In other words, engagement with the narrative would make the experience affective that could influence perceptions of direct experience felt
with the narrative. This direct experience could then make some attitude more accessible than others when the message recipient comes in contact with an object similar to the one in the narrative (Oliver, Jackson, Moses, & Dangerfield, 2004) which could have implications for behavior. The implications of this finding for theory development in narrative persuasion are discussed later in this section.

Reaction-time measures were also employed to understand if media portrayals influence accessibility of attributes people associate with South Asian female physicians. The results on these measures were inconsistent. It was clear that participants interpreted the faces differently when they were asked to judge the pictures on the attributes but not when they were asked to make attitude accessibility (like-dislike) assessments on the same pictures. Therefore the findings regarding attribute accessibility were variable and less cleanly interpretable than the findings on attitude accessibility. Still a few relationships emerged which should be mentioned.

For one of the two pictures, to the extent that participants identified with the protagonist, those in the positively valenced condition were quicker to associate the attribute “capable” with South Asian female physicians in general but those in the negatively valenced condition were slower. Similarly, for one of the two pictures of South Asian female physicians, the participants in the positively valenced condition were quicker to categorize her as “nice” if they saw her as a typical representative of South Asians physicians. However, those in the negatively valenced condition who perceived her to be a typical representative of South Asians physicians were slower to categorize
her as “nice”. In other words, there were some findings consistent with hypotheses but they were not robust across both faces shown.

The question that is warranted is the explanation for finding different effects when the same pictures were used on the reaction-time task measuring attitude and attribute accessibility. This question is discussed in detail in the following section outlining the limitations of the study.

Limitations

On one hand, the findings of these studies are encouraging and suggest that engagement with narratives encountered in media may influence attitude in such a manner that they might become automatically available when a similar attitude object is encountered at a later time. At the same time, more research is needed because the significant effects were found consistently for accessibility of attitudes but inconsistently for accessibility of attributes. Therefore, the findings regarding attribute accessibility should be viewed as tentative because the levels of acceptable reliability were not achieved between different faces of South Asian female physicians. In other words, participants perceived the two pictures differently as demonstrated by different findings and low reliability. Therefore findings should be considered suggestive and future research is needed to extend and replicate the study to see if the patterns remain similar.

Although the findings for attribute accessibility were significant for only one of the two faces that the participants saw while completing the reaction-time task to measure the attribute accessibility, the affective evaluations of the faces, as assessed by the
reaction-time task measuring attitude accessibility, yielded reliable results across both the faces.

One of the reasons for finding different effects when participants completed the attitude versus the attribute accessibility task could have to do with different interpretation of the faces by the participants when they were asked to judge them on more specific characteristics. Attitudes are universal affective evaluations of the object and are conceptualized as the strength between the attitude object and its evaluation (Fazio et al., 1986; Fazio, 1993). Attitude accessibility refers to how easily an attitude is accessed from memory (Roskos-Ewoldsen, 2007). When the participants were asked to draw conclusions about (like/dislike) target faces, they did not have to search for specific cues regarding the target faces and consequently engaged in a relatively less taxing cognitive activity.

Attribute (also referred to as construct) accessibility however refers to the specific constructs that become available in our mind with respect to the target objects (Bruner, 1957; Higgins & King, 1981; Higgins, Kind, & Mavin, 1982; Roskos-Ewoldsen, 1997, Shrum, 1996). This is very similar to exemplar accessibility which refers to (in the context of the research on media portrayals) media acquired constructs that aid an individual in drawing social judgments and in influencing perceptions regarding the target group in general (Busselle, 2001; Shrum, 1996, 1999).

As suggested, the attribute accessibility task is relatively more cognitively engaging than the attitude accessibility task as people have to perform a more thorough cognitive search to access a particular attribute and associate it with the particular face.
Obviously, such cognitive searching involves more effort. For example, if a participant exposed to a negatively valenced portrayal featuring a South Asian protagonist is asked to indicate if the attribute “confident” is associated with the given picture of a South Asian female physician, this participant has to first perform a cognitive search to ensure that the given attribute (“confident”) regarding the target object matches with the portrayal and in the process, different other attributes deemed fit with the attitude object might be evoked. These “other” attributes that are evoked in the process could differ for different target faces. Perhaps this could be one of the reasons why participants perceived the target faces differently when they were instructed to make judgments about attributes but similarly when asked to make relatively straightforward affective evaluation. Of course this is tentative and future studies would have to be conducted to explore the reliability of attribute accessibility in person perception research, or ways idiosyncratic facial cues are used in such judgments.

There were some other limitations of the study that should be mentioned. Due to an experimental error, one of the attributes on the Stereotype Content Model (SCM; Cuddy et al., 2009) “sincere” was left out on the attribute accessibility task. However none of the judgments made about the protagonist using the attributes on SCM, predicted participants reaction-time in assessing attributes of other South Asians female physicians. Therefore although avoidance of error would have been the best situation, the deletion of one of the eight SCM attributes is not a cause for major concern.

One of the items on motivation to reduce prejudice scale (Dunton & Fazio, 1997) “I think it is important to speak one’s mind rather than to worry about offending
someone” was also left out due to an error, but the overall reliability on the measure was acceptable ($\alpha = .69$). Furthermore, participants did not differ in their motivations to reduce prejudice across the three experimental conditions and hence the measure was not included as a covariate in the analyses.

There were some other limitations of this study. Like study 1, the participants in study 2 were also students at The Ohio State University and the majority of the students reported having some contact with South Asians. Therefore the sample was familiar with the out-group South Asians and had relatively positive preexisting attitudes towards this group ($M = 6.38, SD = 1.58$). Therefore the effect of manipulation, if any, were perhaps further weakened due to the study sample. As noted in study 1, students from India constitute a significant proportion of all the international students enrolled at The Ohio State University (OIA, 2010). Therefore levels of intergroup contact in this population may also have contributed to the findings of the study. Therefore the results may be different if the study is replicated in a different population with relatively lower levels of intergroup contact, resulting in greater dependence on information from the media (Ball-Rokeach & DeFleur, 1976).

Another limitation of the study is the use of a single protagonist and a single episode of the show *ER*. Indeed Shrum (1996) notes that the accessibility of constructs (attributes) differ between heavy versus light viewers of media. Therefore a different stimulus, protagonist, or sample might generate different results.

**Implications**

*Theoretical*
A theoretical contribution of this study lies in bridging the gap between the research on media engagement and attitude accessibility specifically in the context of health. Media engagement is conceptualized in this study as levels of transportation and identification experienced during a narrative exposure. Identification with the protagonist in the narrative assumes taking on the role of the narrative character (Cohen, 2002) and transportation presumes that the message recipient get so engrossed in the narrative that the “real” world is left behind and the message recipient is “transported” into the fictional world of the narrative (Green & Brock, 2000, 2002). Experiencing both identification and transportation implies the subjective experience of direct contact with the objects in the narrative which could be also be understood as the affect evoked in the narrative which may make some experiences feel more realistic. Identification, in particular, suggests vicarious direct contact, or parasocial contact as it is called by Schiappa et al. (2005). Recent research suggests that aroused affect in particular could influence message recipients’ out-group perceptions (Chung, Slater, & Comello, 2011). Identification with the protagonist may arouse emotional feelings due to vicarious direct contact with the characters in the narrative, that may in turn determine the message recipient’s out-group attitudes.

Therefore, attitudes that are portrayed in the narrative world should be accessible more quickly to the individual experiencing identification because previous research has demonstrated that the direct contact with the attitude object makes those attitudes more easily available (Fazio & Zanna, 1981) due to affective experience provided by such messages (Chung et al., 2011). This finding supports the argument that identification
with a fictional character is indeed analogous to actual contact. In so doing, this finding also suggests a possible psychological mechanism for narrative effects on perceptions of out-group members.

As discussed at length in the limitation section, the findings regarding attribute accessibility are suggestive at best. No conclusion can be drawn regarding attribute accessibility pending the findings of future research. However, it does seem that attitude rather than attribute accessibility is a more fruitful direction to explore in research on narrative persuasion.

It appears, given these results, that reaction-time measures help in assessing people’s attitudes that they otherwise may not want to express explicitly, or at least effects on attitudes of which they might not be consciously aware. Therefore these measures have been helpful in gauging the attitude towards minority groups that have historically been discriminated against (Eno & Ewoldsen, 2010). This study extends such work by examining people’s perceptions, as influenced by media, towards a minority group that is normally considered a “model minority”, which is admired on some aspects such as in their levels of competence, but disliked on other aspects such as in their levels of warmth (Cuddy et al., 2009; Lee & Fiske, 2006).

The protagonist’s typicality to other South Asians in general and South Asian physicians in particular were proposed as other moderators of valence on accessibility of attitude and attributes. The results of this study suggest, albeit tentatively, that specificity of group typicality may matter. When participants saw the protagonist as a typical representative of South Asians in general ($M = 4.17, SD = 1.28$) that did not influence
accessibility of attitude or attributes. However, when she was seen as a typical representative of South Asian physicians ($M = 4.3, SD = 1.34$) there was some effect on attribute accessibility by condition. When participants perceived the protagonist as a typical representative of a South Asian physician, they were quicker to categorize one of the two pictures of South Asian female physicians as “nice” and “capable” in the positively valenced condition but were slower in categorization in the negatively valenced condition. This suggests that future studies on the issue should include both more general, and role specific measures of group representativeness.

The accessibility of attitudes are important to understand in the context of medically focused narratives in particular because as demonstrated, narratives make some attitude more accessible (Fazio & Zanna, 1981) and attitudes that are more accessible guide behavior (Fazio & Williams, 1986). This can have important implications in the context of patient-provider relationship, discussed next.

**Substantive Implications**

Almost one-fourth of the currently practicing physicians in the US are considered international medical graduates (IMGs) and most of them are involved in providing direct care to the patients (AMA, 2010). Considering that a large proportion of international physicians are from South Asian countries such as India, Pakistan, Sri Lanka, and Bangladesh, (AMA, 2010) the chances of people coming across physicians from these countries are quite high.

Therefore, understanding the influence of media messages featuring South Asians and South Asian physicians is imperative as attitudes influenced through media
portrayals might become accessible and might drive communication behavior in a medical interaction.

If mediated messages set expectations that are stereotypic in nature such as people should not expect warmth from this minority group, that can lead to potential problems in a medical interaction where warmth and other affective characteristics are valued and considered one of the keys to establishing a cordial relationship between a physician and their patients (Street, Gordon & Haidet, 2007). These portrayals could be especially problematic for the message recipients in rural areas where the levels of personal intercultural contact with South Asians may be low but the levels of professional intercultural contact with the out-group may be high. IMG physicians usually constitute a higher percentage of physicians in rural underserved areas as compared to US medical graduates (Baer, Ricketts, Conrad, Mick, 1998). If viewers of medical shows in the rural community encounter valenced portrayals of South Asian physicians in popular narrative programs on television, expectations based on the narrative may influence medical interaction. As the findings of the study suggest, narrative may influence attitude at an automatic level both positively and negatively. These attitudes may become available during a medical visit and might influence the interaction.

Functional value of attitudes needs to be mentioned in the context of the current research. Attitudes exist because they serve a purpose and have been instrumental in guiding people (Fazio, Herr, & Powell, 1983; Roskos-Ewoldsen, 1997). Although chronically accessible attitudes would be more functional in nature, attitudes that are made temporarily accessible can also be functional in nature (Roskos-Ewoldsen, 1997).
In the context of the current research, if people form an attitude towards international physicians that attitude could serve a function by guiding them during a medical interaction. What this study did not assess and future research would benefit by testing is the influence of identification with patients on message recipients attitudes towards the out-group. The functional nature of attitudes could be especially relevant when participants identify with patients rather than physicians as identification with a patient may make certain aspects more salient and emotionally arousing. Furthermore, because almost everyone may have experienced being a patient at some point or could foresee themselves as being one in future, the accessibility of attitudes could be stronger due to the function that those attitudes may serve, that may become more pronounced during the process of identification with a patient character in the narrative.

However because of the inconsistent results for accessibility of attributes, unless the research is replicated and similar findings are obtained, it would be unwise to draw conclusions with confidence regarding attribute accessibility. However, conclusions can be drawn more confidently that narratives may be influencing attitude accessibility.

The findings of this study could also have implications for people of different ethnicities working in social roles other than physicians. For example, many college and universities in the U.S. employ educators from countries all across the world. People of diverse background are a common site in today’s business community. It is no surprise then that the U.S. is considered a “melting pot” because people from all around the world call it home. Therefore it is important to understand the implications of these findings in contexts other than medicine as the findings of this study suggest the power of media
portrayals in influencing message recipients at a level below the conscious awareness which may subsequently influence behavior when a relevant context and person is encountered.

Future Research

Though the findings regarding the accessibility of attribute were inconsistent, the findings regarding attitude accessibility were more promising. Future research in the area should replicate the research to make sure the accessibility of attributes demonstrate the same random pattern before ruling out the influence of narrative engagement on attribute accessibility involving minority characters. Also important would be to understand why exactly the differences are obtained between participants accessibility of attitudes versus attributes, even when the same attitude object is being used.

One of the immediate questions that the findings of the study raise is the extent of attitude generalization. The target object used in the study was a South Asian female physician. If participants were mentally categorizing the protagonist as a female, it would be likely that the attitude would not generalize to male South Asians physicians. However if the categorization was occurring in racial terms, the chances are the attitudes will be generalized to the other members of that racial category regardless of gender—or, perhaps, categorizations of out-group members are distinguished by gender, something that the future research needs to explore.

Perhaps repeating the study with a target population that has low levels of interpersonal contact with the out-group, unlike the population in this study, might yield results on deliberative measures. The sample in this study was college-going adults who
reported high levels of positive contact with the out-group and for whom the issues of health were not that salient. The findings might be very different if the research is carried out with a population that has low levels of out-group contact or for whom health-related concerns are salient. On the same lines, future research also needs to investigate the influence on behavior during the medical interaction, if any, of the favorably accessible attitude towards the out-group.

Repeating the study with an out-group that is not regarded as positively as South Asians, may also yield some interesting results and would add to the validity and reliability of the measure if the similar pattern of results is obtained.

Finally, as suggested by Shrum (2009), the accessibility of attributes/construct should work differently for heavy versus light viewers of the genre. Therefore, repeating the study with a population that is a high consumer of this genre of programming might yield different results in terms of attitude and attribute accessibility.

Conclusion

Despite potential limitations of the study, the findings are encouraging because even though the participants reported high levels of prior contact with the out-group, and only experienced the narrative exposure once the valenced portrayals did activate the attitude automatically, specifically for those who identified with the protagonist. In the area of patient-provider communication, the favorable (or unfavorable) accessible attitude could mean enhanced affect towards the provider which may influence the interaction and subsequent health behavior positively or negatively. With respect to theory, these results support arguments for the experience of fictional characters as comparable to
direct experience (Schiappa et al., 2005) and provide a psychological mechanism to help explain identification effects. More provocatively, these results suggest that media exposures to exemplars of minorities—even minorities generally viewed favorably—may influence accessibility of positive or negative attitudes about such minorities, in the absence of effects on deliberative measures. This pattern suggests, disturbingly, that effects of such programs may be below the threshold of conscious awareness for viewers.
REFERENCES


Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: warmth and competenceA model of (often mixed) stereotype content:


Green, M. C., & Brock, T. C. (2002). In the mind's eye: Transportation-imagery model of narrative persuasion. In M. C. Green, J. J. Strange, & T. C. Brock (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 315-341). Mahwah, NJ: Lawrence Erlbaum Associates.


Personality and Social psychology, 68(4), 565-579.


APPENDIX A: STUDY 1 MEASURE
Manipulation: Exposure to the Clip

Media Use Variables

Please rate the episode of *ER* you just watched by circling a number on the following scales:

<table>
<thead>
<tr>
<th>Not enjoyable</th>
<th>1…..2…..3…..4…..5…..6…..7</th>
<th>Enjoyable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not entertaining</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Entertaining</td>
</tr>
<tr>
<td>Not interesting</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Interesting</td>
</tr>
<tr>
<td>Not likeable</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Likable</td>
</tr>
</tbody>
</table>

Before today, had you ever seen this episode of *ER*?

- Yes
- No

Over the last year, how often have you watched *ER*?

<table>
<thead>
<tr>
<th>Never watched</th>
<th>1…..2…..3…..4…..5…..6…..7</th>
<th>Watched all the time</th>
</tr>
</thead>
</table>

How familiar are you with *ER*?

<table>
<thead>
<tr>
<th>Not at all familiar</th>
<th>1…..2…..3…..4…..5…..6…..7</th>
<th>Very familiar</th>
</tr>
</thead>
</table>
Please think about the video clip you just watched and answer the following questions.

**Transportation (Green & Brock, 2000)**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>While I was watching the show, I could easily picture the events taking place.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>While I was watching the show, activity going on in the room around me was on my mind.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I could picture myself in the scene of the events portrayed in the show.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I was mentally involved in the story while watching.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>After the show ended, I found it easy to put it out of my mind.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I wanted to learn how the story ended.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>The show affected me emotionally.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I found myself thinking of ways the story could have turned out differently.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I found my mind wandering while watching the show.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>The events in the show are relevant to my everyday life.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
</tbody>
</table>
Perceived Realism (Rubin, 1981)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dialogue in the show was realistic and believable.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>People in this show are like people you or I might actually know.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>Events that actually have happened or could happen are discussed in this show.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>This program shows that people have both good and bad sides.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>This show deals with the kind of very difficult choices people in real life have to make.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
</tbody>
</table>

Identification (Cohen, 2001)

We are interested in learning people’s perceptions of different characters on the show.

The character you have been assigned is Dr. Neela Rasgotra. Please answer the following questions keeping in mind the character Dr. Neela Rasgotra.
| I was able to understand the events in the program in a manner similar to that in which Neela understood them. | 1…..2…..3…..4…..5…..6…..7 |
| I think I have a good understanding of Neela | 1…..2…..3…..4…..5…..6…..7 |
| I tend to understand the reasons why Neela did what she did. | 1…..2…..3…..4…..5…..6…..7 |
| While viewing the show, I could feel the emotions Neela portrayed. | 1…..2…..3…..4…..5…..6…..7 |
| During viewing, I felt I could really get inside Neela’s head. | 1…..2…..3…..4…..5…..6…..7 |
| At key moments in the show, I felt I knew exactly what Neela was going through. | 1…..2…..3…..4…..5…..6…..7 |
| While viewing, I wanted Neela to succeed in achieving her goals. | 1…..2…..3…..4…..5…..6…..7 |
| When Neela succeeded I felt joy, but when she failed I was sad. | 1…..2…..3…..4…..5…..6…..7 |
| When I watched Neela on the program, I imagined myself doing the same thing she was doing. | 1…..2…..3…..4…..5…..6…..7 |
| When I watched Neela, I felt like I was really one of | 1…..2…..3…..4…..5…..6…..7 |
the people taking part in the drama.

Group Typicality (Harwood, Hewstone, Paolini, & Voci, 2005)

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>How representative do you think Dr. Neela Rasgotra is of South Asians in the US?</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>How representative do you think Dr. Neela Rasgotra is of South Asian doctors in the US?</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>How similar Dr. Neela Rasgotra is to other South Asians in the US?</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>How similar Dr. Neela Rasgotra is to other South Asian doctors in the US?</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
</tbody>
</table>

Intergroup Anxiety (Stephan & Stephan, 1985)

Please think of how you would feel mixing socially with complete strangers who are [South Asians] in the US. (1 = not at all, 2 = a little, 3 = some, 4 = quite, 5 = very)

- Awkward
- Relaxed
- Comfortable
- At ease
• Anxious

Attitudes towards Outgroup (Wright et al., 1997)

Continuing to think about [South Asians/South Asian doctors] in the US, please check a space between each of the adjectives to indicate how you would describe each group in general.

<table>
<thead>
<tr>
<th>Negative</th>
<th>1.....2.....3.....4.....5.....6.....7</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Warm</td>
</tr>
<tr>
<td>Suspicious</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Trusting</td>
</tr>
<tr>
<td>Hostile</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Friendly</td>
</tr>
<tr>
<td>Contempt</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Respect</td>
</tr>
<tr>
<td>Disgust</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Admiration</td>
</tr>
</tbody>
</table>

Scenario

Please imagine a hypothetical situation. Imagine that you are not feeling well and decide to get yourself checked out. When you arrive at the clinic you are assigned to a South Asian doctor. Assume that the doctor has accented but understandable English.

How comfortable would you feel with this doctor?

| Not at all comfortable | 1.....2.....3.....4.....5.....6.....7 | Extremely comfortable |

How satisfied would you feel with this doctor?

| Not at all satisfied | 1.....2.....3.....4.....5.....6.....7 | Extremely satisfied |
Now imagine that you are assigned to an Asian (e.g. Japanese, Chinese) doctor. Assume that the doctor has accented but understandable English.

How comfortable would you feel with this doctor?

| Not at all comfortable | 1...2...3...4...5...6...7 | Extremely comfortable |

How satisfied would you feel with this doctor?

| Not at all satisfied | 1...2...3...4...5...6...7 | Extremely satisfied |

Now imagine that you are assigned to a North American Caucasian doctor.

How comfortable would you feel with this doctor?

| Not at all comfortable | 1...2...3...4...5...6...7 | Extremely comfortable |

How satisfied would you feel with this doctor?

| Not at all satisfied | 1...2...3...4...5...6...7 | Extremely satisfied |

Imagine the same scenario but now you are assigned to an East European doctor. Again assume that the doctor has accented but understandable English.

How comfortable would you feel with this doctor?

| Not at all comfortable | 1...2...3...4...5...6...7 | Extremely comfortable |

How satisfied would you feel with this doctor?

| Not at all satisfied | 1...2...3...4...5...6...7 | Extremely satisfied |

Controls

Contact with doctors and minority (non-White) doctors

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How many of your friends or immediate family members are medical doctors? ______

On an average, how often do you go to see some sort of doctor?

- Once a week.
- Once a month.
- Once every three months.
- Once every six months.
- Once a year.
- Less than once a year

On an average, how often do you go to see some sort of doctor who is of South Asian descent?

- Once a week.
- Once a month.
- Once every three months.
- Once every six months.
- Once a year.
- Less than once a year
- Never

Contact with South Asians

On average, how often do you interact with a person of South Asian descent?

- Everyday
- Twice a week
- Once a week
Once every two weeks

Once a month

Once every three months

Once every six months

Once a year

Less than once a year

In general, how pleasant has your contact with South Asians been? (1 = unpleasant, 7 = pleasant, 8 = I’ve never had any contact with South Asian people)

In general, how friendly has your contact with South Asians been? (1 = not friendly, 7 = very friendly, 8 = I’ve never had any contact with South Asian people)

Think of the South Asian person with whom you have had the closest relationship and answer the following questions. If you don’t know any South Asian people, check “I don’t know any South Asians.”

How close do you feel to this person? (1 = not close, 7 = very close)

How much do you value your relationship with this person? (1 = not at all, 7 = extremely)

What was the quality of your relationship? (1 = low, 7 = high)

Do you value the time you have spent with this person? (1 = not at all, 7 = extremely)

Manipulation Check

The clip you just watched featured a medical doctor. How competent was she in her interactions with her patients. (1 = completely incompetent, 4 = neutral, 7 = completely competent)
What is the ethnicity of the doctor in the clip?

- White
- Hispanic or Latino
- African American
- South Asian
- Asian or Pacific Islander
- American Indian
- Other: _____

**Demographics**

Please tell us your:

Sex: (Male/Female)

Age:

Ethnic and/or racial background: (check all that apply)

- White
- Black/African American
- Asian American/Pacific Islander
- South Asian
- Latino/Hispanic
- American Indian/Alaska Native
- Other – Please Specify: _______________________

You are currently enrolled in what year at OSU?

- First year undergraduate
• Second year undergraduate
• Third year undergraduate
• Fourth year undergraduate
• Fifth year or greater undergraduate
• Graduate student

Please indicate your major area of study here at OSU:

• Communication
• Pre-med
• Pre-law
• Other
APPENDIX B: STUDY 2 DELIBERATIVE MEASURE
Manipulation: Exposure to the Clip

Media Use Variables

Please rate the episode of *ER* you just watched by circling a number on the following scales:

<table>
<thead>
<tr>
<th>Not enjoyable</th>
<th>1…..2…..3…..4…..5…..6…..7</th>
<th>Enjoyable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not entertaining</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Entertaining</td>
</tr>
<tr>
<td>Not interesting</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Interesting</td>
</tr>
<tr>
<td>Not likeable</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td>Likable</td>
</tr>
</tbody>
</table>

Before today, had you ever seen this episode of *ER*?

- Yes
- No

Over the last year, how often have you watched *ER*?

| Never watched | 1…..2…..3…..4…..5…..6…..7 | Watched all the time |

How familiar are you with *ER*?

| Not at all familiar | 1…..2…..3…..4…..5…..6…..7 | Very familiar |

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### Stereotype Content Model (Cuddy et al., 2009)

<table>
<thead>
<tr>
<th>Stereotype</th>
<th>Scale 0–10</th>
<th>Extremity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all competent</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely competent</td>
</tr>
<tr>
<td>Not at all confident</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely confident</td>
</tr>
<tr>
<td>Not at all capable</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely capable</td>
</tr>
<tr>
<td>Not at all skillful</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely skillful</td>
</tr>
<tr>
<td>Not at all friendly</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely friendly</td>
</tr>
<tr>
<td>Not at all warm</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely warm</td>
</tr>
<tr>
<td>Not at all good-natured</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely good-natured</td>
</tr>
<tr>
<td>Not at all sincere</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td>Extremely sincere</td>
</tr>
</tbody>
</table>

### Transportation (Green & Brock, 2000)

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>While I was watching the show, I could easily picture the events taking place.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>While I was watching the show, activity going on in the room around me was on my mind.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
<tr>
<td>I could picture myself in the scene of the events portrayed in the show.</td>
<td>1…..2…..3…..4…..5…..6…..7</td>
<td></td>
</tr>
</tbody>
</table>
I was mentally involved in the story while watching. & 1.....2.....3.....4.....5.....6.....7  
After the show ended, I found it easy to put it out of my mind. & 1.....2.....3.....4.....5.....6.....7  
I wanted to learn how the story ended. & 1.....2.....3.....4.....5.....6.....7  
The show affected me emotionally. & 1.....2.....3.....4.....5.....6.....7  
I found myself thinking of ways the story could have turned out differently. & 1.....2.....3.....4.....5.....6.....7  
I found my mind wandering while watching the show. & 1.....2.....3.....4.....5.....6.....7  
The events in the show are relevant to my everyday life. & 1.....2.....3.....4.....5.....6.....7  

Perceived Realism (Rubin, 1981)

<table>
<thead>
<tr>
<th>Statement</th>
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<th>Strongly Disagree</th>
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<td>The dialogue in the show was realistic and believable.</td>
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</tr>
<tr>
<td>People in this show are like people you or I might actually know.</td>
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<td></td>
</tr>
<tr>
<td>Events that actually have happened or could happen are discussed in this show.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>This program shows that people have both good and</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
</tbody>
</table>
bad sides.

This show deals with the kind of very difficult choices people in real life have to make.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Neither Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspired</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enthusiastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afraid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distressed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PANAS (shorter 10 item version, Mackinnon et al., 1999)

Please think back to the video you watched earlier in the session. How did that video made you feel. Read each item and then mark the appropriate answer in the space next to that word.
How often have you seen the character Dr. Neela Rasgotra on a previous episode of the show ER?

<table>
<thead>
<tr>
<th>Never</th>
<th>1.....2.....3.....4.....5.....6.....7</th>
<th>Very often</th>
</tr>
</thead>
</table>

Identification (Cohen, 2001)

We are interested in learning people’s perceptions of different characters on the show.

The character you have been assigned is Dr. Neela Rasgotra. Please answer the following questions keeping in mind the character Dr. Neela Rasgotra.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to understand the events in the program in a manner similar to that in which Neela understood them.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I think I have a good understanding of Neela</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>I tend to understand the reasons why Neela did what she did.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>While viewing the show, I could feel the emotions Neela portrayed.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>During viewing, I felt I could really get inside Neela’s head.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
<tr>
<td>At key moments in the show, I felt I knew exactly what Neela was going through.</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td></td>
</tr>
</tbody>
</table>
While viewing, I wanted Neela to succeed in achieving her goals.

When Neela succeeded I felt joy, but when she failed I was sad.

When I watched Neela on the program, I imagined myself doing the same thing she was doing.

When I watched Neela, I felt like I was really one of the people taking part in the drama.

<table>
<thead>
<tr>
<th>Group Typicality (Harwood, Hewstone, Paolini, &amp; Voci, 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>How representative do you think Dr. Neela Rasgotra is of South Asians in the US?</td>
</tr>
<tr>
<td>1.....2.....3.....4.....5.....6.....7</td>
</tr>
<tr>
<td>How representative do you think Dr. Neela Rasgotra is of South Asian doctors in the US?</td>
</tr>
<tr>
<td>1.....2.....3.....4.....5.....6.....7</td>
</tr>
<tr>
<td>How similar Dr. Neela Rasgotra is to other South Asians in the US?</td>
</tr>
<tr>
<td>1.....2.....3.....4.....5.....6.....7</td>
</tr>
<tr>
<td>How similar Dr. Neela Rasgotra is to other South Asian doctors in the US?</td>
</tr>
<tr>
<td>1.....2.....3.....4.....5.....6.....7</td>
</tr>
</tbody>
</table>
### Parasocial Interaction (Rubin & Perse, 1987)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>___ makes me feel comfortable, as if I am with a friend.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I see ___ as a natural, down-to-earth person.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I look forward to watching ___ when her show is on.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>If ___ appeared on another TV program, I would watch that program.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>___ seems to understand the kinds of things I want to know.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>If I saw a story about ___ in a newspaper or magazine, I would read it.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I miss seeing ___ when her show is not on for some reason.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I would like to meet ___ in person.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I feel sorry for ___ when she makes a mistake.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
<tr>
<td>I find ___ to be attractive.</td>
<td>1….2….3….4….5….6….7</td>
<td></td>
</tr>
</tbody>
</table>

### Intergroup Anxiety (Stephan & Stephan, 1985)

151
Please think of how you would feel mixing socially with complete strangers who are South Asians in the US. (1 = not at all, 2 = a little, 3 = some, 4 = quite, 5 = very)

- Awkward
- Relaxed
- Comfortable
- At ease
- Anxious

Attitudes towards Outgroup (Wright et al., 1997)

Continuing to think about South Asians/South Asian doctors in the US, please check a space between each of the adjectives to indicate how you would describe each group in general.

<table>
<thead>
<tr>
<th>Negative</th>
<th>1.....2.....3.....4.....5.....6.....7</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Warm</td>
</tr>
<tr>
<td>Suspicious</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Trusting</td>
</tr>
<tr>
<td>Hostile</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Friendly</td>
</tr>
<tr>
<td>Contempt</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Respect</td>
</tr>
<tr>
<td>Disgust</td>
<td>1.....2.....3.....4.....5.....6.....7</td>
<td>Admiration</td>
</tr>
</tbody>
</table>

Manipulation Check

What is the ethnicity of the doctor in the clip?
- White
- Hispanic or Latino
- African American
- South Asian
- Asian or Pacific Islander
- American Indian
- Other: ____

Motivations to reduce prejudice scale (Dunton & Fazio, 1997)

For each of the following statement, please indicate the extent to which you agree or disagree with the statement according to the scale below.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>In today’s society it is important that one not be perceived as prejudiced in any manner.</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>I always express my thoughts and feelings, regardless of how controversial they might be (R).</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>I get angry with myself when I have a thought or feeling that might be considered prejudiced.</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>If I were participating in a class discussion and a South Asian student expressed an opinion with which I disagreed, I would be</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Rating</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>hesitant to express my own viewpoint.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going through life worrying about whether you might offend someone is</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>just more trouble than it’s worth (R).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It’s important to me that other people not think I am prejudiced.</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>I feel it’s important to behave according to society’s standards.</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>I’m careful not to offend any friends, but I don’t worry about offending</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>people I don’t know or don’t like (R).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think it is important to speak one’s mind rather than to worry about</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>offending someone (R).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It’s never acceptable to express one’s prejudices.</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>I feel guilty when I have a negative thought or feeling about an South</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>Asian person.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When speaking to an South Asian person, it’s important to me that he/she</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
<tr>
<td>not think I’m prejudiced.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It bothers me a great deal when I think I’ve</td>
<td>0…1…2…3…4…5…6…7…8…9…10</td>
<td></td>
</tr>
</tbody>
</table>
offended someone, so I’m always careful to consider other people’s feelings.

If I have a prejudiced thought or feeling, I keep it to myself.

I would never tell jokes that might offend others.

I’m not afraid to tell others what I think, even when I know they disagree with me (R).

If someone who made me uncomfortable sat next to me on a bus, I would not hesitate to move to another seat (R).

Demographics

Please tell us your:

Sex: (Male/Female)

Age:

Ethnic and/or racial background: (check all that apply)

- White
- Black/African American
- Asian American/Pacific Islander
- South Asian
• Latino/Hispanic

• American Indian/Alaska Native

• Other – Please Specify: _______________________

You are currently enrolled in what year at OSU?

• First year undergraduate

• Second year undergraduate

• Third year undergraduate

• Fourth year undergraduate

• Fifth year or greater undergraduate

• Graduate student

Please indicate your major area of study here at OSU:

• Communication

• Pre-med

• Pre-law

• Other
APPENDIX C: REACTION-TIME TASK TO MEASURE ATTITUDE ACCESSIBILITY
Reaction-Time Task to Measure Attitude Accessibility

Instructions

Each of these instructions was presented on separate screens on a computer.

Screen 1. In this task, you will make judgments of a number of items. We are interested in your judgments of these items.

Because the judgments will involve your preferences, there are no correct answers to any of these judgments.

For additional instructions, please press any key to continue.

Screen 2. We are interested in whether you LIKE or DISLIKE various items. For example, if you were presented with the product DIET COKE and you like Diet Coke, you would indicate that you like Diet Coke by pressing the “+” Key.

Please Press the “+” key to continue

[the “/” key with a sticker with an “+” on it]

Screen 3. However, if you do not like Diet Coke or you think Diet Coke is bad, you should press the “-” key.

Please press the “-” key to continue

[The "Z" key with a sticker with a "-" on it]

Screen 4. All this task involves is this simple like/dislike judgment.

For each item you are presented with you should indicate whether you think the item is something you LIKE (press the “+” key) or something you DISLIKE (press the “-” key).

In addition, we are interested in how quickly you can make these judgments. So you
should try to indicate whether you think the item is something you like or dislike as quickly as possible.

But it is also important that you respond as accurately as possible. Please do not go so fast that you make a lot of mistakes.

Please hit any key to continue.

Screen5. In order to respond as quickly as possible, you should place the index finger of your left hand on the “-” key and the index finger of your right hand on the “+” key and keep your fingers on these keys during the entire experiment.

Again, remember that it is important to respond as QUICKLY as possible, but you also need to be as ACCURATE as possible.

Please hit any key to continue.

Screen6. If you have any questions, please ask the experimenter. Otherwise, you are ready to begin the experiment.

When you press any key you will have some practice trials to familiarize you with the “Like” and “DISLIKE” judgment task.

After these practice trials, the experiment will begin.

Please hit any key to continue.

Screen7. There are two things we would like you to remember as you complete this task. First, and above all, be accurate. Don't be in such a hurry to respond that you regret your decision.

Second, while being accurate, try to respond as quickly as possible.
So, you should try to maximize both the speed and accuracy of your responses.

Please hit any key to continue.

*Screen of instructions presented after every block.* To help us better understand your reactions to the photos, please press “+” if you generally feel favorable towards, are pro, like, or think the object is good, and “-“ if you generally feel negative toward, are against, dislike, or think the object is bad. Again, please just give us your first reaction, as quickly as you can.

Press any key to begin the task.

*List of items presented to the participants*

1. Instructions 1
2. Instructions 2
3. Instructions 3
4. Instructions 4
5. Instructions 5
6. Instructions 6
7. Instructions 7
8. Press the 'like' key
9. Press the 'like' key
10. Press the 'like' key
11. Press the 'like' key
12. Press the 'like' key
13. Press the 'like' key
14. Press the 'dislike' key
15. Press the 'dislike' key
16. Press the 'dislike' key
17. Press the 'dislike' key
18. Press the 'dislike' key
19. Press the 'dislike' key

20. Instructions

21. Picture of Asian female physician
22. Picture of Asian male physician
23. Picture of Asian male, non-physician
24. Picture of Asian female non-physician
25. Book bag
26. Puppy

27. Picture of Hispanic male physician
28. Picture of Hispanic female physician
29. Picture of Hispanic male non-physician
30. Picture of Hispanic female non-physician

31. ~Press the 'like' key
32. ~Press the 'dislike' key

33. Instructions

34. Picture of Indian male physician
35. Picture of Caucasian male physician
36. Picture of African American male physician
37. Picture of African American female physician
38. Picture of Indian male non-physician
39. Picture of Caucasian male non-physician
40. Flower
41. Press the 'like' key
42. Press the 'dislike' key
43. Pollution
44. Picture of African American male non-physician
45. Picture of African American female non-physician
46. Instructions
47. Picture of Indian female physician
48. Picture of Indian female physician
49. Picture of Indian female physician
50. Picture of Caucasian female physician
51. Picture of Caucasian female physician
52. Picture of Indian female non-physician
53. Picture of Caucasian female non-physician
54. Picture of Caucasian female non-physician
55. Press the 'like' key
56. Press the 'dislike' key
57. Spider
APPENDIX D: REACTION-TIME TASK TO MEASURE ATTRIBUTE

ACCESSIBILITY
Reaction-Time Task to Measure Attribute Accessibility

Instructions

Each of these instructions was presented on separate screens on a computer.

Screen1. We’d like your quick first impression as to whether the words we’ll be showing you go together or not. Press the “+” button for “yes” and the “-“ button for “no”.

A word will appear on the screen, and will be quickly followed by a second word. When the second word appears, indicate whether the two words go together by pressing “+” button for “yes” and the “-“ button for “no”.

Again, please provide your first reaction as to whether the words go together, as quickly as you can.

Press any key to continue.

Screen2.

In order to become accustomed to the task, we would like you to complete a few practice trials.

The word “blue” will be presented multiple times with various words. First the word “blue” will appear and then a second word will follow. When the second word (after the word “blue”) appears, indicate whether the two words, “blue” and the other word, go together by pressing the “+” key for “yes,” and the “-” key for “no.”
Press any key to begin the practice trial.

*Screen3 (Presented after every block).* You are now ready to begin the task.

Press any key to continue.

*Screen4 (Presented after every block).*

Please imagine a hypothetical situation. Imagine that you are not feeling well and decide to get yourself checked out. Imagine that when you arrive at the ER, you are assigned to a doctor. This doctor’s picture would appear on the next few screens.

Keeping the pictures in mind, in this next task, we request you to indicate whether the picture that will appear onscreen and the word that follows the picture, go together or not. This next task is like the one you just completed but in place of words now you will first be presented with pictures which will be followed by words.

Like last time, if you feel that the picture and the word go together, please press “+” key for “yes,” and if you feel they don’t go together, press the “-” key for “no.”

Press any key to begin.

*List of items presented to the participants*

1. Instructions 1
2. Instructions 2
3. Blue-sky
4. Blue-ocean
5. Blue-jeans
6. Blue-sad
7. Blue-hot
8. Blue-Orange
9. Blue-five
10. Blue-Jay
11. Blue-ride
12. Blue-short
13. Blue-city
14. Instructions 4
15. Instructions 3
16. Picture of Indian female physician-capable
17. Picture of Indian female physician-goodnatured
18. Picture of Indian female physician-warm
19. Picture of Indian female physician-friendly
20. Picture of Indian female physician-skillful
21. Picture of Indian female physician-confident
22. Picture of Indian female physician-competent
23. Picture of Indian female physician-uncaring
24. Picture of Indian female physician-mean
25. Picture of Indian female physician-unpleasant
26. Picture of Caucasian female physician-capable
27. Picture of Caucasian female physician-goodnatured
28. Picture of Caucasian female physician-warm
29. Picture of Caucasian female physician-friendly
30. Picture of Caucasian female physician-skillful
31. Picture of Caucasian female physician-confident
32. Picture of Caucasian female physician-competent
33. Picture of Caucasian female physician-uncaring
34. Picture of Caucasian female physician-mean
35. Picture of Caucasian female physician-unpleasant
36. Laptop-computer
37. Laptop-water
38. Instructions 4
39. Instructions 3
40. Picture of Indian female physician-capable
41. Picture of Indian female physician-goodnatured
42. Picture of Indian female physician-warm
43. Picture of Indian female physician-friendly
44. Picture of Indian female physician-skillful
45. Picture of Indian female physician-confident
46. Picture of Indian female physician-competent
47. Picture of Indian female physician-uncaring
48. Picture of Indian female physician-mean
49. Picture of Indian female physician-unpleasant

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50. Picture of Caucasian female physician-capable
51. Picture of Caucasian female physician-goodnatured
52. Picture of Caucasian female physician-warm
53. Picture of Caucasian female physician-friendly
54. Picture of Caucasian female physician-skillful
55. Picture of Caucasian female physician-confident
56. Picture of Caucasian female physician-competent
57. Picture of Caucasian female physician-uncaring
58. Picture of Caucasian female physician-mean
59. Picture of Caucasian female physician-unpleasant
60. Broccoli-vegetable
61. Broccoli-meat
APPENDIX E: TARGET SOUTH ASIAN FACES USED IN THE STUDY
Target Faces Used in the Study