

Resistance to Stereotype Reduction: The Impact of Existing Cognitions on the Selection and Processing of Entertainment Narratives Featuring Counter-stereotypical Exemplars

by

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Dedication

To my parents, whose sacrifices have made my academic journey possible.

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Abstract

Entertainment media can reach millions with relatively little effort and communicate prosocial themes without triggering much reactance. This may make them especially efficient tools for large-scale positive impacts—including those facilitated by counter-stereotypical exemplars. For decades, we have seen increasing attention to the community that is represented in and producing entertainment media in the US (Larrazet & Rigoni, 2014). Most recently, movements like #OscarsSoWhite, #WhiteWashedOUT and #RepresentationMatters have pushed for increased diversity in US entertainment media, both on screen and behind the scenes. In addition to validating the experiences of marginalized groups, increased representation of the full range of individuals and communities in society can help foster intergroup understanding. When representations are counter-stereotypical, they can also create new positive associations and/or challenge existing damaging associations that are common in the culture.

Though US media representations generally continue to perpetuate social stereotypes, there has been an increase in content featuring counter-stereotypical representations of marginalized groups over time. This suggests a relative increase in opportunities for people to be exposed to these representations, which could facilitate larger shifts in cultural stereotypes. However, it is unclear if an increase in their availability will result in stereotype reduction on a societal level.

Research and theory suggest that message selection, interpretation, and discounting processes are all impacted by one's existing beliefs and attitudes (e.g., Kahan, 2017; Klapper, 1960; Vidmar et al., 1974) presenting potential barriers to the widespread influence of counter-

stereotypical representations. In this dissertation, I argue that existing stereotypical beliefs lead to (a) not selecting counter-stereotypical representations, (b) interpreting ambiguous story events to be consistent with existing stereotypes, and (c) dismissing representations that are inconsistent with existing stereotypes as unrealistic or otherwise not warranting application to one's knowledge about social reality.

I investigate each of these barriers in relation to social stereotypes about natural intelligence which have been used as the basis for discrimination against non-dominant groups and their exclusion from influential occupations. I find that gender and racial intelligence-related stereotype endorsement does indeed impact selection, interpretation, and realism judgments of counter-stereotypical genius characters. Thus, while mass media has great potential to facilitate exposure to counter-stereotypical exemplars on a large scale, our present high-choice media environment and motivated cognition make it likely that those who could benefit most from the representations (that is, those who strongly endorse stereotypes about the represented group) will either never see them, reinterpret them, or dismiss them entirely.

Chapter 1 —Media Representation and Cultural Change

1.1 The Relationship Between Entertainment Media and Cultural Ideas

Mass-mediated messages can communicate themes or dominant ideas that are embedded within a culture. Storytelling more generally has long been used for the transmission and maintenance of cultural ideas and practices around the world. It is one of the primary ways through which people communicate experiences and information (e.g., Bietti, et al., 2019; Currie & Sterelny, 2017; Dunbar, 2010; McBride, 2014). George Gerbner’s cultivation theory, a long-standing theory in the field of communication, is based on the importance of storytelling for a shared understanding of the world. It posits that the system of messages on television impacts how people view the world such that heavy television viewers (more than light viewers) tend to have a perception of social reality that is reflective of the themes that are displayed on television. This is in line with other conceptualizations of storytelling as a tool for sensemaking (e.g., Bietti et al., 2019; Scalise Sugiyama, 2001). It has been argued that television in particular can serve as a cultural forum presenting audiences with “the range and variety of ideas and ideologies inherent in American culture” (Newcomb & Hirsch, 1983, p. 49).

Research supports this relationship between stories and cultural norms/ideals. For example, Tsai and colleagues (2007) demonstrated an association between children’s storybooks and ideal affect across Eastern and Western cultures. More specifically, they showed that American storybooks tended to favor high-arousal positive emotions (e.g., excitement), while Taiwanese storybooks favored low-arousal positive emotions (e.g., calm), a pattern that was

reflected in the expressed ideal affect of European American versus Taiwanese Chinese children. Importantly, preferences for calm versus excited emotions were altered by story exposure, demonstrating that the stories not only reflect the ideal affect of the culture, but also contribute to it. Likewise, much of the research inspired by cultivation theory reveals associations between heavy television viewing and increased levels of fear, materialism, and stereotype endorsement, all of which are argued to be message themes present on American television (Morgan, 2012; Shrum et al., 2005; Shrum et al., 2011).

In addition to aiding in cultural maintenance, media stories (and cultural products more generally) can reflect and contribute to cultural change (Markus & Hamedani, 2019; Morling & Lamoreaux, 2008).¹ When it comes to mass mediated stories, change is often driven by a need to appeal to audiences. When availability was mostly limited to broadcast networks in the US,² content producers' main goal was to draw in large, diverse audiences. To this end, there were distinct industry norms and practices that tended to constrain the possibilities for the types of stories that were told. However, beginning in the late 1990s, a dramatic increase in channels changed this business strategy. Digital cable, internet-distributed entertainment content, and (most recently) subscription-based viewing models, meant that the production of media content was no longer driven by a need to appeal to the largest possible audience (Lotz, 2014; 2018).

¹ While this relationship is reciprocal, I will be focusing on the potential for changes in the entertainment media landscape to facilitate cultural shifts.

² Claims about shifting media industry norms and representations going forward are (mostly) in reference to media in the US.

This opened up opportunities to tell different kinds of stories—ones that may only appeal to narrower audience segments.

One consequence of the changing dynamics of the modern media landscape is an increase in the diversity of media representations. In an effort to appeal to younger and/or wealthier viewers, entertainment programming has increasingly included representations of historically excluded groups as a strategy to cue socially liberal ideologies, which are sometimes associated with these audiences (Becker, 1998; Fioroni et al, 2021). In addition, a growing number of programs have been produced to target the narrower audience segments of historically underrepresented or ignored social groups (Lotz, 2018). In some cases, this led to more complex and diverse representations of marginalized groups that were previously either not represented at all or represented scarcely and stereotypically (Clark, 1969). Theoretically, the increasing availability of these representations has the potential to facilitate shifts in how these marginalized groups are perceived in society.

1.2 The Impact of Counter-Stereotypical Media Representations

Despite increases in media representation of non-dominant groups (Hunt & Ramón, 2020), media has historically been (and continues to be) mostly produced by dominant group members (Hunt & Ramón, 2020; Smith et al., 2018). This imbalance presumably contributes to the entertainment media's largely stereotypical portrayals of non-dominant groups and their members. Studies have found that people tend to view members of outgroups as being more similar to each other than they do members of ingroups, which further facilitates outgroup stereotyping. This so-called outgroup homogeneity effect (Mullen & Hu, 1989) likely plays a role in how dominant group members portray outgroup members in their stories.

Research in the area of group representation has long documented the role of the media in perpetuating stereotypes of marginalized groups (e.g., Lauzen et al., 2008; Mastro, 2009; Oliver et al., 2004; Power et al., 1996; Smith & Granados, 2009). For example, crime-related entertainment and news programming tend to portray Black and Latinx people as criminals, and White people are more likely to be portrayed as victims or police officers (e.g., Dixon, 2007; Dixon & Linz, 2000; Oliver 1994).³ Similarly, an examination of thousands of books, movie scripts, and movie synopses revealed that women characters are often portrayed as emotionally reliant on men (i.e., their happiness depends on men characters; Xu et al., 2019) and that women characters' lives are centered around romantic relationships while men's are centered around adventure, tracking common gender stereotypes.

The stereotypes reinforced in the mass media can have negative impacts for groups, individuals, and society. Watching gender-typed representations has led to increased stereotypical gender attitudes in college and high school students (Ward & Friedman, 2006; Ward et al., 2005), and long-term television viewing has led to greater sexism among teen girls (Morgan, 1982). Likewise, repeated exposure to representations of Black criminals and White victims serves to strengthen the cognitive association between Black people and criminality (Dixon, 2007; Dixon & Azocar, 2007; Gilliam & Iyengar, 2000). The quantity and quality of representations of different social groups on television influence people's perceptions of both their ingroups (e.g., Sanders & Ramasubramanian, 2012; Tukachinsky et al., 2017) and outgroups (e.g., Dixon, 2007; Ward & Friedman, 2006), often manifesting as negative

³ Note that recent content analyses suggest that some of these misrepresentations are approaching a more accurate balance in news programs (Dixon, 2017).

perceptions of marginalized groups and positive perceptions of dominant groups. This further reinforces dominant groups' power over marginalized groups, perpetuating existing social inequalities.

However, in addition to reinforcing stereotypes and prejudice, entertainment media (and narratives in particular) can also help to reduce them (see Ramasubramanian et al., 2020 for a review). For example, Ramasubramanian (2011) found that participants who saw a counter-stereotypical exemplar (a concrete example of a particular category; Fiske & Taylor, 1991) held less prejudicial feelings towards the outgroup than participants who were shown a stereotypical exemplar. Exemplars can also help reduce ingroup stereotyping among members of marginalized groups. For instance, Dasgupta and Asgari (2004) found that exposure to powerful women leaders reduced women's implicit gender stereotypes. Thus, researchers have suggested that non-stereotypical or counter-stereotypical representation could be an important avenue towards the reduction of stereotypes about—and prejudice towards—nondominant groups.

Representations can reduce stereotyping by decreasing the accessibility of social stereotypes (e.g., Ramasubramanian, 2007). People tend to refer to accessible exemplars to make sense of their surroundings, including outgroup members (Juslin & Persson, 2002; Nilsson et al., 2008).⁴ For many, media content is thoroughly integrated into everyday life and exemplars from media are easily accessible—especially if the media is their primary source of information about a particular group (Busselle & Shrum, 2003; Ramasubramanian, 2011). Counter-stereotypical representations can help reduce the accessibility of dominant stereotypes while also increasing the perceived variability of members in the outgroup (by providing exemplars that do not fit with

⁴ This is known as the availability heuristic (Kahneman & Tversky, 1973), and is one mechanism through which stereotypical representations in the media negatively influence perceptions of social groups.

one's existing understanding of that group). Increasing perceived variability of a marginalized group has been shown to decrease prejudice and discrimination in both an American and French context (Er-rafiy & Brauer, 2013; Ramasubramanian et al., 2020).

The effects of exposure to counter-stereotypical exemplars on stereotype endorsement and prejudicial attitudes might be strengthened by narrative engagement processes such as the formation of parasocial relationships. With the assumption that mediated contact is processed similarly to interpersonal contact, the parasocial contact hypothesis posits that exposure to marginalized group members through media increases understanding of that group, subsequently leading to improved attitudes towards the group as a whole (Schiappa et al., 2006).⁵ Studies have found that mediated contact improves attitudes across cultural contexts, in some cases independently of direct contact with the target group (e.g., Ortiz & Harwood, 2007; Schiappa et al., 2008; Wojcieszak & Azrout, 2016).

However, exposure to counter-stereotypical exemplars has not always been shown to improve attitudes or reduce stereotypes. Similar studies have been conducted in which no effect, or the opposite effect was found. For example, Waddell (2017) found that counter-exemplars that conflicted with viewers' pre-existing expectations increased racial stereotyping among heavy consumers of crime news. Similarly, Mastro and Tukachinsky (2011) found that positive exemplars that were not prototypical representations of the outgroup did not influence viewers' attitudes towards that group.

In sum, the research on the effects of counter-stereotypical media representations of minority groups on real-world beliefs and attitudes towards those groups have been mixed but

⁵ This idea is often extended to include a perceived relationship between the viewer and a television character.

mostly positive with small effect sizes. This suggests that media exemplars may be somewhat effective in reducing stereotypes of marginalized groups, but effects may be small or non-existent in some cases. My goal, in part, is to start a conversation about what might account for these differences by examining where the process of influence through mass-mediated counter-stereotypical representations can break down, particularly in the context of fictional narratives.

1.3 Race and Gender-Based Stereotypes About Intelligence

In order to examine the potential points of resistance to the positive influence of counter-stereotypical characters more generally, I will focus on one particular social stereotype: the association between White men and natural brilliance. I chose to focus on this stereotype because it is widely held in Western societies and (given that it is positively valenced with respect to the targeted group) less likely to inspire social desirability bias compared to more negatively oriented stereotypes. Crucially, it also has substantial cultural and institutional consequences.

The belief that White men generally possess greater cognitive abilities than women or certain people of color has been used as the basis for discrimination against non-dominant groups and their exclusion from influential occupations such as those related to science, technology, and academia more generally (Aronson et al., 2001; Banks & Jewell, 1995; Cimpian & Leslie, 2017; Leslie et al., 2015; Storage et al., 2016). Entertainment media tends to reflect and reinforce gender and race stereotypes related to high-level intelligence, often representing it as a White male trait (Steinke, 2017; Wiest, 2017). For example, examining the nerd stereotype represented through the character Sheldon Cooper (from *The Big Bang Theory*), Bednarek (2012) found that “nerds” are often represented as White men with a wealth of technical and scientific knowledge and a social deficit of some kind. Similarly, Kahlenberg (2008) found that fictional prime-time television representations of characters with high-level intelligence tended to be men. More

recently, Gálvez and colleagues (2018) also found that the association between men and high-level intelligence was prevalent in Western-world films; in 10,000 movie transcripts, male pronouns co-occur with words related to high-level cognitive ability much more often than do female pronouns, particularly in family and animation genres widely consumed by children.

The idea that intelligence is a masculine trait can also impact interpretation and enjoyment of media characters. For example, Hoffner (1996) showed that young girls and boys exhibited wishful identification with intelligent boy characters, but not with intelligent girl characters. This might be explained by the fact that high-level intelligence is associated with traits that are closer to hegemonic masculinity than femininity (e.g., social ineptitude and lack of emotional displays; Betz & Sekaquaptewa, 2012; Eagly et al., 2020). Women who are represented in these roles are often also represented as unfeminine in various ways (Wiest, 2017). Furthermore, many career paths that are typically associated with innate brilliance, such as computer science, math, and physics, also tend to be represented and perceived as incompatible with stereotypically feminine traits (Cheryan et al., 2013; Wilson & Latterell, 2001).

When women are represented in media as highly intelligent, the depictions typically show lower levels of autonomy in how they use their cognitive ability, with far fewer being represented as independent rule breakers compared to men. Instead, highly intelligent women are more likely to be depicted as using their ability to help others (Wiest, 2017), reflecting the persistent cultural stereotype that men are more agentic than women (Eagly et al., 2020). In addition, while there has been an increase over time in the perception of women as competent (Eagly et al., 2020), women's competence is more likely to be attributed to hard work rather than innate ability (e.g., Del Pinal et al., 2017). So, while women may be perceived as smart in some

sense (diligent, hardworking, generally competent), innate brilliance is often still attributed to men. In fact, being hardworking is often perceived to be opposed to natural intelligence (e.g., Jackson & Nyström, 2015; Mendick, 2005).

It's important to bear in mind that the association between natural intelligence and White men is perpetuated within U.S. culture at many levels, not just in the mass media. Children learn distinctions between genders very early in life from their interactions with adults (Alexander, 2019). Research has found that parents tend to think their sons are smarter than their daughters (Furnham et al., 2002). This back-of-the-mind frame leads to biased interactions with their children. For example, parents are more likely to explain scientific concepts to boys than to girls during shared scientific thinking (Crowley et al., 2001). Such interactions can influence who kids admire, what they play with, what they like, and what they strive towards in the future.

Research examining the differences between White and Black fictional characters who are exceptionally intelligent is scarce. This may be a consequence of the limited representation of people of color in the media in general and in this type of role in particular. For example, even though Wiest (2017) stated an explicit intention to include gender and racial diversity in their qualitative analysis of exceptionally intelligent fictional characters, there was only one Black character included in their final sample, making it impossible to draw conclusions about whether they are represented differently from similar White characters. It is worth noting that the only Black character they examined (Olivia Pope from *Scandal*) was in a “subordinate role as the employee and mistress of a powerful White man” (Weist, 2017, p. 162).

Black Americans have historically been stereotyped as less intelligent than White Americans (Aronson et al., 2001; Banks & Jewell, 1995; Devine, 1989; Smith, 1990), and the stereotype that men are naturally more intelligent than women does not necessarily persist when

comparing Black men to Black women. Jaxon and colleagues (2019) revealed that children tended to see Black men as less brilliant than Black women. It is unsurprising that the findings based mostly on perceptions of White men and women do not translate perfectly onto perceptions of Black men and women given that stereotypes of Black women are not the same as stereotypes of White women, and likewise for men (see Nicolas et al., 2017; Livingston, 2012). However, Jaxon and colleagues (2019) found that children most associated brilliance with White men—regardless of their own race.

Stereotypes about the intelligence of one’s social group can impact intellectual identities, academic performance (Steele, 1997; Steele, 2010), and career interests (Fiske et al., 2018; Wood & Eagly, 2012). These stereotypes are internalized early in life—girls as young as 6 start to disassociate their gender with high-level intelligence, and associate boys with it instead, a stereotype that then influences girls’ interests away from activities that they perceive to require this ability (Bian et al., 2017). Likewise, many studies have demonstrated the cognitive burden of stereotype threat⁶ on the achievement of women and certain people of color in various academic settings (e.g., Aronson et al., 2001; Steele, 1997; Steele, 2010). Individuals who hold culturally stereotyped social identities may feel at risk of confirming those stereotypes in certain situations (e.g., women during a math exam with peers who are mostly men). The additional cognitive load this imposes then hinders performance in those situations.

⁶ Some studies have called into question the replicability of early stereotype threat studies (e.g., Finnigan & Corker, 2016; Ganley et al., 2013). Lewis and Michalak (2019) are conducting a meta-analysis to examine whether stereotype threat effects were initially overestimated or are decreasing over time (presumably due to societal changes in stereotypes or widespread awareness of stereotype threat).

Based on this research, it is foreseeable that women and Black Americans tend to be highly underrepresented in disciplines that are most associated with “brilliance” (Cimpian & Leslie, 2017; Leslie et al., 2015; Storage et al., 2016). Attention is focused on the inclusion of women in STEM, but whether or not a discipline or career path falls within STEM may not be the best indicator of where women are underrepresented. According to Leslie and colleagues (2015), a better indicator of the gender makeup of a particular field is whether the average person believes that it requires or privileges brilliance. They demonstrate that fields that people believe require natural intellectual talent tend to have a lower representation of women. These include math, engineering, physics, and computer science—but also astronomy, philosophy, and music theory/composition. Thus, it is not the case that women are underrepresented in exclusively STEM fields; nor is it the case that they are underrepresented in all STEM fields (Ceci & Williams, 2007; 2011). The biological and medical sciences fall within STEM, but women made up about half of all PhDs earned in those disciplines in 2018 (National Science Foundation, 2018). Conversely, philosophy is not a STEM field but tends to be made up of mostly men and a relatively small proportion of women (Leslie, et al., 2015).⁷

The potential impact of this stereotype may also be seen in higher education with respect to the inclusion of Black graduate students. Across disciplines, Black graduate student representation is relatively low—especially at the PhD level—but representation does appear to be particularly low in fields that are perceived to require brilliance (Cimpian & Leslie, 2017). Storage and colleagues (2016) found that the fields in which the words “brilliant” and “genius” were more frequently included in teaching evaluations contained fewer women and Black

⁷ Meanwhile, women tend to be strongly represented in fields that are assumed to lack a need for natural intellectual ability (including history, sociology, English literature, and education).

students obtaining PhDs and bachelor's degrees in that area. Further, faculty members who conceive of intelligence as fixed (rather than something you can build over time) tend to have larger racial knowledge gaps in their classes and lower engagement from Black students (Canning et al., 2019).

Taken together, these findings suggest that the cultural association of brilliance with White men is a barrier to increased representation for women and Black Americans in influential and prestigious careers. It both discourages people who are not White men from fostering an interest in these areas and reinforces the view that White men are naturally more capable or interested in these areas than other social groups. Creating a more balanced association between social groups and high-level cognitive ability can contribute to the increased integration of non-dominant groups in roles typically associated with natural brilliance. Not only does this stand to benefit the excluded social groups and create a fairer balance of power, but it also stands to benefit society as a whole and the workplaces that are able to employ a diverse set of people (Hong & Page 2004; Margolis & Fisher 2002).

1.4 Barriers to Culture Change Through Media Representation

While diverse representations in mass media hold the potential for positive widespread influence (such as expanding whom we imagine to possess high-level intelligence), there are a number of reasons why an increase in counter-stereotypical media representations may not lead to a change in cultural ideas and norms. This dissertation examines three ways in which existing stereotypical beliefs can act as barriers to the stereotype-reducing impact of counter-stereotypical genius representations in entertainment media.

First, Chapter 2 examines the role of existing gender stereotypes about intelligence in the selection of entertainment media content using a novel selection task. Second, Chapter 3

examines differences in the interpretation of counter-stereotypical representations that arise based on existing endorsement of gender and racial intelligence-related stereotypes. Third, Chapter 4 tests possible mechanisms by which representations, when they are interpreted to be counter-stereotypical, might be discounted and not applied to one's understanding of the real world. Finally, Chapter 5 summarizes the findings from these three studies and provides some concluding remarks as well as avenues for future research.

Chapter 2 —Study 1: Selective Exposure to Entertainment Media Content⁸

As reviewed in Chapter 1, changes in the media landscape over time have led to an explosion of content and, as a result, increased audience fragmentation (e.g., Edgerly, 2015; Lotz, 2018; Prior, 2007; Van den Bulck et al., 2014). While a high-choice environment may facilitate increased representations of marginalized groups, it also facilitates viewers' ability to curate their media diet. People can now be more selective in their entertainment consumption than in years past (when outlets were few); as a result, individuals increasingly consume substantively different content from one another (Metzger, 2009; Morgan, 2009). Considered in conjunction with the long-observed tendency for individuals to select congenial information (Hyman & Sheatsley, 1947), this ability to be increasingly selective in the entertainment one consumes raises the question: are counter-stereotypical representations only reaching audiences who already agree with (and thus choose to watch) them?

Research and theory suggest that this could be the case. In an American sample, Joyce and Harwood (2020) found that media are rated as more attractive when they advantage one's ingroup in comparison to an outgroup. Providing some evidence of this relationship across cultural contexts, Schieferdecker and Wessler (2017) found that people—especially those who identify strongly with their ingroup—tend to choose ingroup-rich media content in a study conducted in South Africa. Other research supports this conclusion (e.g., Abrams & Giles, 2009; Appiah et al., 2013; Harwood, 1997).

⁸ See Mustafaj & Dal Cin, 2023 for the published version of this study.

There are a couple of theoretical explanations for this preference for ingroup-favorable media. The social identity gratifications approach suggests that people are drawn to media that presents membership in one's ingroup as more desirable. As a result, they could be motivated to choose media in which their ingroup appears more frequently and is portrayed more favorably than the outgroup (e.g., Harwood, 1997; Abrams & Giles, 2007). The social cognitive approach (Bandura, 2001) argues that selection bias towards media that feature a higher number of ingroup members could be due to a desire for people to see others who are similar to themselves as behavioral models (e.g., Appiah et al., 2013; Knobloch et al., 2005; Weaver, 2011). Regardless of the mechanism, Schieferdecker and Wessler (2017) argue that those who would benefit the most from mediated contact with outgroup members are least likely to choose media content that would facilitate it.

In addition to the tendency to choose media content based on ingroup representation, people tend to choose content that is in line with their perspectives and beliefs. The reinforcing spirals framework (Slater, 2007) conceptualizes media effects as an endogenous process in which the media works in conjunction with key socializing agents such as family and peers to develop and maintain one's identity and beliefs. Importantly, patterns of media consumption can form a "positive feedback loop" (Slater, 2015, p. 3) in which one's attitudes influence media selection, which can then reinforce the attitudes and influence future media selection. This spiraling system has been examined with explicitly political media (hard and soft news). For example, in a two-wave study, Feldman and colleagues (2014) found that consuming conservative versus nonconservative media predicted global warming belief certainty and policy support in an American sample which, in turn, prospectively predicted later consumption of the same type of media.

Selective exposure has been extensively researched in the context of information seeking, particularly news and politics (e.g., Iyengar & Hahn, 2009), demonstrating a clear connection between existing beliefs and content selection (Garrett, 2009; Garrett & Stroud, 2014; Stroud, 2008). People may choose to approach congenial information and avoid uncongenial information for a variety of reasons. Messages that are familiar or fit with existing cognitive structures can be understood with relative cognitive ease (or fluency), which may make them more attractive and convincing (Oppenheimer, 2008; Reber et al., 1998). On the other hand, messages that are inconsistent with one's existing beliefs can inspire cognitive dissonance (Festinger, 1957; Klapper, 1960), identity threat (Slater, 2007), or reactance (Brehm, 1966; Knowles & Linn, 2004), which may contribute to message avoidance or motivated reasoning.⁹

For entertainment media, selection theory and research has focused primarily on the affective gratifications gained from the content. Uses and gratifications and mood management theory were among the earliest to incorporate audience choice in entertainment media effects theory (Rubin, 2002; Zillmann & Bryant, 1985), contending that individuals vary in their motivations, needs, and backgrounds and that these differences play a role in active, goal-directed media selection. More recently, dynamic transactional models such as the reinforcing spirals model (RSM; Slater, 2007), the differential susceptibility to media effects model (DSMM; Valkenberg & Peter, 2013), the model of intuitive morality and exemplars (MIME; Tamborini, 2012), and the selective exposure of self and affect management model (SESAM; Knobloch-Westerwick, 2015) incorporate individual factors that drive selection and/or effects of

⁹ Note that selective exposure processes are not necessarily conscious—we can be drawn to congenial information without having reflected on the reason.

media content. In general, however, we need additional work on how existing knowledge or beliefs impact entertainment selection with robust controls for alternative explanations.

The historical decentering of existing beliefs and attitudes from the study of entertainment selection may have been influenced by the perception that entertainment media consumption is a trivial alternative to more politically-consequential media like the news—one that can facilitate the avoidance of political information (e.g., Atre & Katz 2005; Baum & Kernell 1999; Bennett, 1998; Prior 2007). However, some have argued that entertainment media can be both implicitly and explicitly politically relevant (Delli Carpini, 2014; Holbert, 2005). The distinction between news and entertainment has long been unclear (Mutz, 2001), especially when we consider “soft news” programs (e.g., Baum, 2002). Entertainment narratives can engage explicitly political topics, such as those centered around political proceedings, and often deal with issues like abortion (e.g., Sisson & Kimport, 2016), vaccination (McClaran & Rhodes, 2020), and racism (Thompson, 2020) all of which are relevant to social attitudes and policy preferences (e.g., Holbert et al., 2003).

Though not as extensively researched as the selection of news content, several studies provide evidence that existing beliefs are implicated in entertainment media selection. For example, Coles (2020) found that strength of political identity is associated with perceptions of entertainment as politically relevant, which then impacts selective exposure to the entertainment content. Entertainment genre preferences, including the appeal of specific narratives, can be predicted by moral values (Bowman et al., 2012; Tamborini et al., 2013), potentially reinforcing morality subcultures (Zillmann, 2000). Prabhu and colleagues (2020) showed that there was a positive relationship between audience members’ moral intuitions and the moral representations in the media content they choose, and Long and Eveland (2018) showed that moral content of

music lyrics within respondents' preferred music genres was associated with their moral preferences and political ideology. Moreover, there is some evidence to suggest that selection based on existing beliefs has increased over time. Fioroni and colleagues (2021) find that between 2001 and 2016, there was increased differentiation in the shows that are popular in media markets that are primarily Democratic versus Republican, coinciding with technological advancements in the entertainment media landscape that increased viewer choice.

Thus, while counter-stereotypical exemplars might be increasingly available in the media and may be shown to produce positive attitudinal change, this may not translate to social change if people continue to watch entertainment that reinforces the worldviews they already hold. In the case of the genius stereotype, it is possible that—despite increasing availability of women exemplars—people who endorse stereotypes linking men to high-level cognitive ability might not choose entertainment content featuring brilliant women.

H1: Given the choice, people who tend to endorse the stereotype that men are more intelligent than women will more often choose to watch a story featuring a brilliant man versus a story featuring a brilliant woman.

On the other hand, research demonstrating that people prefer ingroup-rich media (e.g., Schieferdecker & Wessler, 2017) suggests that, even among women who endorse the stereotype, there may be a competing desire to choose representations featuring highly intelligent women over highly intelligent men. That is, a preference for media containing favorable representations of women may counteract a preference for media that coincides with pre-existing beliefs. To

explore the potential impact of gender identity in this instance, I ask the following research question:

RQ1: Will the relationship between stereotype endorsement and story selection be moderated by the gender of the viewer?

2.1 Method

In order to examine my hypothesis and research question, I created and pilot-tested a set of stimuli that approximate actual entertainment content. I then designed a two-part controlled observational study that first captures pre-existing gender-based stereotypes about intelligence and later asks participants to make several selections between a few of my show descriptions at a time. Each of these processes is described in further detail below.

2.1.1 Stimuli Creation and Pilot Testing

I created several television show descriptions, half featuring an exceptionally intelligent (or “brilliant”) character and the other half featuring a character that was not exceptionally intelligent. Stimuli were written by me, though some were adapted from synopses posted on websites that contain entertainment story abstracts (e.g., Wattpad, Amazon Books, IMDb; see the Appendix for example stimuli). Wiest (2017) found that a number of characteristics are used to indicate intelligence in media representations, the top 3 being: having a high IQ; being exceptionally logical, analytical, and/or intuitive; and having the ability to think on one’s feet, perform under pressure, and/or being exceptionally clever. Further, intelligence is often associated with mathematical and spatial ability (Furnham et al., 2002) and (as noted above)

particular professions. I used these insights to guide my initial creation of television show descriptions featuring a highly intelligent character.

To increase generalizability, descriptions were created across 4 genres (science fiction, crime fiction, drama, and comedy). These were pilot tested with a sample of respondents from Amazon Mechanical Turk ($n = 401$) to ensure that the brilliant characters were perceived as more intelligent than the characters who were not meant to portray brilliance. Each participant saw 8 descriptions from the same genre with the same gender protagonist (e.g., some participants saw 8 science fiction descriptions with a woman lead, others saw 8 dramas with a man lead, and so on). After each description, respondents indicated the extent to which the main character possessed a number of traits including smart, brilliant, and intelligent (not at all to extremely). Responses for these three traits were averaged together into a scale ranging from 1-5 (Cronbach's $\alpha = .93$), and t-tests were performed to see if the control and genius conditions varied significantly from each other both overall and within each genre.

Two of the control descriptions needed small adjustments to reduce the perceived brilliance of the main characters to better distinguish them from those in the brilliance condition. These descriptions were pilot tested again with the adjustments ($n = 100$). Multilevel analysis of ratings for the final set of show descriptions includes ratings from both pilot tests, resulting in a total of 501 participants. For the two descriptions that were adjusted and piloted a second time, only ratings from the second pilot test are included in the analysis.

The resulting set of descriptions differed significantly by condition, with an average of 4.22 ($SD = .86$) for the "brilliance" stories and 3.17 ($SD = .92$) for the control stories. After controlling for shared variance within each participant's responses (using a multilevel model in which we specify participant ID as a random effect and whether the description had a genius

character as a fixed effect), the brilliant characters were perceived to be of higher intelligence than the non-brilliant characters ($b = 1.06, p < .001$; see Table 2.1).

Table 2.1. *Mixed effects model for ratings of brilliant vs. non-brilliant stories*

	Intelligence Trait Ratings (SE)
Intercept	3.18*** (0.03)
Brilliance Stories	1.06*** (0.04)
Random Effects	
ICC	0.47
N Respondent	501
Observations	3206
Marginal R ² / Conditional R ²	0.26 / 0.61
log-Likelihood	-3735.84
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$	

2.1.2 Selection Study

Having developed suitable stimuli, I proceeded to conduct a two-part study to test the influence of pre-existing stereotype endorsement on selection. I started by measuring stereotype endorsement and key demographic variables. Given that the stereotype endorsement measure was novel and with unknown potential for carryover effects, it was completed in a first session; respondents were re-contacted one week later to complete the choice task portion, in which they made selections among the fabricated television show descriptions that featured a highly

intelligent character, and (separately) among the ones that did not feature a highly intelligent character. The procedure and measures are described in more detail below.

Two panels of U.S. participants were recruited through the Dynata research firm. The first panel participated in the summer of 2021. The survey firm experienced difficulty retaining respondents for the second part (a phenomenon not unique to my study) and recruited a second panel in the fall of 2021 to meet my planned sample size. Of the respondents that participated in both parts, 3 did not answer all of the stereotype endorsement questions and were dropped from the analysis.¹⁰ See Table 2.2 for sample demographics.

Table 2.2. Sample Demographics

	Total (N=274)
Gender	
Man	157 (57.3%)
Gender Fluid/Nonbinary	4 (1.5%)
Woman	113 (41.2%)
Age	
Mean (SD)	56.0 (17.0)
Median [Min, Max]	59.0 [18.0, 92.0]
Missing	5 (1.8%)
Race	
Asian	7 (2.6%)

¹⁰ Across both data collection efforts, there was a 25% retention rate.

Black/African American	19 (6.9%)
Hispanic/Latinx	1 (0.4%)
Mixed race/Not listed	25 (9.1%)
Native Hawaiian/Pacific Islander	2 (0.7%)
White	220 (80.3%)
Education (less than high school to masters and/or doctorate)	
Mean (SD)	3.77 (2.10)
Median [Min, Max]	3.00 [1.00, 8.00]
Missing	1 (0.4%)
Income (less than 25K to more than 100K)	
Mean (SD)	2.49 (1.12)
Median [Min, Max]	2.50 [1.00, 4.00]

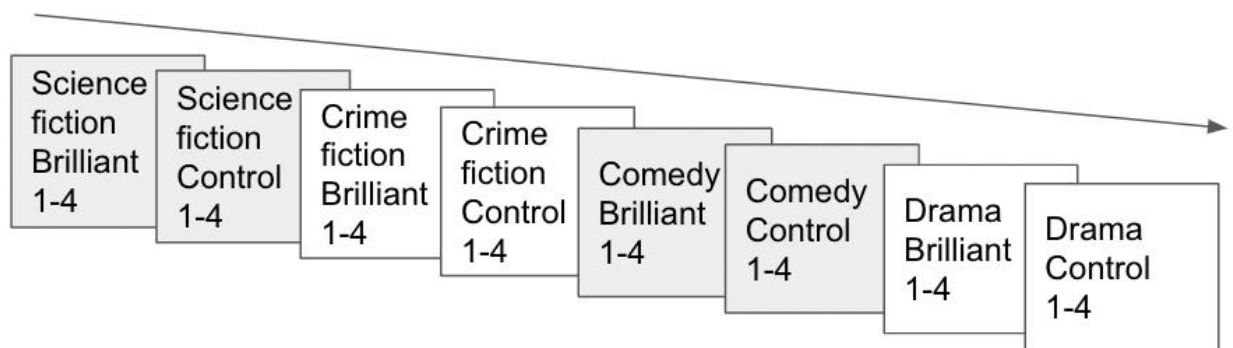
2.1.3 Procedure

Data were collected using a two-part panel survey. In the first part, participants completed a measure of stereotype endorsement, demographic, and media use questions. About one week later, participants completed a second part in which they completed a media selection task. Respondents' scores on the stereotype endorsement measure in Part 1 did not predict participation in the second part (see Appendix A for an attrition analysis). In Part 2, respondents were asked to select the 1 show they most wished to watch out of 4 shows within the same genre (they did this a total of 8 times and across 4 genres).

Stimuli were 32 show descriptions that varied along 3 dimensions: protagonist brilliance, protagonist gender, and genre. Each trial was for a different genre and level of protagonist

brilliance (e.g., one trial contained the 4 comedy descriptions with non-brilliant protagonists, another the 4 science fiction descriptions with brilliant protagonists, and so forth). Within each trial, half (2) of the descriptions featured a man, and half (2) featured a woman (random choice would thus result in equal likelihood of selection for each gender). The brilliant and non-brilliant trials within each genre were presented one after the other, but in randomized order, and the order of genres was also randomized. Within each trial, the order of descriptions was randomized. See Figure 2.1 for a visual representation of this design. Each of the 4 descriptions within each genre could show a man or woman protagonist, but which two were shown as men and which two were shown as women was randomized.

Figure.2.1. Selection Task Design



Note. Participants selected from 4 television show descriptions in each trial, two of which featured a woman protagonist and two featured a man protagonist. Genres appeared in random order. The control and brilliance conditions of each genre always appeared together, but the order in which they appeared was randomized.

2.1.4 Measures

Stereotype endorsement. I assessed intelligence-related gender stereotype endorsement using a trait-rating measure. Participants were told that they were providing information about casting potential for television shows and were presented with 10 different faces (5 White men and 5 White women). Faces were obtained from the Chicago Face database (CFD: Ma et al., 2015) and chosen to be similar in perceived age (20-30 years old) and attractiveness (slightly above average to reflect expectations of television show casts¹¹). Selections were made based on the available norming data for the CFD.

For each face, they were asked to indicate the extent to which they thought that person could display each of 9 different traits (intelligent, logical, and gifted/brilliant, plus 6 distractors) on a 5-point scale (from not at all to a great deal). Intelligence-related gender stereotype endorsement was calculated as the difference between a participant's average ratings for the three intelligence-related traits given in response to women's faces and their average ratings for intelligence-related traits given in response to men's faces. The resulting variable ranged from -5 to 5 with increasing values indicating increased intelligence ratings for men relative to women (i.e., greater stereotype endorsement).

Selection of counter-stereotypical representations. Among the shows that featured highly intelligent characters, the ones that feature a female protagonist are considered counter-stereotypical, whereas the ones that feature a male protagonist are considered stereotypical. To create my counter-stereotypical selection outcome variable, I simply sum the number of times each respondent chose a woman protagonist when presented with brilliance stories. Since

¹¹ Rated above 3.5 on a 7-point attractiveness scale.

participants saw brilliance stories in each of the 4 genres, the theoretical range of the variable is 0-4 (never selected to selected for all 4 genres).

Preference for women protagonists. In order to better isolate the impact of pre-existing beliefs about intelligence on the selection of brilliant women over brilliant men, I controlled for a general preference for men or women protagonists. Thus, I use the number of times respondents chose a woman protagonist over a man protagonist in the control stories as an indication of this general preference and use it as a control variable in my analysis. Similar to my selection variable above, I summed the number of times a woman protagonist was chosen across the 4 genres resulting in a count variable that ranged from 0 to 4. I then subtracted 2 in order to produce a variable that ranged from -2 to 2, with 0 indicating no preference for women versus men protagonists.

Demographic controls. Finally, I captured a few key demographic variables to use as controls: gender, age, race, education, and income (see Table 2.2 for a breakdown of sample demographics). Age was re-coded by decade into a scale from 1-7 (20s to 80s; one 18-year-old was included in the 20s category and one 92-year-old was included in the 80s category). These variables were used as controls to rule them out as confounding variables.

2.2 Analysis and Results

To examine whether pre-existing stereotype endorsement was associated with the selection of stories featuring counter-stereotypical representations, I estimated an OLS regression with the stereotype endorsement variable as a predictor (Table 2.3). I included key demographics and overall preference for women protagonists (i.e., the number of woman protagonist stories selected in the “non-brilliant” condition) as a control and the number of times a counter-

stereotypical representation was chosen (i.e., the number of woman protagonist stories selected in the “brilliant” condition) as the outcome variable.

Pre-existing stereotype endorsement does indeed predict the selection of counter-stereotypical representations in the choice task ($b = -.38, p < .05$), above and beyond any preference for female protagonists ($b = -0.03, ns$). The association remained significant ($b = -.36, p < .05$) when also controlling for key demographic variables. Figure 2.2 presents predicted values of counter-stereotypical representations selected across the observed range of the stereotype endorsement variable: $-1.8 - 1.5$ (less than its theoretical range of -5 to 5). Moving across the entire observed range of stereotype endorsement shifted counter-stereotypical selection by just over 1 unit (out of 4) and across the scale midpoint (selecting 2 out of 4 counter-stereotypical representations), supporting H1.

There was no interaction between pre-existing stereotype endorsement and participant gender ($b = 0.07, ns$), indicating that this relationship is not dependent on the gender of the viewer (RQ1).¹² To probe this further, I conducted a post-hoc Welch two-sample t-test to examine if pre-existing stereotype endorsement differed by participant gender and found that it did not ($M_{men} = -.15, SD_{men} = .43; M_{women} = -.05, SD_{women} = .41$), $t(268) = -1.74, p = .08$).

Interestingly, the constant in Model 1 indicates that preference for stereotypical versus counter-stereotypical representations are about equal when women and men are judged to be of equal intelligence, and there is no general preference for women versus men protagonists. Finally, while I did not hypothesize about the impact of race on this relationship, I found that

¹² Plotting of the interaction showed essentially overlapping lines. Adding the interaction did not meaningfully change the control variable coefficients, despite a slight drop in significance of the effect of stereotype endorsement on counter-stereotype selection.

White respondents had a significantly lower tendency to select the counter-stereotypical representations compared to respondents of other races ($b = -.41, p < .01$). A post-hoc Welch two-sample t-test showed that stereotype endorsement, however, did not differ significantly by race ($M_{white} = -.11, SD_{white} = .41; M_{poc} = -.12, SD_{poc} = .48$); $t(272) = -0.13, p = .90$).

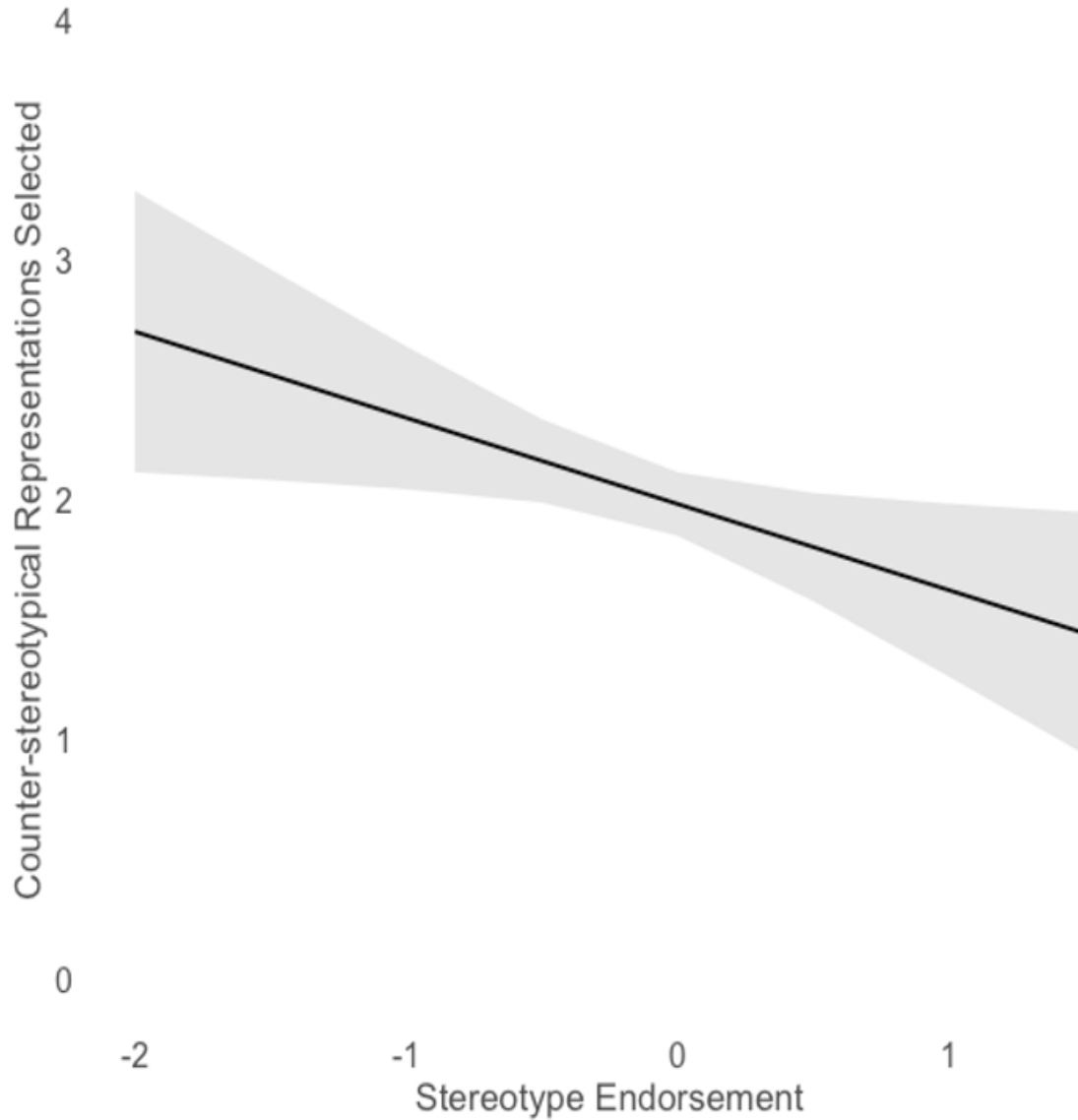
Table 2.3. *Stereotype endorsement and number of counter-stereotypical selections*

	Model 1	Model 2	Model 3
Stereotype Endorsement	-0.37*	-0.38*	-0.36*
	(0.15)	(0.15)	(0.16)
Preference for Women Protagonists		-0.03	-0.03
		(0.06)	(0.06)
Woman Respondent			0.04
			(0.15)
Income			-0.01
			(0.07)
Education			-0.01
			(0.04)
Age			0.04
			(0.04)
White (White = 1, all others = 0)			-0.41**
			(0.17)
Constant	1.97***	1.96***	2.19***
	(0.07)	(0.07)	(0.29)
Observations	274	274	265
R ²	0.02	0.02	0.05
Adjusted R ²	0.02	0.02	0.02

Residual Std. Error (<i>df</i>)	1.06 (272)	1.06 (71)	1.06 (257)
F Statistic (<i>df</i>)	6.08* (1; 272)	3.16* (2; 271)	1.71 (7; 257)

Note: *p<0.05; **p<0.01; ***p<0.001. Coefficients are unstandardized.

Figure 2.2. *Stereotype endorsement and number of counter-stereotypical selections*



2.3 Study 1 Discussion

Selection processes are important for entertainment media effects research, particularly given the current technological environment. An increasing percentage of viewing occurs online or via streaming platforms (Pew Research Center, 2017) that give the viewer the option to choose from a seemingly endless array of content. This first study shows that pre-existing beliefs (in this case, stereotypes about gender and intelligence) are associated with selection of entertainment content that aligns with those beliefs. Specifically, using a two-part design, I demonstrate that the more strongly an individual sees brilliance in men than in women, the less likely they are to later choose a TV show that features a brilliant woman over one that features a brilliant man. This relationship persists even when controlling for a general preference for men or women characters.

Participant gender did not moderate the relationship between pre-existing beliefs and selection of shows featuring brilliant women—this warrants further exploration. Research shows that girls internalize the association between boys and high-level cognitive ability (i.e., brilliance) at a young age (Bain et al., 2017), and women often hold stereotyped views of their ingroup (e.g., Sanders & Ramasubramanian, 2012). Therefore, there is reason to believe that participant gender would not make a difference when it comes to gender stereotype endorsement, which was confirmed in my post-hoc analysis. Of course, selection is determined by many factors; other influences might push in opposite directions within gender identities.

I did not form hypotheses about demographics other than gender but observed that race was significantly associated with selection of counter-stereotypical representations. White respondents, compared to respondents of other races, showed a decreased tendency to select the

counter-stereotypical representation. Stereotype endorsement, however, did not differ significantly by race. The explanation for this association is not clear from my data; perhaps White respondents are more familiar with the brilliant man trope and so were more likely to gravitate towards it than were respondents of other races, or perhaps people of color gravitated away from representations of exceptional White men. Future work should examine this association.

My results provide new evidence that entertainment media is selected in line with one's existing beliefs and identities. Along with selective exposure to news media and informational content, selection of belief-consistent entertainment has the potential to contribute to processes that reinforce harmful worldviews and isolate people from information or ideas with which they do not already agree.

This study has a few limitations. First, it is based on U.S. respondents and focuses on one cultural stereotype as it pertains to a particular social category. As such, it cannot necessarily be generalized to other cultural contexts or other stereotypes. Since I used the specific case of male brilliance in Anglo-Western societies, it remains to be seen whether similar effects obtain in other societies and when other stereotypes are being assessed. It is important to explore this relationship in different cultural contexts, across different stereotypes, and even the same stereotype in reference to other social groups in the U.S. to establish it as a broad-reaching and systematic process. Note that this process does not necessitate that the specific stereotype I test here persists in other cultural contexts, but rather that the pre-existing stereotypes or beliefs that are held in other contexts impact the selection of entertainment content.

Second, as briefly mentioned above, I only focus on protagonist gender (and not other/intersecting social identities) in this study design. This was partly to manage the number of

stories presented as stimuli and reduce participant burden. Also, giving numerous social identity cues in short descriptions is difficult and there is anecdotal evidence to suggest that North American audiences (particularly those who are also White) not only imagine characters as White by default but also can continue to imagine them as White despite the presence of descriptive information indicating otherwise (e.g., Holmes, 2012). I incorporate race in the following two studies, which use audiovisual stimuli.

Third, although I created several descriptions (across genres) to increase the generalizability of the results, manipulating brilliance and genre while keeping the text constant across conditions was impossible. I opted to use a within-subjects design in order to control for an overall preference for men or women characters while simultaneously capturing preference for stereotypical versus counter-stereotypical characters. However, this precludes using the same stories across protagonist gender, as participants would see the same descriptions with protagonists of different genders, introducing a source of invalidity by cuing participants to the hypothesis. Therefore, I cannot conclusively rule out impacts of unmeasured differences in the stories on selection.

Finally, though my design contains elements approximating how people choose entertainment outside the lab, it did not include as many options as people generally have available (nor did I offer a “choose none/do something else” option). While the design does give participants multiple options within a subgenre, people typically have a much larger library from which to choose when searching through streaming services—they can also search across genres, customized categories, and streaming platforms as they do so. My design also forces a choice in each genre when, in reality, participants may not usually choose to watch certain genres at all.

Future research should examine the association between existing beliefs and entertainment selection in a more naturalistic setting.

Nevertheless, this study demonstrates that pre-existing stereotypes influence entertainment selection. Given that exposure to a wider range of representations may improve attitudes towards marginalized groups, the wider range of representations emerging in entertainment is a positive development. However, my findings indicate that those who could benefit most from these representations (i.e., those who endorse a limiting/harmful stereotype) are less likely to be exposed, with important implications for the utility of mass media in this domain. If counter-stereotypical representations are mostly reaching those who do not endorse the stereotype in the first place, the stereotype is likely to persist at the cultural level (or, at least, will not be influenced by media representations).

Yet given the complexity of entertainment narratives, entertainment media is still a promising route through which people may be exposed to experiences and ideas different from their own. Many factors go into the selection of entertainment that can facilitate this—a space enthusiast may watch *Hidden Figures* for the NASA-related storyline and simultaneously be exposed to counter-stereotypical representations of Black American Women. Similarly, one could choose to watch *House MD* because it features a brilliant male doctor but may, in the process, also be exposed to a counter-stereotypical representation of a brilliant woman medical student in a supporting role. Thus, despite the tendency to choose media based on existing beliefs, it is still possible that viewers are regularly coming into contact with uncongenial information or representations in entertainment media. It is also likely that at least some shows or movies have a great enough viewership to have an audience that spans different viewpoints.

Therefore, in my next study, I explore how people interpret counter-stereotypical representations when they *are* exposed to them in an entertainment narrative.

Chapter 3 —Study 2: Differential Interpretation Based on Existing Beliefs

Some story premises are, for various reasons, ambiguous enough to appeal to ideologically diverse audiences (e.g., they may not explicitly engage with controversial issues or may otherwise be set up so that different audience members can “read” the story differently). Furthermore, as demonstrated by Garrett (2009), selective exposure does not necessitate selective avoidance. While people are likely attracted to entertainment with congenial content, they may not be equally motivated to avoid uncongenial content. After all, there are other (arguably stronger) considerations when choosing entertainment, such as genre, quality, or cast.

In addition, media choices are not made in isolation; beyond personal preference, various environmental or situational factors may prove influential. For example, choices are often made in social situations or based on social influence (e.g., Friemel, 2012; Webster, 2009). Thus, it is probably not the case that people *only* watch congenial content or content that they would be most attracted to outside of any external influences. The question then becomes: how do people interpret stories that contain information that is inconsistent with or challenges existing schemas?

3.1 Existing Beliefs and Narrative Comprehension Through Mental Models

The mental model approach is a widely-referenced approach to understanding narrative processing. It posits that we understand stories using the same process by which we understand the world. This process involves constructing dynamic cognitive structures that represent different aspects of the world, which are then referenced to understand our surroundings (Johnson-Laird, 1983; van Dijk & Kintsch, 1983). Likewise, to understand a narrative, the viewer must construct various models which will serve as their context for understanding story

events. The situation model is a mental model of what the story is about, including the sequence of events and character actions (Busselle & Bilandzic, 2008; Graesser et al., 2002; Wyer, 2004; Zwaan et al., 1995). We construct character models as we glean information about the characters and a story world model to represent the coherent conceptual domain in which the story takes place. The story world model contains information about a) the place and time in which a story occurs and b) the “story world logic” which implicitly indicates what is and is not possible in the story world (Busselle & Bilandzic, 2008; Segal, 1995).

As we process new information in the story and build relevant mental models, we typically reference our existing beliefs and schemas—the “knowledge structures that represent objects or events and provide default assumptions about their characteristics, relationships, and entailments under conditions of incomplete information” (DiMaggio, 1997, p. 269).¹³ The schemas and beliefs we reference, including what we know about story genres and what we know about the situations, people, and places that we encounter in the story, are shaped by our experiences and can differentially guide how story information is interpreted and processed. Studies have found that prior knowledge or familiarity with certain groups or processes can lead

¹³ We have a tendency to simplify our complex surroundings by mentally categorizing things and people based on shared characteristics. In general, this is a functional practice that allows us to infer a large amount of information based on limited apparent qualities, helping us anticipate social behavior for (potentially) more effective social interaction (Dovidio et al, 2011). However, it can also be harmful, as in the case of negative stereotypes of marginalized groups.

to higher self-reported experience of transportation,¹⁴ a higher likelihood of engagement, and more story-consistent beliefs (Green, 2004; Morgan et al., 2009; Slater et al., 2006; Zillmann 1995).

In general, our beliefs affect how we interpret information. For example, Gaines and colleagues (2007) found that Democrats and Republicans interpreted the same facts regarding casualties in the Iraq war in ways that tended to rationalize their existing opinions. Similarly, even when narratives are explicitly intended to go against a particular perspective, existing beliefs can guide interpretation of narrative content in an attitude-consistent manner. In a well-known study, Vidmar et al. (1974) found that viewers of *All in the Family* (a satirical show centered around a “lovable bigot” named Archie, which was meant to use humor to bring bigotry out in the open and poke fun at it in order to help reduce prejudice), was interpreted by viewers in markedly different ways based on their existing prejudices and beliefs. High-prejudice individuals were significantly more likely to admire Archie, perceive him as “winning in the end,” and perceive him as “making better sense” than his liberal counterpart. The show developed two distinct audiences that interpreted the storylines differently: some commended Archie for his racist views, and others commended the show for mocking bigotry.

Studies investigating audience interpretation of other satirical content show similar results. LaMarre and colleagues (2009) found that Conservatives and Liberals interpreted the content of the satirical late-night show *The Colbert Report* differently. Both Liberals and Conservatives thought that Stephen Colbert was funny, but Conservatives were more likely to

¹⁴ A component of narrative engagement which can be thought of as an “integrative melding of attention, imagery, and emotion focused on story events” (Mazzocco et al., 2010, p. 361).

think that he genuinely did not like Liberals, while Liberals were more likely to think that he was using satire when offering political commentary. Since differential interpretations are in part facilitated by ambiguity in a message, they are especially likely to occur in response to satirical content, which often involves articulating the opposite view of what the content is meant to support. However, diverging interpretations likely occur at any point where a story (or other type of entertainment) leaves an information gap or room for interpretation.

Further, encountering information that is not compatible with one's beliefs can produce cognitive dissonance, threat, and/or reactance, and may prompt motivated cognition as the easiest way to reconcile the new information with existing knowledge structures (Kunda, 1990). Motivated cognition can take many forms, including biased information search in which one may disproportionately attend to evidence that confirms existing beliefs as opposed to disconfirming evidence (Kahan, 2017). This may lead to a result similar to filling in information gaps with existing knowledge—both dispose one to come away with an understanding of the message that is in line with one's existing beliefs.¹⁵

In sum, when entertainment content is able to draw in ideologically diverse audiences, people are likely to get different things out of the story. Entertainment media often does not offer an unambiguous direct argument for or against a particular belief or behavior. Instead, it relies on

¹⁵ Note that people cannot arrive at any conclusion they want regardless of the information. They typically maintain an illusion of objectivity throughout the motivated reasoning process (Kunda, 1990; Pyszczynski & Greenberg, 1987). That is, they maintain their desired conclusion so long as they're able to point to enough evidence that supports it (Darley & Gross, 1983). Directional goals, however, lead people to selectively call upon existing knowledge or attend to pieces of information that would support their desired conclusion.

inferential processes, increasing the likelihood that people will come to different conclusions. Audience members are likely to use their existing “knowledge” to construct the meaning of a story and disproportionately attend to features of a message that will help them reach a desired conclusion. In the case of counter-stereotypical representations of brilliance, people who highly endorse the White man-brilliance stereotype may apply their stereotypical schemas to come away with a relatively stereotypical interpretation of an ambiguous counter-stereotypical exemplar.

H1: People will (a) interpret the characters who are not White men to be less intelligent and (b) be less likely to interpret them as geniuses compared to characters who are White men.

H2: Increased stereotype endorsement will be associated with lower (a) intelligence ratings and (b) genius ratings for counter-stereotypical characters compared to the stereotypical character (White men).

To further explore this process, I ask the following research questions:

RQ1: Will characters who are not White men be interpreted to be (a) more hardworking or (b) higher on other stereotype-consistent traits than the White men characters? (c) Will this be impacted by intelligence-related stereotype endorsement?

RQ2: Will people generally (a) use stereotype-consistent keywords and (b) be less likely to focus on intelligence in their impressions of intelligent characters who are not White men when asked to provide their general impressions of the character? (c) Will this be impacted by intelligence-related stereotype endorsement?

For the purpose of this study, stereotype-consistent words are defined by category based on the stereotype content model (SCM, Fiske et al., 2002) and the related communion and agency dimensions originating in personality psychology (Bakan, 1956). The stereotype content model contends that intergroup perceptions are derived from judgments along two key dimensions, warmth and competence, which are driven by social-structural relationships and affect emotions and behaviors towards different social groups. The communion and agency dimensions have also frequently been referenced in work examining (especially gender) stereotypes (e.g., Eagly & Steffen, 1984).

Research shows that agency and competence tend to be associated more with masculinity, while communion and morality (closely related to warmth) are associated with femininity (e.g., Abele & Wojciszke, 2007). Thus, mentions of traits related to communion and warmth, such as friendliness, trustworthiness, helpfulness, and emotionality, can be taken to be stereotype-consistent for women, while mentions of traits related to agency and competence, such as efficiency, confidence, assertiveness, capability, and skillfulness are taken to be stereotype-consistent for men (e.g., Cuddy et al., 2008).

However, stimuli for the current study will feature Black and White men and women characters, and the associations of the above dimensions with femininity and masculinity are not enough to determine stereotype-consistent judgments for all of these social identities. Coles and

Pasek (2020) show that perceptions of race-unspecified men and women are more closely related to perceptions of White men and women than of Black men and women. They found that Black women and Black men both tend to be perceived as more masculine than their White counterparts. Furthermore, intersectional perspectives and emergent stereotype content models contend that intersecting social identities culminate in unique conditions and stereotypical associations rather than the additive application of stereotypes for each social identity more generally (Cole, 2009; Crenshaw, 1993; Kunda et al., 1990; Nicolas et al., 2017). This is especially relevant for doubly marginalized groups such as Black women.

Stereotypes of Black women have emphasized traits of being strong, dominant/aggressive, confident/assertive, loud, unintelligent, sexually promiscuous, and, in the case of the mammy stereotype, nurturing and selfless (e.g., Ghavami & Peplau, 2013; Thomas et al., 2004). Stereotypes of Black men emphasize traits of being athletic, loud, violent/dangerous/criminal, poor, unintelligent, and lazy (e.g., Ghavami & Peplau, 2013). Stereotypes of White men have included that they are high status/successful, intelligent, assertive, arrogant, educated, and leaders, while those of White women have included that they are arrogant, attractive, ditsy, materialistic, feminine, submissive, and high status (Ghavami & Peplau, 2013). I use these insights from the literature to guide my interpretation of responses examining the above RQ's.

3.2 Method

3.2.1 Participants and Procedure

Participants were recruited through the CloudResearch platform (Litman et al., 2017) to complete a short two-part survey.¹⁶ The first part assessed endorsement of intelligence-related gender and race stereotypes. The second part presented each participant with one short (< 2 minute) clip from an American TV show or movie featuring a highly intelligent character who was either a White man, White woman, Black man, or Black woman. The social identity of the character they saw was randomized. Within each condition/social identity, there were three possible clips that could be displayed, and they fell into the following subject domains: mathematical ability, chess ability, and logical reasoning ability.¹⁷ They were then asked to indicate their impressions of the character in the clip in an open-response question, followed by a few closed-ended questions. Finally, they were asked a number of demographic questions. The measures are described in more detail below.

A total of 1006 participants completed the survey. However, in reviewing open response data, I noticed that the ratings provided were not always in reference to the target (main) character in the clip, and instead referenced a secondary character. As the secondary characters were usually part of a different social group, I decided to use the open responses to determine whether or not each respondent had rated the correct character. A research assistant blind to the design and intent of the study coded each response; responses were excluded from analyses if

¹⁶ Due to the difficulty experienced in collecting data in 2 waves for Study 1, Studies 2 and 3 collect both parts of the survey in the same session.

¹⁷ See Appendix B for a list of the characters and shows used as stimuli in each category.

they were clearly in reference to a secondary character (i.e., when descriptions or pronouns described the supporting character) and retained otherwise. An attrition analysis for the respondents that were excluded can be found in Appendix B. After excluding respondents who rated the wrong character, I was left with a total of 953 respondents; demographics are reported in Table 3.1.

Table 3.1. *Study 2 sample demographics*

	Overall (N = 953)
Age	
Mean (SD)	35.2 (11.0)
Median [Min, Max]	33.0 [18.0, 75.0]
Missing	17 (1.8%)
Gender	
Man	389 (40.8%)
Woman	540 (56.7%)
Nonbinary/gender fluid	20 (2.1%)
Missing	4 (0.4%)
Race	
American Indian or Alaska Native	6 (0.6%)
Asian	68 (7.1%)
Black or African American	68 (7.1%)
Hispanic/Latinx	72 (7.6%)
Multiracial or race not listed	77 (8.1%)

Native Hawaiian or Pacific Islander	3 (0.3%)
White	655 (68.7%)
Missing	4 (0.4%)

Income

Less than \$25,000	186 (19.5%)
\$25,000-\$59,999	354 (37.1%)
\$60,000-\$99,999	257 (27.0%)
More than 100,000	152 (15.9%)
Missing	4 (0.4%)

Education

Less than high school	16 (1.7%)
High school graduate	135 (14.2%)
Some college	277 (29.1%)
2-year degree	95 (10.0%)
4-year degree	286 (30.0%)
Professional degree	18 (1.9%)
Some graduate school	23 (2.4%)
Master’s and/or Doctorate	99 (10.4%)
Missing	4 (0.4%)

3.2.2 Measures

Stereotype endorsement. To assess stereotype endorsement, I used the same trait rating measure from Study 1 but added faces of Black men and Black Women. Thus, participants were

each presented with 16 faces (4 White men, 4 White women, 4 Black men, and 4 Black women) and told to indicate the extent to which each person could portray 6 different traits in a television show. Two of these traits were related to intelligence (intelligent, logical), and four were distractor traits (assertive, friendly, hardworking, nerdy). Faces were obtained from the Chicago Face database (CFD: Ma et al., 2015) and once again chosen to be similar in perceived age and attractiveness.¹⁸

Three variables were initially calculated from these ratings, each indicating endorsement of the intelligence-related stereotype for a particular social group compared to White men. I calculated a “White woman stereotype endorsement” variable by subtracting participants’ average ratings for the two intelligence-related traits in response to White women’s faces from their average ratings for those traits in response to White men’s faces. Likewise, the “Black woman stereotype endorsement” variable reflected the difference between the average ratings of these variables given to Black women’s faces and those given to White men’s faces, and the “Black man stereotype endorsement” variable reflected the difference between the average ratings given to Black men’s faces and those given to White men’s faces.¹⁹ The resulting variables were coded to (theoretically) range from -1 to 1, with increasing values indicating increased intelligence ratings for White men's faces vs. the comparison group.

For my analysis, I created a new stereotype endorsement variable. For participants who saw a clip featuring a White woman, the variable was equal to their White woman stereotype score (described above), for those who saw a Black woman character, it was equal to their Black

¹⁸ See study 1 methods section for averages.

¹⁹ These were calculated as separate variables to allow for the possibility that one might endorse intelligence-related stereotypes about one or two of these social groups, but not the others.

woman stereotype score, and for those who saw a clip featuring a Black man it was equal to their Black man stereotype score. Finally, for those who saw a White man character, the variable was set to their average stereotype endorsement across the other three identities. This resulted in a variable that reflects intelligence-related stereotype endorsement for the particular social group that the participant saw in the video clip (and subsequently gave intelligence ratings for) in comparison to White men. Thus, it allows me to model the extent to which stereotype endorsement for a particular group affects interpretations of characters from that group and excludes the possibility of examining the effect of existing stereotypes for a different social group.

Generated impressions of the character. In the second part of the study, participants were presented with a short clip of a highly intelligent character. They were then presented with an open-response question about their impressions of the main character (what are your impressions of the main character in this clip?). These responses are used to identify keywords and themes in character impressions across character social identity.

Stereotypical trait rating. Following the open response question, participants were asked to indicate how much they thought a number of traits described the main character (from not at all to very much), including intelligent, logical, hardworking, assertive, friendly, and emotional. Responses for each trait were coded to range from 0 to 1. Participants were also asked if they would consider the main character to be a genius in a closed-ended question (definitely, maybe, not really, not at all)²⁰ and the reasoning behind this answer in an open-ended question. Responses to the closed-ended question were coded to range from 0 to 3.

²⁰ Along with a few other clip quality and interest questions that were used to identify stimuli for Study 3.

Demographic controls. Once again, I captured a few key demographic variables to use as controls: gender, age, race, education, and income. Age was re-coded by decade into a scale from 1-6 (20s to 70s), education was re-coded to range from 0-7 (less than high school to master's and/or doctorate), and household income was re-coded to range from 0 to 3 (less than 25K to over 100K).

3.3 Analysis and Results

To examine if the White men characters are generally rated higher in intelligence-related traits (intelligent and logical), and whether they tend to be assessed more frequently as being a genius, I estimated a series of linear mixed-effects models with stimuli (i.e., the video clip being viewed) specified as a random effect. This specification allows me to model differences between conditions while accounting for variance due to specific stimuli.

The first model in Table 3.2 shows that, entering only condition and whether participants had seen the show/movie before into the model, there is no significant difference in intelligence ratings for any of the counter-stereotypical characters compared to the White man characters, which does not support H1a. When demographic controls are added to the model (Model 2), White women characters are rated marginally significantly lower in intelligence compared to White men ($b = -.04, p < .10$); there is no difference in intelligence ratings between the other three conditions.

The interaction between stereotype endorsement (SE) and condition in Model 3 shows that higher social-identity-specific stereotype endorsement leads to lower character intelligence ratings when participants saw a Black man ($b = -.25, p < .001$) or Black woman ($b = -.21, p < .01$) character compared to a White man character, providing some support for H2a. The more

participants endorsed intelligence-related stereotypes about the social group that the character they viewed belonged to, the lower they rated the character on intelligence.

The interaction was not significant for the White woman condition, suggesting that stereotype endorsement is not as important for intelligence ratings of these characters (see Figure 3.1). Table 3.3 shows additional contrasts for the interaction across conditions (estimated using the emmeans package in R). While there is no significant difference in the relationship between stereotype endorsement and intelligence ratings between White women and White men characters, stereotype endorsement was associated with significantly lower intelligence ratings for Black characters compared to White women characters.

Table 3.2. *Character intelligence ratings by condition and stereotype endorsement*

Character Intelligence Ratings			
<i>Predictors</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Intercept	0.93 *** (0.02)	0.96 *** (0.02)	0.94 *** (0.02)
Black Man Condition (BM)	-0.02 (0.02)	-0.02 (0.02)	-0.03 (0.02)
Black Woman Condition (BW)	-0.02 (0.02)	-0.02 (0.02)	-0.04 † (0.02)
White Woman Condition (WW)	-0.03 (0.02)	-0.04 † (0.02)	-0.04 † (0.02)
Seen Before	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)

Man Participant		-0.03 ***	-0.02 **
		(0.01)	(0.01)
White Participant		-0.01	-0.01
		(0.01)	(0.01)
Age		-0.00	-0.00
		(0.00)	(0.00)
Income		0.01	0.01 *
		(0.00)	(0.00)
Stereotype Endorsement (SE)			-0.00
			(0.06)
BM:SE			-0.25 ***
			(0.08)
BW:SE			-0.21 **
			(0.07)
WW:SE			-0.05
			(0.08)

Random Effects

σ^2	0.02	0.02	0.02
$\tau_{00 \text{ video}}$	0.00	0.00	0.00
ICC	0.02	0.02	0.02
N_{video}	12	12	12
Observations	953	936	936

Marginal R² / 0.01 / 0.03 .03 / .05 .08 / .09
 Conditional R²

† $p < .1$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 3.3. Additional contrasts for stereotype endorsement and intelligence rating slopes

Contrast	Estimate	SE	p value
BM-BW	-0.03	0.07	ns
BM-WW	-0.20	0.07	< 0.01
BW-WW	-0.16	0.07	< 0.05

Note. Estimates were obtained using the emmeans package in R.

Figure 3.1. Stereotype endorsement and character intelligence ratings by condition

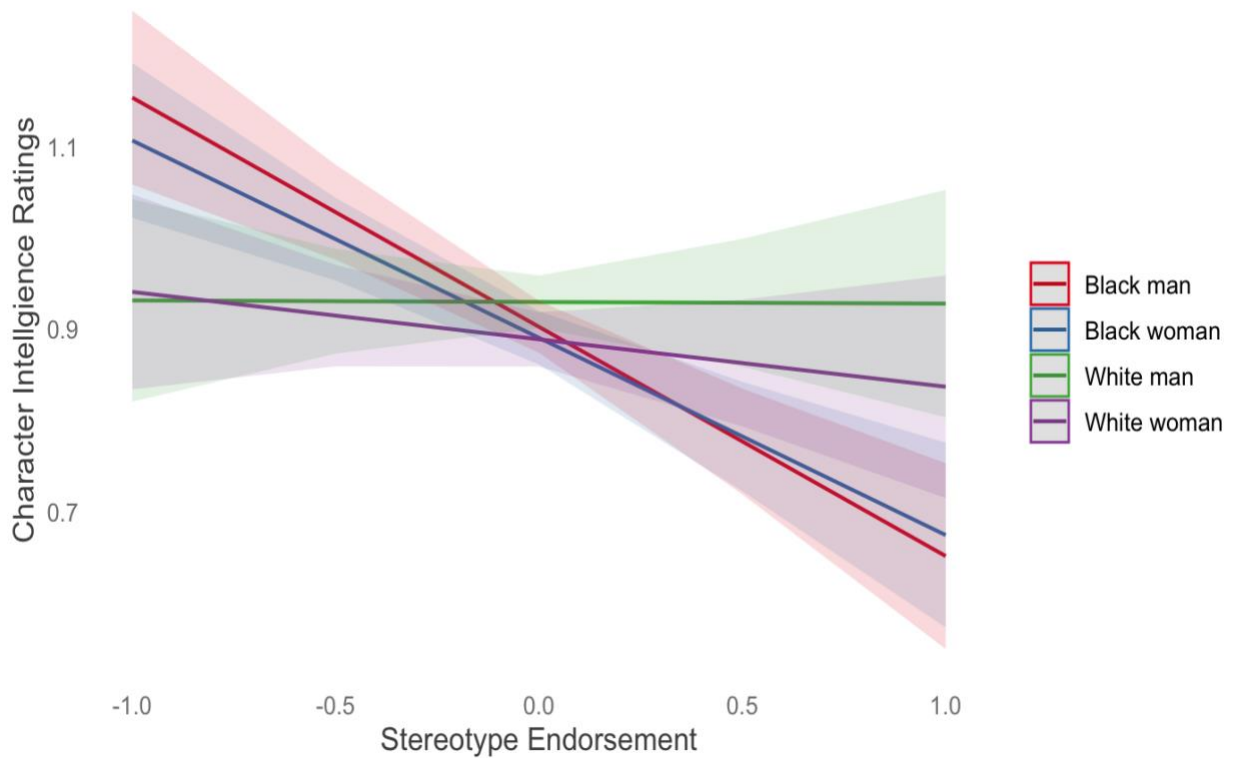


Table 3.3 shows the same models for genius ratings. Entering only condition and whether the participant has seen the show/movie before into the models, there is a marginally significant difference in genius ratings for the two woman character conditions compared to the White man character condition; these effects are significant when demographic controls are added to the model. White ($b = -.33, p < .05$) and Black ($b = -.32, p < .05$) women characters are rated significantly lower than White men characters, indicating a gender difference in perceptions of genius, providing some support for H1b.

Once again, the interaction between stereotype endorsement and condition in Model 3 indicates that stereotype endorsement significantly predicts lower genius ratings of Black men ($b = -.72, p < .05$) and Black women ($b = -.92, p < .01$) characters compared to White men characters. Stereotype endorsement does not significantly predict genius ratings for White women characters compared to White men characters (see Figure 3.2). Table 3.5 reveals that the relationship between stereotype endorsement and genius ratings does not differ between the Black men and Black women characters or between Black men and White women characters, but that stereotype endorsement predicts significantly lower genius ratings for Black women characters than it does for White women characters.

Table 3.4. Genius ratings by condition and stereotype endorsement

Character Genius Ratings			
<i>Predictors</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Intercept	2.47 *** (0.12)	2.71 *** (0.13)	2.69 *** (0.13)
Black Man Condition (BM)	-0.11 (0.17)	-0.12 (0.17)	-0.15 (0.16)
Black Woman Condition (BW)	-0.31 † (0.16)	-0.32 * (0.17)	-0.40 * (0.16)
White Woman Condition (WW)	-0.32 † (0.17)	-0.33 * (0.17)	-0.34 * (0.16)
Seen before	0.27 *** (0.05)	0.29 *** (0.05)	0.29 *** (0.05)
Man Participant		-0.07 † (0.04)	-0.05 (0.04)
White Participant		-0.11 * (0.04)	-0.11 * (0.04)
Age		-0.06 *** (0.00)	-0.06 ** (0.00)
Income		0.00 (0.02)	0.01 (0.02)
Stereotype Endorsement (SE)			0.15 (0.26)

BM:SE	-0.72 *
	(0.34)
BW:SE	-0.92 **
	(0.33)
WW:SE	-0.25
	(0.36)

Random Effects

σ^2	0.38	0.37	0.36
$\tau_{00 \text{ video}}$	0.04	0.04	0.03
ICC	0.09	0.09	0.09
N_{video}	12	12	12
Observations	953	936	936
Marginal R2 / Conditional R2	0.062 / 0.144	0.085 / 0.167	0.104 / 0.183

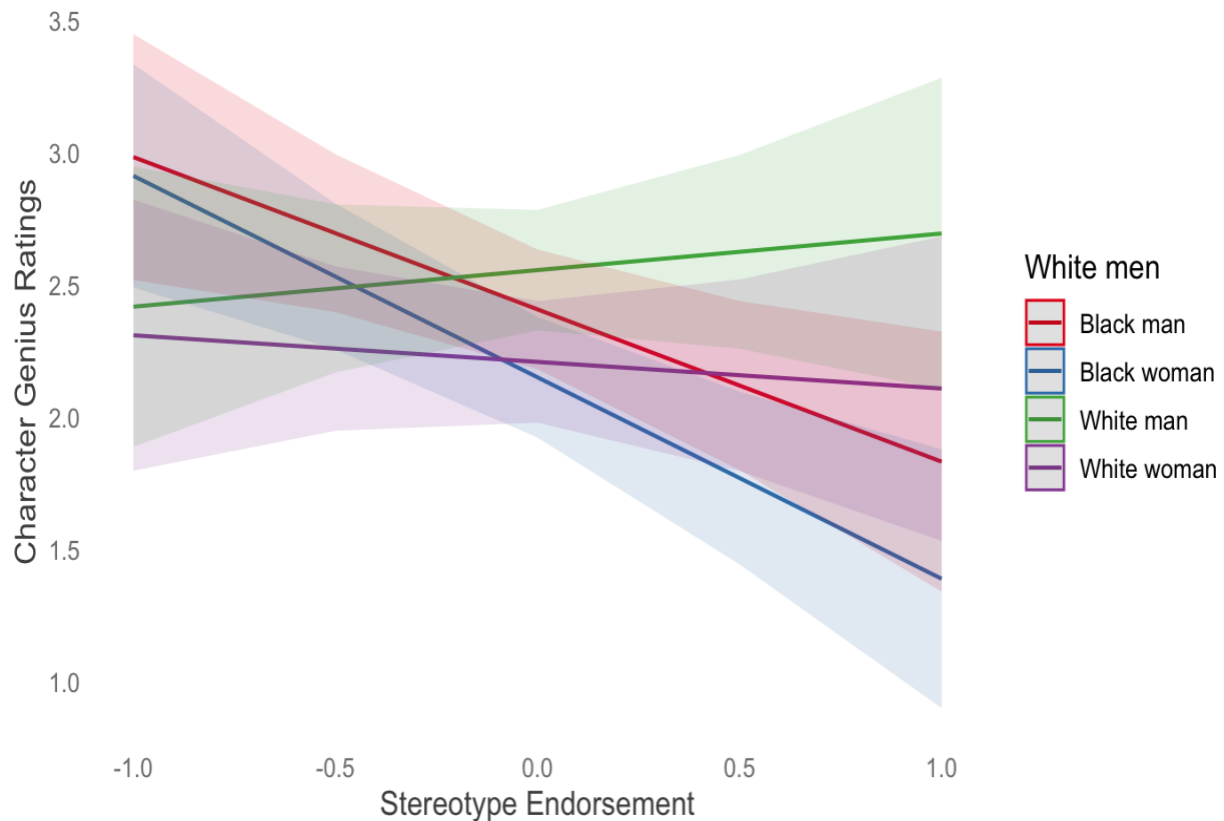
† $p < .1$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 3.5. Additional contrasts for stereotype endorsement and genius ratings slopes

Contrast	Estimate	SE	p value
BM-BW	0.20	0.29	ns
BM-WW	-0.48	0.33	ns
BW-WW	-0.68	0.32	< .05

Note. Estimates were obtained using the emmeans package in R.

Figure 3.2. *Stereotype endorsement and character genius ratings*



To examine RQ1, I start by estimating a series of linear mixed-effects models with non-intelligence-related traits that each character was rated on (see Table 3.6, first model for each trait). Black women were rated as more hardworking ($b = .09, p < .05$) than White men. Black women ($b = .31, p < .001$), White women ($b = .17, p < .05$), and Black men ($b = .24, p < .01$) were all rated as friendlier than White men. Black men ($b = .19, p < .10$) and women ($b = .17, p < .10$) were also rated marginally significantly higher on emotionality than White men. There were no significant differences between conditions for ratings of assertiveness.

Model 2 in Table 3.6 indicates that intelligence-related stereotype endorsement moderates the effect of condition on perceptions of the character as hardworking. For White men characters, increased stereotype endorsement is associated with an increase in ratings of the character being hardworking ($b = .21, p < .05$). Compared to White men, stronger stereotype endorsement leads to lower ratings of the character being hardworking for Black men ($b = -.41, p < .001$), Black women ($b = -.42, p < .001$), and White women ($b = -.30, p < .01$) characters.

Compared to White men ($b = .23, p < .05$), ratings of friendliness were significantly lower for Black women ($b = -.41, p < .01$) and marginally significantly lower for White women ($b = -.26, p < .10$) as stereotype endorsement increased. Black men were rated significantly lower than White men on assertiveness as stereotype endorsement increased ($b = -.31, p < .05$).²¹ These differences are not stereotype-consistent for the counter-stereotypical identities.

Table 3.6. *Non-intelligence-related trait ratings across condition*

<i>Predictors</i>	Hardworking		Assertive		Friendly		Emotional	
	<i>M1</i>	<i>M2</i>	<i>M3</i>	<i>M4</i>	<i>M5</i>	<i>M6</i>	<i>M7</i>	<i>M8</i>
Intercept	0.84*** (0.04)	0.84*** (0.04)	0.65*** (0.06)	0.65*** (0.06)	0.39*** (0.06)	0.43*** (0.06)	0.22** (0.08)	0.22** (0.08)
Black Man Condition (BM)	0.06 (0.04)	0.04 (0.04)	0.02 (0.07)	0.01 (0.07)	0.24** (0.08)	0.23** (0.08)	0.19† (0.10)	0.18† (0.10)
Black Woman Condition (BW)	0.09* (0.04)	0.06 (0.04)	0.02 (0.07)	0.01 (0.07)	0.31*** (0.08)	0.27*** (0.08)	0.17† (0.10)	0.16 (0.10)

²¹ No other pairwise comparisons of the stereotype endorsement slope across conditions were significant at the $p < .05$ level.

White Woman	0.06	0.04	0.06	0.06	0.17*	0.16 [†]	0.16	0.15
Condition (WW)	(0.04)	(0.04)	(0.07)	(0.07)	(0.08)	(0.08)	(0.10)	(0.10)
Seen before	0.01	0.01	0.06**	0.06**	-0.02	-0.02	0.05*	0.05*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Man Participant	-0.05***	-0.05***	-0.01	-0.01	-0.03*	-0.03*	0.02	0.02
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
White Participant	-0.03 [†]	-0.03 [†]	-0.06***	-0.06***	-0.02	-0.02	-0.02	-0.02
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
Age	-0.00	-0.00	0.02*	0.02*	-0.02*	-0.01*	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Income	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.02*	-0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Stereotype		0.21*		0.04		0.23*		0.13
Endorsement		(0.08)		(0.11)		(0.10)		(0.11)
(SE)								
BM:SE		-0.41***		-0.31*		-0.17		-0.17
		(0.11)		(0.14)		(0.13)		(0.14)
BW:SE		-0.42***		-0.09		-0.41**		-0.17
		(0.10)		(0.14)		(0.13)		(0.14)
WW:SE		-0.30**		-0.08		-0.26 [†]		-0.11
		(0.11)		(0.15)		(0.14)		(0.15)
Random Effects								
σ^2	0.04	0.04	0.07	0.06	0.06	0.06	0.06	0.06

τ_{00} video	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
ICC	0.06	0.05	0.09	0.09	0.13	0.13	0.18	0.18
N_{video}	12	12	12	12	12	12	12	12
Observations	936	936	936	936	936	936	936	936
Marginal R^2 /	0.05 /	0.08 /	0.03 /	0.04 /	0.18 /	0.19 /	0.08 /	0.09 /
Conditional R^2	0.11	0.13	0.12	0.13	0.29	0.30	0.25	0.25

*† p < .1 * p < 0.05 ** p < 0.01 *** p < 0.001*

As an initial exploration of RQ2, I examined open responses of character first impressions. Table 3.7 lists the 10 most frequently used words in order of frequency, excluding connector words (e.g., “and,” “the,” “is,” etc.) and the words “intelligent” and “smart” (which were the most frequent words used in all conditions). For those with higher stereotype endorsement, the most frequent words suggest an emphasis on confidence for the counter-stereotypical characters, which is stereotype-consistent for some social identities but not others (e.g., it is not stereotype-consistent for White women). Logic and ability are emphasized for the characters who are men, especially White men, while the theme of confidence, assertiveness, and determination/focus is more prevalent for the women characters. The gender of the character is also more salient for the women characters—both include “woman” as one of their most used words, whereas “man” (or its synonyms) does not appear among the high-frequency words for man characters.

For those with lower stereotype endorsement, logic, and ability are still emphasized in the man conditions, though logic is slightly deemphasized for White men compared to the high stereotype endorsement condition. Confidence, assertiveness, and gender continue to be

emphasized in the Woman conditions for those with lower stereotype endorsement, and mentions of being hardworking are prevalent for all counter-stereotypical characters. Mentions of White women being logical are more prevalent for this group, but mentions of logic are still absent from the Black woman condition.

Table 3.7. Top 10 words for character impressions excluding “intelligent” and “smart”

	White Men	Black Men	White Women	Black Women
<p>Higher SE</p> <p>(scores of 0 to 1)</p>	Logical Good Detective Able Things Attention Genius People Numbers Details	Good Logical Confident Hard People Able Really Win Lot Though	Confident Work Woman Assertive Knows Man Determined Young Play Hard	Confident Woman Friendly Good Win Focused Assertive Able Playing Young
<p>Lower SE</p> <p>(scores less than 0)</p>	Able Good Highly Things Logical Hard Extremely Emotion Friendly Serious	Good Able Logical Really Knows Work Great Problem Hardworking Details	Work Confident Assertive Job Logical Woman Hardworking Determined Good Hard	Confident Assertive Woman Knows Friendly Win Good Match Hardworking Work

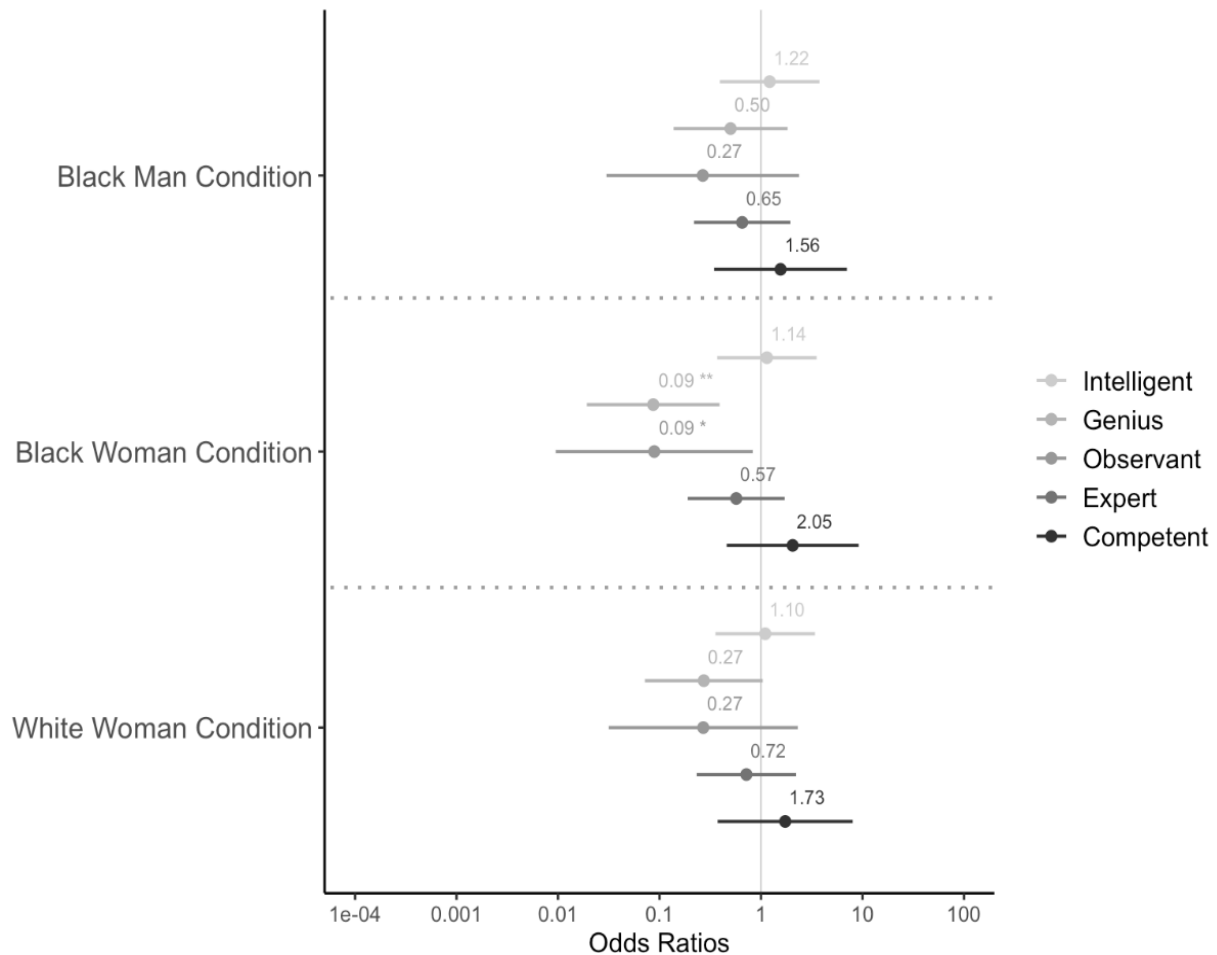
Note: Words are listed in order of frequency. Bold and same color denotes same frequency within cell.

To explore these differences further, I generated a series of logistic regression models with condition predicting the mention of various intelligence (Figure 3.3) and non-intelligence

(Figure 3.4) related traits. Each trait was coded as being present (1) or absent (0) in a participant's response. For each outcome, I modeled condition as a predictor, with demographic variables and having seen the show/movie before as control variables.

Black women characters were significantly less likely ($OR = .09, p < .001$) and White women were marginally less likely ($OR = .27, p = .06$) to elicit mentions of genius than White men. Black women were also significantly less likely to be described as observant ($OR = .09, p < .05$). There were no significant condition differences for the other intelligence-related traits when accounting for video-specific variance.

Figure 3.3. Odds ratios for spontaneously generated intelligence-related traits



Note: The White man condition is treated as the reference group.

Stereotype endorsement moderates the relationship between condition and mentions of intelligence but not the other intelligence-related traits (see Table 3.8).²² Higher stereotype endorsement increases the likelihood that intelligence will be mentioned for the White men characters ($OR = 6.64, p < .05$). Compared to White men characters, increased stereotype endorsement leads to a significantly lower likelihood of mentioning intelligence in impressions of Black men characters ($OR = .06, p < .05$), Black women characters ($OR = .08, p < .05$), and White women characters ($OR = .03, p < .05$).

Table 3.8. Odds ratios for mentions of intelligence by condition and stereotype endorsement

<i>Predictors</i>	Intelligent	
	<i>Odds Ratios</i>	<i>Odds Ratios</i>
(Intercept)	2.74 *	3.03 *
	(1.34)	(1.50)
Black Man Condition (BM)	1.20	1.03
	(0.70)	(0.60)
Black Woman Condition (BW)	1.13	0.95
	(0.65)	(0.55)
White Woman Condition (WW)	1.09	0.87
	(0.63)	(0.51)
Seen Before	1.27	1.28
	(0.25)	(0.25)

²² See Appendix B for interaction odds ratios for other intelligence-related traits.

Man Participant	0.90 (0.13)	0.90 (0.13)
White Participant	0.91 (0.14)	0.89 (0.14)
Age	0.99 (0.01)	0.99 (0.01)
Income	0.96 (0.07)	0.96 (0.07)
SE		6.64 * (6.21)
BM:SE		0.06 * (0.07)
BW:SE		0.08 * (0.10)
WW:SE		0.03 * (0.05)

Random Effects

σ^2	3.29	3.29
$\tau_{00\text{video}}$	0.44	0.43
ICC	0.12	0.12
N_{video}	12	12
Observations	936	936
Marginal R^2 / Conditional R^2	0.011 / 0.127	0.023 / 0.136

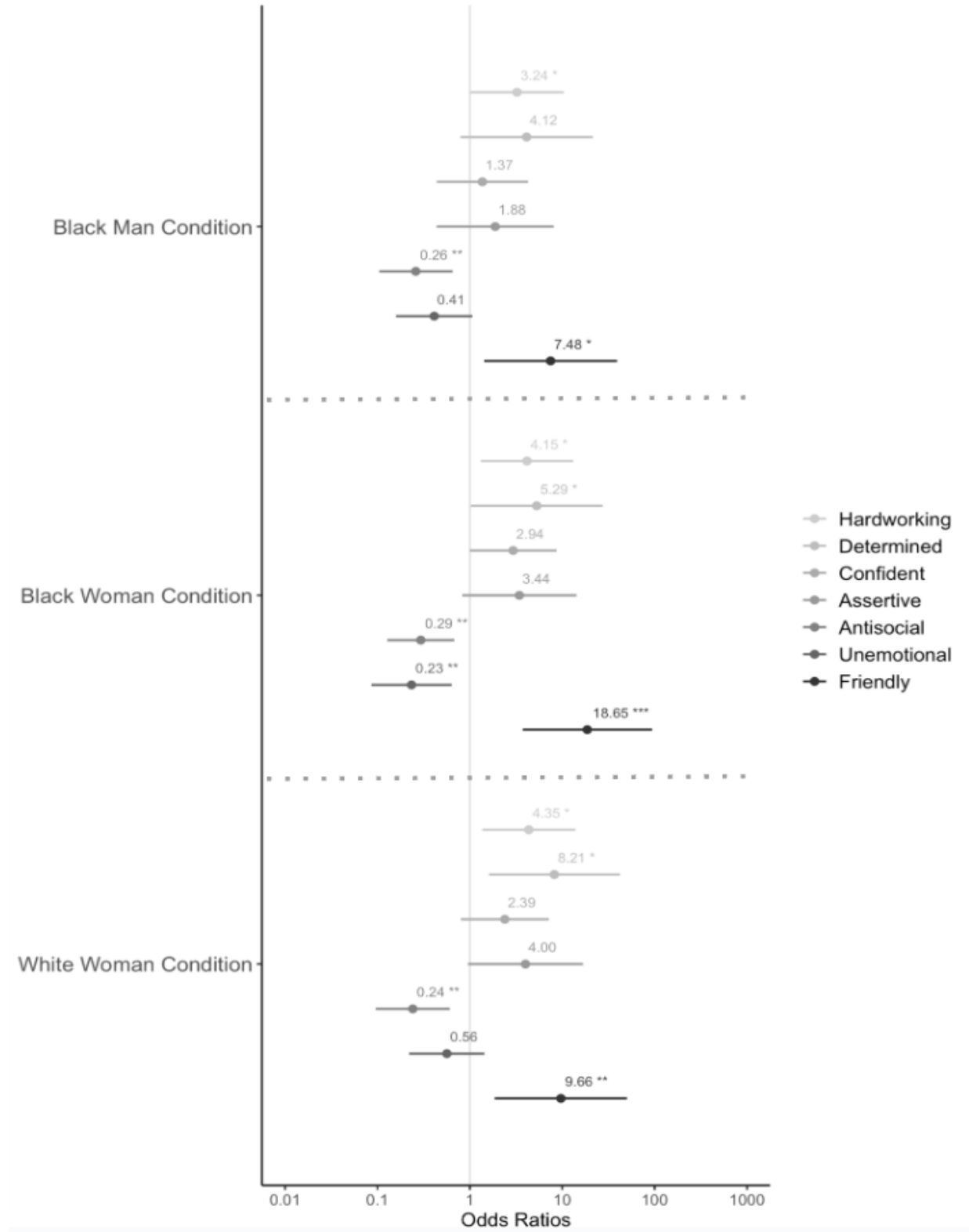
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Next, I tested whether there were condition-level differences in mentions of traits that were not explicitly intelligence-related. Mentions of being hardworking ($OR_{\text{Black men}} = 3.24, p < .05$; $OR_{\text{Black women}} = 4.13, p < .05$; $OR_{\text{White women}} = 4.33, p < .05$) and friendly ($OR_{\text{Black men}} = 7.46, p < .05$; $OR_{\text{Black women}} = 18.63, p < .001$; $OR_{\text{White women}} = 9.65, p < .01$) were significantly more likely while mentions of being antisocial ($OR_{\text{Black men}} = .31, p < .01$; $OR_{\text{Black women}} = .23, p < .001$; $OR_{\text{White women}} = .24, p < .01$) were significantly less likely for Black men, Black women, and White women compared to White men characters. Black women were significantly less likely ($OR = .23, p < .01$) and Black men were marginally significantly less likely ($OR = .41, p < .10$) to be described as unemotional.

Echoing some of the condition differences observed in the most frequently used words, mentions of being determined were significantly more likely for Black ($OR = 5.32, p < .05$) and White ($OR = 8.25, p < .05$) women. Black ($OR = 3.47, p < .10$) and White ($OR = 3.39, p < .10$) women were also marginally significantly more likely to be described as assertive. Black women were marginally significantly more likely to be described as confident ($OR = 2.96, p = .05$). Intelligence-related stereotype endorsement was not a significant predictor of these non-intelligence-related traits; there was no interaction between stereotype endorsement and condition.²³

²³ Participants were also given an opportunity to elaborate on why they did or did not consider the character to be a genius. See Appendix B for an analysis on these responses.

Figure 3.4. Odds ratios for spontaneously generated traits not directly related to intelligence



Note: The White man condition is treated as the reference group.

3.4 Study 2 Discussion

The current study demonstrates that existing cognitions, in this case, intelligence-related stereotype endorsement, are important for how characters are interpreted in entertainment narratives. People who more strongly endorsed the stereotype that White men are more intelligent than Black men and women rated Black characters lower on intelligence and were less likely to consider them to be geniuses, though the same was not true for White women characters. It is possible that stereotype endorsement about White women may not be applied as uniformly to White women exemplars as they are to Black exemplars. Perhaps the relative prevalence of White women in mainstream media over time has increased perceived variability for White women characters more than for Black characters. This may be further facilitated by the demographics of the sample; almost 69% of respondents were White, and thus more than half of the sample may have perceived White characters to be more heterogeneous due to the character's membership in a shared racial group with the participant.

While stereotype endorsement was not associated with differences in genius ratings between White women and White or Black men characters, those higher in stereotype endorsement were less likely to consider Black women characters to be geniuses than both White men and White women characters. Black women characters were also the least likely to elicit mentions of genius and being observant in an open response task, though this was not predicted by stereotype endorsement. Thus, intelligence-related stereotype endorsement in the way that I measured it did not have consistent effects on interpretation across all three counter-stereotypical characters.

Ratings of intelligence and logic can refer to a number of concepts that may differ subtly and might be hiding some nuance in the way that intelligence is ascribed across groups. Natural talent and learned competence may both elicit judgments of intelligence, for example, but one is more closely related to innate brilliance, while the other can refer to an ability to complete skilled tasks that may not be associated with this kind of intellectual ability.

It is also possible that the set of concepts that are captured by intelligent and logical trait ratings is more inconsistent with social stereotypes of Black men and women than those of White women. In defining stereotypes across gender and ethnic groups, Ghavami & Peplau (2013) found that “unintelligent” was one of the most frequently listed attributes for Black men and Black women, while the same was not true for White women (indeed, “intelligent” was one of the attributes that were listed for them in the 2013 study, though less frequently than it was for White men). So, while (especially innate) intelligence is more stereotype-consistent for White men than White women, intelligence as a general concept may also be included in a stereotype-consistent understanding of White women, whereas Black men and women may be explicitly stereotypically associated with a lack of intelligence.

Although the association between stereotype endorsement and judgments of intelligence was only significant for Black characters in the prompted ratings, it was present for all three counter-stereotypical characters in the open response analysis. Compared to judgments of the White men characters, people who endorsed the White man brilliance stereotype were less likely to mention the intelligence of a counter-stereotypical character in their first impressions of them. This inconsistency between open and closed-ended responses raises the possibility that spontaneously generated impressions of a character could reveal differences that might not appear in responses to more explicit questions.

Open responses may be more useful in capturing what might be akin to Nicholas and colleagues' (2022) concept of "stereotype representativeness: the prevalence of a stereotype dimension in perceiver's spontaneous beliefs about a social group" (p. 2). While stereotype representativeness refers to the relevance of established dimensions in psychological models of stereotyping, such as the stereotype content model, a similar concept might be applied to the relevance of specific traits. In this case, open responses may be more sensitive in capturing the extent to which judgments of intelligence are called to mind as relevant for each of the character identity categories before they are prompted to provide intelligence ratings. Perhaps stereotypes that are weaker or those that a participant is more motivated to push back against will not be captured by a trait rating task but may show up in the thoughts that are initially generated about a person or a character. Social desirability may also have more of an impact on responses to prompted questions than general thought listings. Future research should work to establish whether there is a true difference in the kinds of cognitions that are more effectively captured by one method versus the other.

Open responses also indicated that the gender of the character seemed to be more salient for women characters than men characters. It is possible that the intelligent character's gender stood out to participants as unusual when they were a woman, making it more relevant to their spontaneously-generated first impressions. While many participants tended to note that the character in the clip that they viewed was intelligent/smart across conditions in the open responses, there also seemed to be a gender-based difference in the use of logic and ability-themed words in these impressions. Compared to White men, mentions of the character being a genius were significantly less likely for women characters, especially for Black women characters, who were also less likely to be described as observant. This is consistent with both

the greater ability/competence-related traits that are stereotypically ascribed to White men and the tendency for more negative perceptions to be directed toward Black women, who are a doubly marginalized group.

At the same time, hard work, assertiveness, and confidence were emphasized for the women characters—among both higher and lower stereotype-endorsing participants. Compared to impressions of the White men characters, impressions of Black and White women were more likely to include mentions of being hardworking, determined, and friendly. Though some of these traits map onto traditional stereotypes for women, others do not.²⁴ Mentions of hard work and friendliness were also more prevalent in impressions of Black men characters compared to White men characters, which is not necessarily consistent with social stereotypes. These differences could indicate perceptions of traits that compensate for an assumed lower level of natural ability. Hard work, confidence, and assertiveness may help to rationalize the fact that these characters are in roles that require a high level of intelligence without the need to ascribe to them the natural intelligence that is associated with these roles. It is also possible that, just as the character's gender may have been especially salient for women characters because it was unexpected, stereotype-inconsistent traits may stick out more when evaluating these characters.

Though I saw significantly different ratings on other stereotype-relevant traits by condition, intelligence-related stereotype endorsement only negatively predicted mentions of intelligence for counter-stereotypical characters in the open responses. This suggests that interpretation differences may be specific to a particular cognition rather than generalizing to other unrelated (or even related) stereotypes. In the prompted trait ratings, however, intelligence-

²⁴ Assertiveness and confidence can be interpreted to be consistent with stereotypes about Black women, for example, but not those about White women.

related stereotype endorsement also predicted lower ratings of counter-stereotypical characters being hardworking (which is consistent with the fact that being hardworking was most often mentioned in open responses from individuals with low stereotype endorsement) and lower friendliness ratings for women characters. Both of these relationships were the opposite of what I expected. More work is needed to make sense of the varied relationships found between intelligence stereotypes and beliefs about other stereotypical traits.

My study design is not without limitations. While multiple clips were used for each (character) social identity to increase generalizability and decrease the chances that results are driven by one particular story or character, the clips were from different TV shows/movies and thus were not perfectly comparable across condition. Modeling video clip-specific variance in my analyses should account for some of this limitation, but future studies should work to replicate these findings with different videos.

Additionally, the current measure of intelligence-related stereotype endorsement does not distinguish between different kinds of intelligence that may be associated with different social groups. For example, Eagly and colleagues (2020) found that perceptions of women's competence increased over time (which sometimes includes the term/concept of intelligence). Further, among respondents (regardless of gender) who reported perceiving a gender difference, women were actually rated as more competent than men. The authors attribute this to the changing social roles of women as they entered the workforce. However, women also continue to be perceived as more communal/relationship-oriented and less agentic than men. This highlights the complexities of cultural stereotypes and how they change over time. It is possible that my measure of perceptions of intelligence is too general to precisely capture the type of intelligence

that I focus on in this paper (the kind associated with natural brilliance) without also capturing the type of low-agency competence that is not usually associated with White men.

Overall, Study 2 provides preliminary evidence that entertainment narratives are interpreted with existing cognitions in mind. Though the way that this works out in reference to stereotyping of different social groups is complex and warrants further examination, my results suggest that the beliefs and schemas a viewer holds can influence how they view a counter-stereotypical character, which may then impact their understanding of the story and overall evaluation of it. This is important to consider in modeling narrative comprehension/influence and designing persuasive narrative messages. People likely selectively attend to elements of a story that are consistent with their own views and/or they fill in gaps in character and story understanding with existing cognitions as the narrative unfolds. Thus, differential and potentially biased interpretations may undermine some of this potential for combating social stereotypes on a large scale.

There is content, however, that may be unambiguous in its presentation of counter-stereotypical characters and thus may not lend itself easily to re-interpretation. Could these representations be more influential for those who endorse the subverted stereotype? My next study examines the mechanisms by which these less ambiguous representations may still not be applied to one's understanding of the real world, particularly through judgments of (un)realism.

Chapter 4 —Study 3: Discounting Counter-Stereotypical Representations

4.1 Motivated Cognition and Message Discounting

As reviewed in the previous study, all new information is understood in the context of existing knowledge. Thus, it is likely that information that does not fit with the rest of one's knowledge structures will be reinterpreted or discounted (e.g., Huckfeldt, 2004). In addition to biased information search, one can attend to information that goes against previously held beliefs, recognize it as challenging or counter-attitudinal, and discount the information for various reasons. For example, biased assimilation refers to a tendency to (dis)credit evidence selectively based on whether it is congruent with the goal that is driving the motivated cognition (in this case, a goal to maintain existing knowledge structures; Lord et al., 1979; Kahan, 2017). Likewise, one can engage in identity-protective cognition, which describes the tendency for individuals to dismiss or otherwise demonstrate reactance to information that causes cognitive dissonance or anxiety (Kahan, 2017; Sherman & Chen, 2006). While motivated cognition can reflect a variety of motivations, my focus is on motivated processing in response to a defense motivation, or a motivation to come to conclusions that are congruent with one's "perceived material interests or self-definitional beliefs" (Chen, et al., 1999, p. 45; see also: Chaiken, et al., 1996).

Like selective exposure, motivated cognition is well documented, especially as it relates to political partisanship. Taber and Lodge (2006) show that people tend to take longer to respond when given counter-attitudinal information (indicating more active thought) compared with pro-

attitudinal information (which people tend to accept unquestioningly). Similarly, in a study on the perception of scientific consensus among participants with different value orientations (hierarchical/individualistic v. egalitarian/communitarian), Kahan and colleagues (2011) show that participants selectively recall experts that agree with their values, and that they perceive these scientists to be more knowledgeable and trustworthy than those who did not agree with their values. In addition, they found that people listed more thoughts in a thought-listing task when presented with counter-attitudinal information, and most of the thoughts listed were denigrating.

Motivated cognition is also well supported with other types of information not explicitly related to partisanship. For example, one study (Kunda, 1987) found that a health message linking caffeine consumption to breast cancer inspired more criticism in coffee drinkers compared with non-coffee drinkers, but that coffee drinkers more readily accepted evidence against the link. Another study (Cohen et al., 2000) showed that proponents of the death penalty were more critical of a scientific report stating the ineffectiveness of the death penalty in deterring crime, allowing them to maintain their support for capital punishment. In sum, we have a tendency to preserve existing beliefs, especially if they are important to our self-concept.

4.2 Perceived Persuasive Intent

Theoretically, some of the processes that lead to motivated cognition should be less pronounced when consuming narratives for entertainment compared to other forms of persuasive messaging. The more subtle messages embedded in narratives are thought to reduce counterarguing and be less likely to lead to resistance (Moyer-Gusé, 2008). This is in part because an intention to persuade is not at the forefront of the message experience. Instead, people tend to focus on the characters and plot of the story. This facilitates transportation,

emotional engagement, and involvement with story characters which further distracts from perceptions of persuasive intent and leaves fewer cognitive resources for counterarguing (Busselle & Bilandzic, 2008; Dal Cin et al., 2004; Green & Brock, 2000; Kreuter et al., 2007; Moyer-Gusé, 2008). Due to this ability to imply persuasive material “under the radar” (Dal Cin et al., 2004, pg. 187), narratives should be particularly effective in changing attitudes or beliefs that are strongly held (such as those intertwined with political identity or intergroup attitudes) which tend to lead to reactance and defense motivations (Brehm, 1966; Hart et al., 2009; Moyer-Gusé & Nabi, 2010).

However, the demonstrated lower levels of reactance and counterarguing do not necessarily mean that such strategies are absent in the narrative persuasion process. There are a number of conditions that may lead narrative consumers to perceive persuasive intent in entertainment. For example, content that is perceived to be political and/or divisive can invoke threat and perceived persuasive intent (e.g., Simons & Green, 2018). Topics related to social identity can also invoke threat and reactance (e.g., de Lemus et al., 2015). Such material is often embedded within narratives, perhaps even merely by association, as when diverse representation alone cues liberal politics (Becker, 1998) that can inspire reactance in non-liberal consumers. Thus, counter-stereotypical representations may cue a political orientation or persuasive intent, especially for people who perceive these representations to be controversial or threatening (e.g., those who endorse the stereotypes that are being challenged).

H1: When presented with a counter-stereotypical representation, higher stereotype endorsement will lead to increased perceptions of persuasive intent.

4.3 Realism Judgments as an Obstacle to Narrative Persuasion

In addition to perceptions of persuasive intent, societal stereotypes may interfere directly with reality judgments of a counter-stereotypical exemplar in a story. Since representations in entertainment media are often fictional, it is easier for people to dismiss a story or representation as made up and unrealistic. Fictional narratives can be as influential as real narratives (Green & Brock, 2000), but the extent to which they are evaluated as realistic (even if not "true") is an essential part of the persuasive process. Busselle and Bilandzic (2008) distinguish between three types of realism in a fictional story: fictionality, external realism, and narrative (or internal) realism. Fictionality is the individual's knowledge that the story is made up. External realism refers to the extent to which a fictional story matches with the real world. Narrative realism refers to coherence within a story.

Although research finds that fictionality does not affect narrative processing (e.g., Green & Brock, 2000), violations of external realism and/or narrative realism do disrupt processing. Busselle and Bilandzic (2008) argue that awareness of inconsistencies "undermine[s] a narrative's potential to entertain, persuade, or enlighten," (p. 256) in part due to the distribution of cognitive resources. According to their model, in observing incompatibility (either with the real world and/or with the rest of the story), some of an individual's cognitive resources have to go toward critical evaluation of the story. Therefore, fewer resources can be allocated to constructing the mental model used to understand the story—ultimately leading to decreased engagement with the narrative.

In sum, it is posited that potential obstacles to narrative persuasion typically occur between the comprehension and engagement phases of narrative processing. Once the viewer starts building the situation model, the primary potential determinant of narrative engagement

and transportation (which could then lead to prosocial outcomes) are realism judgments. As we acquire new information, we can either accept that information as part of our mental model or dismiss it as too incompatible with our knowledge and/or experience. In the case of narrative exemplars, if we have accessed stereotypical beliefs to fill in character gaps and we are then confronted with counter-stereotypical information about the character, it is possible that we will find the representation to be incompatible with our understanding of the world and therefore dismiss it as unrealistic.

H2: When presented with a counter-stereotypical representation, higher stereotype endorsement will lead to decreased perceptions of external realism (i.e., perceived match to the real world).

Research has shown that perceptions of persuasive intent can interfere with processing and produce resistance, especially for people who are more invested in the topic (Benoit, 1998; Bilandzic & Busselle, 2013; Dillard & Shen, 2005; Knowles & Linn, 2004; Petty & Cacioppo, 1979; Wood & Quinn, 2003). We expect that this might extend to judgments of external realism of a narrative:

H3: An increase in perceptions of persuasive intent will be associated with decreased external realism judgments.

4.4 Stereotypes, Comprehension Goals, and Judgments of Typicality

There are many factors that go into realism judgments, but one that is particularly relevant for counter-stereotypical portrayals is judgments of typicality. Shapiro and Chock

(2003) contend that people do not expend much effort to evaluate the realism of a story but rather use heuristics that may provide a sufficiently good idea of realism. They suggest that the perceived typicality of information in the narrative can act as one such heuristic. Thus, evaluations of how typical story characters or events are may be related to realism and, by extension, engagement and narrative influence.

I define perceived typicality as judgments of how common or usual a particular story event or character representation is. Shapiro and Chock (2003) contend that narratives are made up of a mixture of typical and atypical elements and define atypical elements as “items that are plausible but not a necessary or usual part of the story” (p. 198). This is different from perceived realism which deals with what we perceive to actually exist in the real world and not what is likely to happen. For example, natural disasters are real, but they are not common. So, while they are events that could happen in real life (perceived realism), they do not usually happen (perceived typicality).

The extent to which someone judges a story or exemplar to be typical will likely depend on the prior knowledge that they draw on to fill the gaps in a story as it unfolds. When applied to counter-stereotypical character representations, this could have interesting consequences. Research shows that, upon initial exposure to a member of a marginalized group, stereotypes about that group are activated (Kunda et al., 2002; 2003). Since we often use stereotypes (and other types of schemas) to fill in or resolve ambiguous information (e.g., Förster & Liberman, 2007), if we are introduced to an exemplar of a stereotyped group in a story, we will first fill the gaps in our understanding using existing stereotypes. Although some evidence suggests that these stereotypes dissipate as we gain individuating information over the course of a personal

interaction (e.g., Kunda et al., 2002), they may be resurfaced when it is perceived as relevant to the situation or when a sensitive discussion topic comes up (Kunda et al., 2003).

Research in interpersonal interactions reveals that we are especially likely to apply stereotypes if they serve a comprehension goal or if other attributes of the situation make the stereotype salient (Kunda & Spencer, 2003, Kunda et al, 2003). When a story is unfolding, we are motivated to comprehend the situations and characters that we encounter. Especially at the beginning of a story, there is much ambiguity, and one must acquire more and more detail about the setting and characters. Existing knowledge structures, including stereotypes, are especially likely to be retrieved to resolve this ambiguity (Förster & Liberman, 2007). In addition, comprehension goals can further be heightened when we encounter unexpected information (e.g., Wong & Weiner, 1981). If the events in a story or a character's behavior is judged to be unexpected (or atypical), this could increase comprehension goals (i.e., prompt a search for an explanation) which may be served by marshaling social stereotypes to explain the behavior.

Judgments of typicality can undermine the stereotype reducing impact of counter-stereotypical exemplars in a couple of ways. Rothbart and John (1985) argue that stereotype change is driven by perceived typicality of an exemplar. Perceived atypicality can provide a justification for subtyping an exemplar instead of integrating them into judgments about the stereotyped group (Hewstone et al., 2000). For example, Bodenhausen and colleagues (1995) showed that exposure to positive media exemplars of successful Black individuals lead to increased perception of discrimination against Black people among White participants, but only if they were perceived to be typical members of their social group. If the exemplar is judged to be atypical, these individuals may be grouped into a newly formed cognitive structure that will accommodate rather than change existing stereotypical beliefs, and thus will not be effective in

engendering salutary attitudinal outcomes. This occurs when people see the counter-stereotypical individuals as an exception to the rule rather than adjusting their stereotypical perceptions (Hewstone, 1994), and is especially likely to happen when exemplars are concentrated in a smaller group of highly counter-stereotypical members (Hewstone et al., 2000; Johnston & Hewstone, 1992; Weber & Crocker, 1983).

Beyond subtyping, exemplars that are judged to be atypical can also be dismissed entirely as fake and/or unrealistic. While subtyping can apply to intergroup interactions more broadly, questioning the realism of a particular representation tends to be a more media-specific issue. Research has shown that perceived typicality and perceived realism are intimately connected. For example, Shapiro and Chock (2003) manipulated the typicality of information in a soap opera and a news story and found that an increase in typicality was associated with an increase in perceived realism. They also found that viewers are able to make these judgments moment to moment and that these continuous judgments were also related to story typicality.

If typicality is used as a heuristic for realism, a decrease in judgments of character typicality will result in decreased perceived realism of the story. It follows that stereotype-inconsistent qualities or events in a story featuring a stereotyped group member may register as atypical and thus decrease perceptions of perceived realism, ultimately hindering engagement and story-relevant outcomes. While Shapiro and Chock (2003) specifically look at the typicality of events in a story, it is likely that judgments of the typicality of a particular character will also impact realism judgments of both the character and the story as a whole.

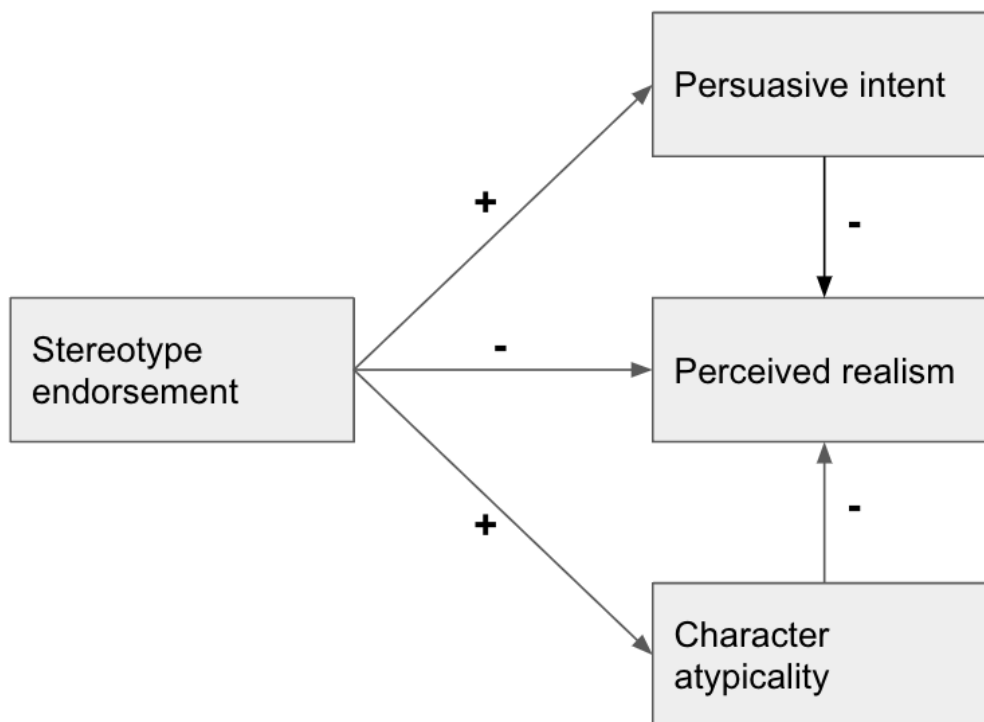
H4: When presented with a counter-stereotypical representation, higher stereotype endorsement will lead to increased perceptions of character atypicality.

H5: An increase in perceived character atypicality will be associated with decreased realism judgments.

Figure 4.1 illustrates the hypothesized relationships for counter-stereotypical representations. While these mechanisms should work similarly across different social groups, it is possible that the hypothesized relationship may vary in size and significance between them.

RQ1: Do the hypothesized relationships vary based on the gender and racial identity of the counter-stereotypical character?

Figure 4.1. Theoretical model of hypothesized relationships for counter-stereotypical representations



4.5 Method

4.5.1 Stimuli

Stimuli for the study were four video clips from existing American TV shows or movies featuring highly intelligent characters. Each video featured a genius character from a different social group (White man, White woman, Black man, Black woman). Clips were chosen based on ratings of character intelligence, clip quality, and the clip's ability to hold participants' attention, measured in Study 2. I chose one clip for each social identity category. All characters were judged to be highly intelligent²⁵ (Mean_{Black Man} = .95, SD_{Black Man} = .10; Mean_{Black Woman} = .89, SD_{Black Woman} = .17; Mean_{White Man} = .93, SD_{White Man} = .11; Mean_{White Woman} = .91, SD_{White Woman} = .12) and likely to be a "genius"²⁶ (Mean_{Black Man} = 2.49, SD_{Black Man} = .63; Mean_{Black Woman} = 2.45, SD_{Black Woman} = .68; Mean_{White Man} = 2.43, SD_{White Man} = .50; Mean_{White Woman} = 2.34, SD_{White Woman} = .65). While the clips did differ significantly in the judgment of their quality (*Kuskal-Wallis Chi-squared* = 10.54, *df* = 3, *p* = .01) this was in favor of the counter-stereotypical conditions. Since higher quality might presumably be associated with higher levels of perceived realism, this difference biases results against and not towards the hypothesized relationships. In addition, the clips did not differ in their ability to hold the attention of respondents (*Kuskal-Wallis Chi-squared* = 3.85, *df* = 3, *p* = .28) based on their self-reports in Study 2.

This produced a set of clips that were comparable in their tendency to elicit judgments of intelligence and genius-level ability, as well as in their ability to hold a viewer's attention. All of

²⁵ On a scale of 0-1

²⁶ On a scale of 1-3

the characters in the clips used for this study should be judged to be highly intelligent and are thus presumably less ambiguous (and leave less room for reinterpretation of counter-stereotypical characters) than the other clips used in Study 2.

4.5.2 Procedure

One thousand participants were recruited through CloudResearch (connected to Amazon Mechanical Turk) to complete a two-part survey. Demographics are displayed in Table 4.1. The first part assessed endorsement of intelligence-related gender and race stereotypes. The second presented each participant with one of the short (< 2 minute) clips described above. The social identity of the highly intelligent character they saw (Black Woman, Black Man, White woman, or White man) was randomized. Respondents then answered a number of questions about their perceptions of character typicality, persuasive intent, and story realism. Measures are described in more detail below.

Table 4.1. Study 3 sample demographics

	Total (N = 1000)
Gender	
Man	456 (45.6%)
Woman	533 (53.3%)
Non-binary/gender fluid or not listed	11 (1.1%)
Age	
Mean (SD)	40.4 (11.8)
Median [Min, Max]	38.0 [19.0, 77.0]

Missing 5 (0.5%)

Race

American Indian or Alaska Native 3 (0.3%)

Asian 58 (5.8%)

Black or African American 97 (9.7%)

Hispanic/Latinx 66 (6.6%)

Mixed race 36 (3.6%)

Native Hawaiian or Pacific Islander 1 (0.1%)

Race not listed 3 (0.3%)

White 736 (73.6%)

Education

Less than high school 6 (0.6%)

High school graduate 117 (11.7%)

2-year degree 100 (10.0%)

4-year degree 368 (36.8%)

Some college 211 (21.1%)

Professional degree 30 (3.0%)

Some graduate school 17 (1.7%)

Master's and/or Doctorate 151 (15.1%)

Income

Less than \$25,000 144 (14.4%)

\$25,000-\$59,999 359 (35.9%)

\$60,000-\$99,999 313 (31.3%)

More than 100,000 182 (18.2%)

4.5.3 Analysis Plan

To examine my hypotheses and research questions, I conducted both regression and path analyses. Regression analyses test each relationship hypothesized above, while path analyses examine the relationships together as a system. Path analyses also allow me to explore differences in this set of relationships depending on the social identity of the character viewed. Measures for these analyses are described in more detail below.

4.5.4 Measures

Stereotype endorsement. Stereotype endorsement was assessed using the same trait rating measure that was used in Study 2. Participants were once again presented with 16 faces of different races/genders and asked to indicate the extent to which each person could portray 5 different traits in a television show, two of which were intelligent and logical. Once again, when participants were assigned to see a protagonist who is not a White man (i.e., a counter-stereotypical representation), intelligence-related stereotype endorsement was calculated as the difference between a participant's average ratings for the two intelligence-related traits given in response to faces that represent the social category of the main character they were randomly assigned to view, and their average ratings for intelligence-related traits given in response to White men's faces.

When participants were assigned to see a White man protagonist, the stereotype endorsement variable was either equal to 0 or to an overall stereotype endorsement score, depending on the analysis. First, for regression analyses, it was equal to 0, as the hypotheses

contrast the stereotypical representation to the counter-stereotypical representations.²⁷ This calculation resulted in a variable that reflects intelligence-related stereotype endorsement for the particular counter-stereotypical social group that a participant saw in the video clip (and subsequently gave intelligence ratings for) with those who saw the stereotypical social group as a reference. The resulting variable ranges from -1 to 1 with increasing values indicating greater stereotype endorsement.

Second, for path analyses, stereotype endorsement among participants assigned to see the White man character was equal to the difference between the average of the participant's intelligence-related trait ratings in response to all of the faces that are not White men and their intelligence-related trait ratings in response to White men's faces. This was done in order to test the system of relationships among participants who saw a White man character, as a basis of comparison against which to test that system among participants who saw the counter-stereotypical characters, thereby exploring RQ1.

Character Atypicality. Perceptions of character typicality were measured using three items that I adapted from Kunda and Oleson (1995) and Graesser and colleagues (1980). They were averaged together into a single character atypicality variable that ranges from 0 to 5 with increasing values indicating increasing atypicality, or less typicality (*Cronbach's* $\alpha = 0.79$). See Appendix C for survey items.

²⁷ Note that the pattern of results in the OLS regressions does not change if stereotype endorsement for those in the White man condition is set to average stereotype endorsement instead of to 0, and that stereotype endorsement does not predict any of the outcomes in the White man condition when it is calculated in this way.

Perceived Persuasive Intent. Perceived persuasive intent was measured using an adaptation of Dimension 2 of the Politically Relevant Media Scale (Coles, 2020). I used 2 of the 4 items in this dimension and averaged them together into a single indicator ranging from 1 to 4 (*Pearson's* $r = 0.66$).

Perceived Realism. Perceived realism was measured using Busselle and Bilandzic's (2008) external realism scale. Items were averaged together into a realism variable that ranged from -1 to 1 (*Cronbach's* $\alpha = 0.84$).

Demographic controls. Again, I selected a few key demographic variables to use as controls: gender, age, race, education, and income. Age was re-coded by decade into a scale from 1-7, education was re-coded to range from 0-7 (less than high school to masters and/or doctorate), and household income was re-coded to range from 0 to 3 (less than 25K to over 100K).

4.6 Analysis and Results

First, I estimated a series of OLS regressions to examine the hypothesized relationships independent of one another. Table 4.2 shows models testing the impact of stereotype endorsement on perceived persuasive intent, realism and atypicality judgments of counter-stereotypical characters. As predicted, stereotype endorsement is positively associated with perceived persuasive intent ($b = .45, p < .05$) and character atypicality ($b = 1.59, p < .001$) and negatively associated with external realism judgments ($b = -.46, p < .001$) for counter-stereotypical characters. Compared to those with lower stereotype endorsement scores, participants who more strongly endorse intelligence-related stereotypes tended to perceive greater persuasive intent and character atypicality, and lower story realism when viewing a counter-stereotypical character, supporting Hypotheses 1, 2 and 4.

Table 4.2. OLS regression models predicting perceived persuasive intent (PPI), realism, and atypicality

	PPI	Realism	Atypicality
<i>Predictors</i>	<i>Estimates</i>	<i>Estimates</i>	<i>Estimates</i>
Intercept	1.58 *** (0.12)	0.30 *** (0.05)	2.14 *** (0.14)
Stereotype Endorsement (SE)	0.45 * (0.22)	-0.46 *** (0.08)	1.59 *** (0.26)
Seen Before	0.24 † (0.12)	0.01 (0.05)	0.90 *** (0.14)
Man participant (vs. all others)	0.03 (0.07)	-0.08 ** (0.03)	0.11 (0.08)
White participant (vs. all others)	-0.01 (0.08)	-0.04 (0.03)	-0.02 (0.09)
Education	0.06 ** (0.02)	-0.01 (0.01)	0.01 (0.02)
Income	-0.06 † (0.04)	0.03 * (0.01)	-0.06 (0.04)
Age	0.11 *** (0.03)	0.00 (0.01)	0.13 *** (0.03)
Observations	993	993	993
R ² / R ² adjusted	0.033 / 0.026	0.048 / 0.041	0.089 / 0.082

† $p < .1$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 4.3 shows that perceived persuasive intent ($b = -.03, p < .05$) and perceptions of character atypicality ($b = -.03, p < .05$) are associated with decreased realism judgments, supporting H3 and H5. To further examine the potential mediating role of perceived persuasive intent and atypicality in the relationship between stereotype endorsement and perceived realism, Models 2 and 4 include an interaction term between stereotype endorsement and each of these variables. There is a significant interaction between stereotype endorsement and atypicality ($b = -.12, p < .05$), but not perceived persuasive intent. These indirect relationships will be further explored by a path analysis.

Table 4.3. OLS regressions predicting realism judgments with PPI and atypicality

<i>Predictors</i>	Realism			
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Intercept	0.38 *** (0.05)	0.35 *** (0.05)	0.50 *** (0.05)	0.48 *** (0.05)
Perceived Persuasive Intent (PPI)	-0.03 * (0.01)	-0.03 * (0.01)		
Atypicality			-0.08 *** (0.01)	-0.08 *** (0.01)
Seen Before	0.02 (0.05)	0.02 (0.05)	0.09 † (0.05)	0.08 † (0.05)
Man Participant	-0.09 *** (0.03)	-0.08 ** (0.03)	-0.08 ** (0.02)	-0.07 ** (0.02)
White participant	-0.04 (0.03)	-0.05 (0.03)	-0.04 (0.03)	-0.05 † (0.03)

Education	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Income	0.02 † (0.01)	0.03 † (0.01)	0.02 (0.01)	0.02 (0.01)
Age	0.00 (0.00)	0.01 (0.00)	0.01 (0.00)	0.01 (0.00)
Stereotype Endorsement (SE)		-0.30 † (0.17)		-0.02 (0.18)
SE x PPI		-0.07 (0.07)		
SE x Atypicality				-0.11 * (0.06)
Observations	993	993	993	993
R ² / R ² adjusted	0.025 / 0.019	0.054 / 0.045	0.085 / 0.078	0.103 / 0.095

† $p < .1$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

To test the system of relations shown in Figure 4.1 together, I now turn to path analysis. The Lavaan package in R was used to specify the model using maximum likelihood procedure with all variables being entered as observed. Though not shown in the diagram below to reduce clutter, I specified paths from each of my demographic variables (gender, race, age, education, and income) to stereotype endorsement, perceived persuasive intent, character atypicality, and perceived realism. I also specified correlations between income and other demographic variables

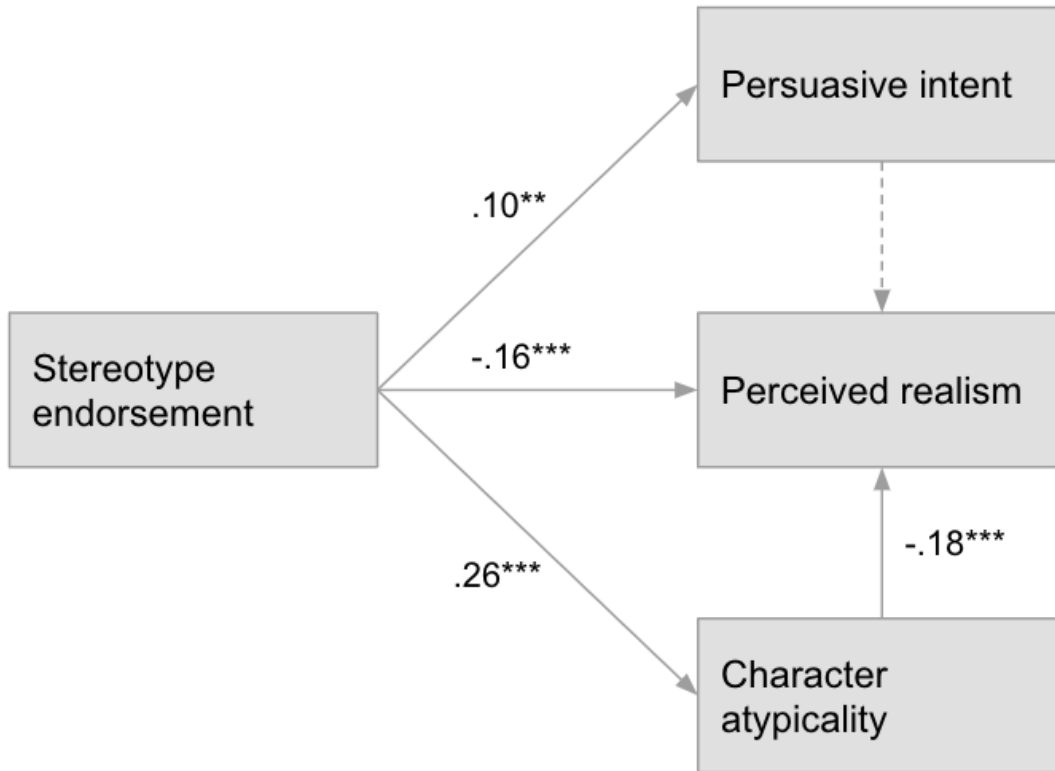
and between education and other demographic variables in order to account for known differences in both as a function of each other as well as race, gender, and age.

The first model tested the hypothesized system of relationships for the subset of participants who saw a White man character ($N = 249$). For this model, stereotype endorsement was set to equal an average endorsement of the White man brilliance stereotype when participants saw the White man character (instead of being set to 0 as it was for previous analyses; see measures section). Though the model showed good fit ($X^2 = 5.46$, $df = 4$, $p = .24$; SRMR = .02; RMSEA = .04, 90% CI[.00,.11]; CFI = .98), the only significant path in this subset was the relationship between atypicality and realism ($\beta = -.22$, $z = -3.48$, $p < .01$)—all other paths were not significant. This confirms that atypicality is a strong predictor of realism, but stereotype endorsement, as expected, does not drive perceptions of character typicality, persuasive intent, or realism in response to a brilliant White man character.

Next, I tested the same model with participants who saw a counter-stereotypical representation (including all 3 of the other categories; $N = 751$). The model was only a fair fit for this subset of data ($X^2 = 61.46$, $df = 4$, $p < .001$; SRMR = .04; RMSEA = .14, 90% CI[.11, .17]; CFI = .80). This indicates that there may be different sets of relationships across those three categories and/or that there are other important variables that were not included in my study and thus the model. As seen in Figure 4.2, significant paths identified in this subset confirm the findings from the regression analyses. Increasing stereotype endorsement is associated with an increase in perceptions of persuasive intent ($\beta = .10$, $z = 2.74$, $p < .01$) and character atypicality ($\beta = .26$, $z = 7.34$, $p < .001$), and a decrease in perceived realism ($\beta = -.16$, $z = -4.28$, $p < .001$). Perceptions of character atypicality are negatively associated with realism judgments ($\beta = -.18$, $z = -4.91$, $p < .001$) and the impact of stereotype endorsement on realism is mediated by

perceptions of character atypicality (indirect effect: $\beta = -.05$, $z = -4.08$, $p < .001$; total effect: $\beta = -.20$, $z = -5.65$, $p < .001$).

Figure 4.2. Diagram of path model for all counter-stereotypical characters

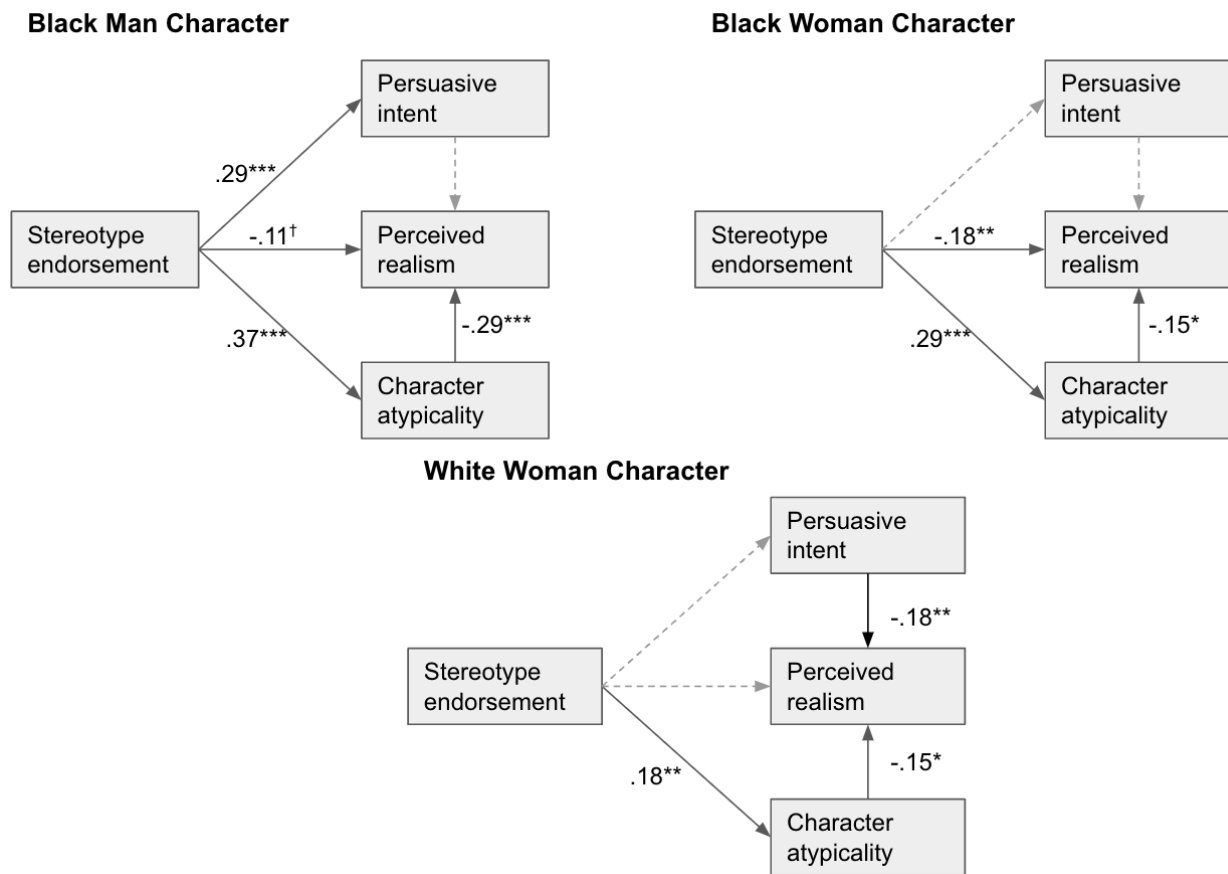


Note: Estimates are standardized. Dotted gray arrow indicates a non-significant path.

Finally, I fit the model for each of the counter-stereotypical representations separately to see how the relationships in the model might differ for each specific social identity of the character ($N_{Black\ man} = 251$; $N_{Black\ woman} = 250$; $N_{White\ woman} = 250$). Figure 4.3 shows the standardized estimates for each path across the three counter-stereotypical groups. Model fit varied for the Black men ($X^2 = 15.20$, $df = 4$, $p < .01$; SRMR = .04; RMSEA = .11, 90% CI [.05, .17]; CFI = .92), Black women ($X^2 = 31.19$, $df = 4$, $p < .001$; SRMR = .05; RMSEA = .17, 90% CI [.11, .22]; CFI = .81), and White women ($X^2 = 9.50$, $df = 4$, $p = .05$; SRMR = .03; RMSEA =

.08, 90% CI[.00, .14]; CFI = .87) character subsets with the subset who saw the Black woman character showing (descriptively) slightly worse fit than the other two. Across all three conditions, it is likely that there are other variables that may be important in this process. Though the three groups vary in whether stereotype endorsement predicts perceptions of persuasive intent or realism directly, an indirect effect of stereotype endorsement through typicality on realism judgments is observed in each subset.

Figure 4.3. Path models for each counter-stereotypical character



Note: Estimates are standardized. Dotted gray arrows indicate non-significant paths.

4.7 Study 3 Discussion

Study 3 confirms that those who more strongly endorse the stereotype being subverted are likely to discount the counter-stereotypical representation as unrealistic. I find an association between intelligence-related stereotype endorsement and decreased perceived realism across three different social identities for which high-level intelligence is counter-stereotypical. In each case, this relationship was mediated by judgments of the character being atypical for the role that they played and of geniuses more generally. As expected, the relationship between stereotype endorsement and realism judgments was not present for the stereotypical representation.

The role of perceptions of persuasive intent is less clear. Though intelligence-related stereotype endorsement was associated with perceptions of persuasive intent, when we looked at all participants who saw any of the three counter-stereotypical characters, persuasive intent was not, in turn, associated with realism judgments. This could be because perceptions of persuasive intent could include, but do not necessitate, a negative evaluation of that intent as being deceptive or manipulative, which may be more likely to elicit resistance. Moreover, persuasive intent is not only perceived when the content is false—one can perceive persuasive intent in an anti-smoking advertisement, for example, but still perceive the content to be accurate. Likewise, one may perceive persuasive intent in the inclusion of a counter-stereotypical character but also perceive the content to be realistic.

When examining each counter-stereotypical representation separately, stereotype endorsement only led to perceptions of persuasive intent for the Black man character, and perceptions of persuasive intent only led to decreased realism judgments for the White woman character. Neither path was significant for the Black woman character. This further suggests that judgments of persuasive intent are complicated and may only be impacted by stereotype

endorsement in some cases. More work is needed to understand the other contributing factors to these judgments in the context of counter-stereotypical characters and how the relationships differ for characters with different marginalized identities.

Future work should also explore other variables that could contribute to the discounting of counter-stereotypical characters (and uncongenial information more generally) in fictional narratives. For example, it might be fruitful to use a guided thought listing task to capture reactance to these representations and examine how that might interact with perceptions of persuasive intent and evaluations of the creators. Future studies should also examine possible ways to circumvent this barrier in positive influence. For instance, would realism judgments still be a route for discounting uncongenial representations if participants were told that the show/movie was based on a true story?

The design for Study 3 is not without limitations. First, though the video clips used in each category were chosen to be similar in character intelligence ratings and ability to hold participant attention, it was not possible to match them perfectly across conditions. I restricted the clips to two minutes that featured the demonstration of the character's skill in order to limit other information that may differentiate the characters or the situation beyond their social identity. Still, while working with existing television shows and movies adds external validity to my study, it is difficult to control all of the information that is communicated through audio-visual content.

Second, my study only features mechanisms by which positive influence through counter-stereotypical representations might not be realized immediately. Future studies should work to investigate the potential downstream (and long-term) effects of decreased realism judgments on stereotype change. It is possible that these representations are reinterpreted and

discounted as unrealistic immediately following exposure, but still exert some impact in the long term through accessibility or through “sleeper effects” in which the information—but not the discounted source—is recalled (Hovland et al., 1949).²⁸

Fictional narratives have a unique ability to stretch the imagination and a potential to shift perceptions, but we know they are not real. Realism judgments can therefore be used as a way to discount fictional content that does not align with one’s current beliefs. My study demonstrates one scenario in which this happens. Counter-stereotypical representations that do not align with one’s stereotypical beliefs can be discounted as unrealistic though judgments of character atypicality. This is important to keep in mind when theorizing entertainment media’s potential for prosocial impact (and thinking about how to increase it), especially in reference to counter-stereotypical representations.

²⁸ Note that the existence, conceptualization, and mechanisms of a sleeper effect are ongoing conversations in the persuasion literature (see Kleinnijenhuis, 2020 for a recent summary). A meta-analysis conducted by Kumakale and Albarracín (2004) found that a sleeper effect emerged when both the message argument and cue had a strong initial impact, but other studies (e.g., Fluckiger et al., 2015) have failed to find evidence of a sleeper effect.

Chapter 5 — Summary and Conclusion

Broader, more diverse representation in mass media is frequently imagined as a tool for the reduction of harmful stereotypes at scale. While entertainment media in the United States increasingly feature representations that challenge or counter prevailing stereotypes, selective exposure and motivated cognition present potential barriers to their prosocial impact. This dissertation has sought to document three of these barriers across three studies. I begin my final chapter by summarizing each of these studies and follow up with future directions and a final conclusion.

5.1 Selective Exposure to (Counter) Stereotypical Representations

Study 1 considers a component of entertainment media exposure that is fundamental in the current media landscape but is sometimes assumed to be (and treated as) a constant in entertainment effects research: selection processes. The emergence of a high-choice media environment offers and facilitates the opportunity to be selective about the entertainment one consumes, making it possible to self-select out of exposure to the growing range of diverse and counter-stereotypical representations in entertainment content. Using a U.S. sample, I found that greater endorsement of intelligence-related gender stereotypes predicted a decrease in the selection of shows featuring a highly-intelligent White woman over those featuring a highly intelligent White man.

This controlled observational study demonstrates that entertainment selection is impacted by existing beliefs in addition to other factors—such as affective states (Rubin, 2002; Zillmann & Bryant, 1985) and a desire for ingroup representation (Schieferdecker & Wessler, 2017)—that

have been more widely researched. In doing so, I contribute to knowledge of how American viewers are exposed to audiovisual entertainment media “in the real world” and add to the large body of literature on selective exposure to information by examining selection processes in the relatively less researched area of narrative entertainment media. Overall, Study 1 indicates that those who could benefit most from counter-stereotypical representations in entertainment are less likely to be exposed to them, undermining the utility of mass media in the widespread reduction of harmful stereotypes.

5.2 Re-Interpretation of Counter-Stereotypical Representations

However, despite being biased, selection of counter-attitudinal over pro-attitudinal entertainment is not impossible or even uncommon. In Study 1, pre-existing beliefs appear to have only a modest impact on viewing decisions (the R^2 is relatively small). While small effects can have large impacts at scale, the small effect size for existing beliefs suggests other factors may have a stronger influence. Despite a tendency to choose media based on existing beliefs, it is still likely that at least some shows or movies have a great enough viewership to have an audience that spans different viewpoints, and viewers are likely regularly coming into contact with uncongenial information or representations in entertainment media. Study 2, then, examines how pre-existing stereotypes influence interpretations of these representations when they *are* seen.

In the context of counter-stereotypical representations of genius (e.g., genius characters who are women and/or Black), Study 2 finds that stereotype endorsement impacts intelligence and genius ratings of counter-stereotypical characters and that evaluations of these characters include traits that might compensate for (assumed) lower levels of natural ability. Though results indicate that the manner in which this occurs differs across social identity groups (and more

research is needed to understand the differences between them), taken together, they suggest that differential and potentially biased interpretations may undermine entertainment media's potential for positive impact.

5.3 Realism Judgments and Discounting of Counter-Stereotypical Representations

Differential interpretation is, in part, facilitated by gaps in information and the resulting ambiguity in a message. There is content, however, that may be unambiguous in its presentation of counter-stereotypical characters and thus may not lend itself easily to re-interpretation. When the message is clear enough or otherwise compels the viewer to interpret it as inconsistent with their existing views, there are several routes through which to dismiss information (in particular, counter-stereotypical representations). As has been demonstrated in interpersonal psychology, people may judge a counter-stereotypical exemplar to be atypical based on their existing stereotypes and dismiss them as an exception that is not to be integrated into their judgments about the group as a whole (Hewstone et al., 2000).

Fictional narratives, by virtue of being imaginary, may offer more ways to dismiss content than information in other forms. Study 3 shows that judgments of a fictional character as atypical can lead one to dismiss the representation as unrealistic and that stereotype endorsement is predictive of character atypicality judgments for counter-stereotypical characters. This suggests that, even in cases where people select content that features a counter-stereotypical character whose counter-stereotypical traits are not ambiguous, those high in stereotype endorsement may still dismiss the content as unrealistic and not warranting application to their knowledge of the real world. The role of perceptions of persuasive intent is less clear; these perceptions do not appear to be reliably impacted by stereotype endorsement. More work is needed to unpack what is being captured through questions that ask about persuasive intent and

which evaluative elements co-occur that may or may not be associated with motivated cognition or message discounting.

5.4 Differential Effects Based on Social Identity

Though not an initial goal of this dissertation, I was able to explore differences in how the processes examined in Studies 2 and 3 might work across different social identities for which the target stereotype is considered counter-stereotypical. One interesting pattern is that while stereotypes about White women *did* affect content selection and *were* associated with decreased realism judgments through evaluations of White women geniuses as atypical, White women characters did not seem to be as subject to reinterpretation as Black characters. This might suggest that some gains have been achieved for White women when it comes to acceptance in intelligence-centered roles in the course of viewing entertainment content (at least when they occur incidentally during viewing rather than as the central figure in a story description, as was the case for the selection task in Study 1).

Why might White women characters lead to different outcomes than Black women and Black men characters on this front? Category dominance theory suggests that people who belong to multiple social groups might be evaluated more strongly by one category than the other (Nicolas et al., 2017). The ethnic prominence hypothesis specifically suggests that judgment (or discrimination) is more strongly driven by race than gender (Levin et al., 2002). It is possible that the character's Whiteness led to easier associations with and acceptance of the traits that were being displayed. Note, however, that open responses indicated a lower rate of intelligence-based themes in first impressions of the White women characters as well as the Black characters

in comparison to the White man characters.²⁹ As noted in my discussion of the findings of Study 2 (see Chapter 3), intelligence is a complex and multifaceted construct involving related but meaningfully distinct concepts such as being competent/knowledgeable and talented/brilliant.

Another notable difference is that increased stereotype endorsement led to a more negative comparison of Black women to White men when it comes to intelligence-related traits than was the case for Black men or White women. What might lead to more frequent re-interpretation of Black women characters' intelligence as compared to other stereotyped characters? The double-jeopardy hypothesis (Beale, 1970) suggests that Black women's membership in two stigmatized groups results in higher levels of discrimination against them. The more consistent re-interpretation of Black women characters as not possessing high-level intelligence, genius qualities, or logical or observant abilities seems to provide support for this account. The differences in how stereotypes impact character interpretation and evaluation based on the social identity group in question are worthy of further exploration in future studies.

5.5 Future Directions

5.5.1 Other Factors for Selection

There are many other factors that may have a stronger influence on selection than existing stereotypes. These could include genre, the popularity of the cast or of the show/movie, the reputation of the production company, co-occurring storylines, or intended gratifications. These other factors may overcome any hesitancy about programs that include counter-attitudinal storylines or representations. Further, as demonstrated by Garrett (2009), selective exposure does

²⁹ More discussion on the potential unique offerings of spontaneous impression generation follows in the next section.

not necessitate selective avoidance. While people are likely attracted to entertainment with congenial content, they may not be equally motivated to avoid uncongenial content. I cannot distinguish between selective approach and avoidance in Study 1—testing them separately would be an interesting avenue for future research.

Moreover, uncongenial content is not always apparent from story descriptions or trailers. My stimuli presented overt counter-stereotype signaling in the initial description, but many show and movie descriptions give very little information about the characters and the plot, leaving more to the imagination. Stereotype violations in descriptions and in the content itself can also vary in how overt they are. My results may suggest that more covert counter-stereotyping could be more effective in reaching audiences that have pre-existing stereotypes about the group. Thus, entertainment media may still be a promising means of exposing people to different perspectives. Leveraging these other factors to increase exposure to a wider range of representations is worth further consideration.

Theorizing about mass media effects should continue to incorporate decision processes and the changing technological environment in which we encounter media content. Future work should strive to study selection processes in a more naturalistic setting in order to continue adding external validity to our understanding of this process. Observational studies can add to our understanding of how selections are made and the circumstances that might lead someone to watch entertainment with counter-attitudinal content.

5.5.2 Different Kinds of Beliefs and Stereotypes

Across all three studies, I examined the more general relationship between existing social cognitions and story or character interpretations in reference to one specific stereotype: the White man brilliance stereotype. While this provides evidence that existing cognitions can

impact selection, interpretations, and evaluations of stories and their characters, my conclusions cannot necessarily reach beyond the scenario in which I studied them. Existing cognitions relevant to negatively-valanced stereotypes (e.g., women are bad drivers), for example, may yield different results. Further, a brilliance-related stereotype might guide behavior differently in different cultural contexts.

It is also possible that some kinds of existing cognitions may be more important for the interpretation of entertainment content than others. For example, politically-relevant beliefs may be especially important for those who have a strong political identity (Coles, 2020) and thus may exert a stronger influence in narrative interpretation (or evaluation) than more loosely held beliefs. Future work should continue to explore the relationship between existing beliefs and entertainment selection, interpretation, and application in different cultural contexts, across different stereotypes, and in reference to other social groups to establish it as a broad-reaching and systematic process.

5.5.3 Open-ended Versus Closed-ended Measures

Study 2 raised the question of how open-ended and closed-ended measures can be used to capture different aspects of stereotypical beliefs. Though open-ended responses can be messy and often difficult to work with, they may also offer additional insight as to the concepts and traits that are immediately relevant to one's evaluation of a character (or person) from a particular social group. Closed-ended measures can also capture differences in evaluation based on set traits and concepts, but they may orient a participant to a concept that they would/did not spontaneously consider. The utility of these two types of measurements for this purpose warrants further consideration. Further discussion on this point can be found in the Study 2 discussion section (see Chapter 3).

5.5.4 Downstream Influence of Realism Judgments

Future work should a) tease out the cognitive mechanisms by which biased character judgments are made when consuming a narrative and b) explore the impacts these judgments have on attitudes towards the represented group. Each of my studies demonstrates a potential barrier to the prosocial influence of counter-stereotypical representations. While each barrier is theoretically linked to a decrease in media influence, my studies do not demonstrate this directly. Of course, not selecting a particular type of media content does imply that it cannot directly exert influence. This outcome is less certain when it comes to differences in interpretation and evaluation of the narrative. Subsequent studies should assess the extent of change in the relevant stereotype/belief after exposure so as to explicitly connect differential interpretation and discounting mechanisms demonstrated here to a lack of stereotype change.

Future work should also examine the long-term influence of more substantial media exposure to counter-stereotypical representations. Judging new information to be unrealistic likely precludes the explicit integration of that information in one's understanding of the real world, but there is also the possibility that the information will be implicitly or unconsciously integrated. It is possible, for example, that the source of the counter-stereotypical exemplar may be forgotten over time yet its accessibility may still lead to a decrease in stereotype endorsement (similar to what is hypothesized by the sleeper effect for persuasive messaging more generally; Hovland et al., 1949). This is likely dependent on the amount of time that has passed or the number of counter-stereotypical representations viewed.

5.5.5 Discounting Mechanisms and Typicality

Researchers might further examine the role of typicality in discounting processes. Representations that are highly atypical likely trigger unrealism judgments more often than

representations that are mildly atypical. Joyce and colleagues (2019) showed that extremely counter-stereotypical exemplars led to judgments of the exemplar as very atypical of their social group and thus did not change beliefs about the social group as a whole, while less counter-stereotypical representations did. They suggest that there's a "sweet spot" in which exemplars are perceived as typical enough of their social group to not be subtyped, but atypical enough to impact beliefs about the groups as a whole. Is there a sweet spot for realism judgments as well?

It may also be fruitful to examine multiple types of typicality in one clip, especially when they are competing—what happens when a character is typical for one group they belong to but not the other? For instance, one might go into a viewing of the *Queen's Gambit* with a set of stereotypes about chess prodigies, and a separate set of stereotypes about women. It is not clear in these cases how existing cognitions would influence interpretation or evaluation of the narrative.

Finally, additional mechanisms involved in the relationship between typicality and realism can be explored. Representations that are typical or more congruent with existing mental representations tend to be evaluated more favorably (e.g., Perry, 1994) in part due to the ease with which they are processed (Alter & Oppenheimer, 2009). Processing fluency has also been linked to narrative persuasion (Bullock et al., 2021) and can be disrupted by perceived inconsistencies between a narrative and the real world (Busselle & Bilandzic, 2008). Future studies could explore this as one explanatory mechanism for the relationship between judgments of character (or event) atypicality and decreased realism judgments.

5.6 Final Conclusions

Mass mediated messages can communicate overarching ideas that are embedded within a culture and, in some cases, act as a key source from which to learn about the world and the people in it. Stories can serve as important sources of social information, in part due to their proximity to real life social experiences, and they are increasingly easy to distribute on a large scale. Thus, media representation has the potential to engender large-scale pro-social change, including a shift in harmful stereotypes about marginalized groups that drive prejudice and discrimination. While there is ample work on the impact of media representations on beliefs and attitudes, relatively few studies have explored the heterogeneity in these effects or the social cognitive mechanisms explaining them. My dissertation begins this work by documenting three points of resistance to the positive influence of counter-stereotypical representations.

Though my studies focus on counter-stereotypical representations of genius, the theory behind them can be applied to narrative content more generally. In documenting the processes by which positive narrative influence may be thwarted at the individual and societal level, my intention is to provide the first step towards understanding how these messages may more easily carry out their prosocial effects (and, more specifically, how the increasing diversity in media representation can lead to a widespread decrease in damaging social stereotypes). Future work should explore these points as windows of opportunity to increase the positive social impact of mass mediated stories.

Appendix A: Study 1

Table A.1. Examples of TV show descriptions

<p>Crime Fiction (Brilliant)</p>	<p>Woodpine Mysteries: [Ethan/Ella] Smith, the [son/daughter] of a math genius, has uncanny powers of observation. When [he/she] is able to crack a long unsolved case in minutes, the local police department takes notice. With the reluctant help of [his/her] best friend, [Ethan/Ella] starts solving cases for a skeptical but increasingly impressed police force. [His/Her] cerebral approach is supported by detective [Ethan/Ella] Swanson, who also happens to be [Ethan's/ Ella's] love interest, and clashes with the old-school policing tactics of detective Harry Beck.</p>
<p>Crime Fiction (Control)</p>	<p>Criminal Detective: When police officer [Leo/Lydia] Miller helps catch a criminal who has eluded law enforcement for years, [he/she] forms an unlikely alliance. In return for freedom, the criminal agrees to help the cops catch long-sought fugitives. Though suspicious of [his/her] new accomplice, [Leo/Lydia] soon realizes that their instincts and ties to the criminal underworld are a useful commodity.</p>
<p>Drama (Brilliant)</p>	<p>Chasing Dreams: [Kenny/ Kendal] Fridell has always been smart. At five years old [he/she] was solving algebraic equations and learning chess. By twelve [he/she] had mastered college level calculus and beat [his/her] family at every game of trivia they played. At first, [Kenny/ Kendal] enjoys the attention that comes with [his/her] exceptional intelligence but, over time, [he/she] starts to feel suffocated by [his/her] parents' dreams for [him/her]. With the aid of [his/her] grandfather, [he/she] decides to make an escape and chase [his/her] own dreams instead.</p>

Drama (Control)	Finding Family: As children, [Ben/ Brooke] Branch, [his/her] sister, and [his/her] brother are abandoned by their parents and sent to live in foster homes. All three are sent to different homes, and they become estranged from one another. Now, as a young [man/woman], [Ben/ Brooke] wants to find [his/her] brother and sister. With the help of a sympathetic social worker, [Ben/ Brooke] sets out on a journey to find [his/her] family.
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Attrition Analysis

We performed a logistic regression with demographic factors predicting participation in Part 2 of data collection to examine sample attrition between the two parts. Part 2 participation was coded as a binary 0 (did not participate in Part 2) and 1 (participated in Part 2).

Demographics were coded as indicated in the Methods section of study 1. When all demographic variables are included in the model, I find that age and race are significant predictors of Part 2 participation—those who returned for the second part tended to be older and were more likely to be White. My predictor variable (stereotype endorsement), however, did not predict Part 2 participation. Thus, I do not expect that the distribution of my predictor variable was impacted by age and racial make-up of those who returned for Part 2.

Table A.2. Logistic regression with demographics and stereotype endorsement predicting part 2 participation

	Model 1			Model 2		
	Log odds	SE	Odds ratio	Log odds	SE	Odds ratio
Age	0.50***	0.05	1.66***	0.51***	0.05	1.66***
Woman	-0.25	0.17	0.78	-0.25	0.17	0.78
White	0.61**	0.19	1.84**	0.62**	0.19	1.87**
Education	-0.01	0.05	0.99	-0.01	0.05	0.99
Income	0.12	0.09	1.12	0.13	0.09	1.14
Stereotype Endorsement				0.17	0.17	1.18
Constant	-3.29***	0.32	0.04	-3.35***	0.33	0.04
Observations	1,029			1,019		
Log Likelihood	-503.05			-495.34		
Akaike Inf. Crit.	1,018.11			1,004.68		

Note: †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001

Neither age, $r(1048) = .04$, $p = .25$, nor race, $r(1105) = .01$, $p = .79$, were significantly correlated with stereotype endorsement. However, there is a distinction between stereotype endorsement and application (e.g., Kunda & Spencer, 2003). While there was no correlation between stereotype endorsement and age, it is possible that older participants may be more likely to apply the stereotype when reading a story description. Indeed, Radvansky and colleagues (2010) showed that, when reading a story that allowed for stereotypic inferences, older adults

(compared with younger adults) were less likely to inhibit stereotypic inferences. If older adults are more prone to applying (but not activating) cultural stereotypes, it is possible that my results would have been weaker with a greater number of younger participants. More research is needed to understand the relationship between age, stereotype activation, and stereotype application when choosing from a variety of entertainment options.

It is unclear how an increase in non-white participants would impact these findings. My results indicate that White participants were less likely to choose the counter-stereotypical representation than participants of other races. This could suggest that increased inclusion of people of other races may have resulted in more respondents choosing the counter-stereotypical representation regardless of stereotype endorsement (which was not correlated with race). As mentioned in the discussion, it is possible that White respondents are more familiar with the genius man trope and so were more likely to gravitate towards it than respondents of other races. On the other hand, it is also possible that people of color could be gravitating away from representations of exceptional White men. Further research is needed to examine the impact of viewer race on selection of counter-stereotypical representations.

Survey Items for Study 1

Wave 1

First, we would like you to evaluate a number of potential TV show cast members. On the following pages, you will see 10 photos of people's faces, and be asked to indicate the traits you think that person would best represent.

[A total of 10 faces (5 White men and 5 White women) are presented in random order]

Questions after each photo:

To what extent do you think this person could display the following traits (presented in random order):

1. Hardworking
2. Intelligent
3. Friendly
4. Logical
5. Emotional
6. Independent
7. Gifted/brilliant
8. Caring
9. Funny

Demographics

1. What is your gender? (you may choose all that apply)
 - a. Male
 - b. Female
 - c. Nonbinary/3rd gender
 - d. Transgender
 - e. Gender not listed above

2. What is your race? (you may choose all that apply)
 - a. White
 - b. Black or African American
 - c. Hispanic/Latinx
 - d. Asian

- e. American Indian or Alaska Native
 - f. Native Hawaiian or Pacific Islander
 - g. Race not listed above
3. What is your age? (open response)
4. Last year, what was your total family income from all sources, before taxes?
- a. Less than \$20,000
 - b. \$20,000 – \$34,999
 - c. \$35,000 – \$49,999
 - d. \$50,000 – \$74,999
 - e. \$75,000 – \$99,999
 - f. Over \$100,000

Wave 2

On the following pages, you will be given a choice between 4 TV shows and asked to indicate which one you would like to watch.

You will be asked to make a choice a total of 8 times across a few different genres. There will be no additional questions after you've made your choices. Please read each description fully before choosing one.

Thank you for your participation!

8 selections made. Each trial contained half men and half women protagonists.

1. Four mystery/crime fiction stories featuring brilliant protagonist
2. Four mystery/crime fiction stories featuring non-brilliant protagonist
3. Four science fiction stories featuring brilliant protagonist
4. Four science fiction stories featuring non-brilliant protagonist
5. Four drama stories featuring brilliant protagonist
6. Four drama stories featuring non-brilliant protagonist
7. Four comedy stories featuring brilliant protagonist
8. Four comedy stories featuring non-brilliant protagonist

Appendix B: Study 2

Table B.1. List of characters featured in study 2 stimuli

Character	Show/Movie	Subject Domain
Katherine Johnson	Hidden Figures	Math
Murphy Cooper	Interstellar	Math
Rich Purnell	The Martian	Math
John Nash	A Beautiful Mind	Math
Phiona Mutesi	Queen of Katwe	Chess
Beth Harmon	The Queen's Gambit	Chess
Tahime Sanders	Life of a King	Chess
Bobby Fischer	Pawn Sacrifice	Chess
Camille Saroyan	Bones	Logical Reasoning
Temperance Brennan	Bones	Logical Reasoning
Lincoln Rhyme	Lincoln Rhyme: Hunt for the Bone Collector	Logical Reasoning
Sherlock Holmes	Sherlock	Logical Reasoning

Table B.2. Odds ratios for the mention of intelligence-related traits in reference to the White man character condition

<i>Predictors</i>	Genius <i>Odds Ratios</i>	Observant <i>Odds Ratios</i>	Expert <i>Odds Ratios</i>	Competent <i>Odds Ratios</i>
Intercept	0.11 *** (0.07)	0.19 * (0.16)	0.17 *** (0.09)	0.05 *** (0.04)
Black Man Condition (BM)	0.46 (0.31)	0.25 (0.27)	0.66 (0.37)	1.47 (1.16)
Black Woman Condition (BW)	0.06 *** (0.05)	0.09 * (0.10)	0.56 (0.33)	1.73 (1.37)
White Woman Condition (WW)	0.27 (0.19)	0.26 (0.29)	0.66 (0.39)	1.83 (1.46)
Seen before	5.95 (7.25)	3.98 (4.51)	1.14 (1.57)	0.54 (0.87)
Man Participant	1.03 (0.30)	0.99 (0.29)	1.19 (0.34)	0.71 (0.20)
White Participant	1.51 (0.36)	0.89 (0.21)	0.95 (0.23)	0.95 (0.22)
Age	1.18 (0.32)	1.01 (0.26)	0.59 * (0.15)	0.96 (0.23)
Income	1.16 (0.12)	1.04 (0.11)	0.95 (0.11)	1.12 (0.12)
Stereotype Endorsement (SE)	1.03 (0.12)	1.01 (0.12)	1.02 (0.12)	0.92 (0.11)
BM:SE	0.35 (0.57)	0.21 (0.35)	1.70 (3.15)	0.33 (0.70)
BW:SE	0.03 (0.07)	0.82 (2.04)	0.87 (1.64)	0.30 (0.57)
WW:SE	0.74 (1.67)	0.52 (1.03)	0.32 (0.61)	1.93 (3.91)
Random Effects				

σ^2	3.29	3.29	3.29	3.29
$\tau_{00 \text{ video}}$	0.50	1.53	0.30	0.70
ICC	0.13	0.32	0.08	0.17
N_{video}	12	12	12	12
Observations	936	936	936	936
Marginal R^2 / Conditional R^2	0.21 / 0.32	0.15 / 0.42	0.03 / 0.11	0.04 / 0.21

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Attrition Analysis and Discussion

A total of 53 participants were removed from the main analyses because they rated/evaluated the supporting character in the clip instead of the main character. Of these, 25 (47%) saw the White woman chess clip (from *The Queen's Gambit*), 33 (62%) were in a White woman condition, and 36 (74%) a chess related clip. It might have been more difficult to decipher a main character in chess-based clips since much of the clip was made up of two people playing and the main character was mostly indicated through more visual focus on one character than the other.

It seems that one clip accounted for the majority of misevaluations which could be due to a number of factors. Although the narration and much of the visuals in *The Queen's Gambit* clip focused on Beth Harmon (the main character), the clip follows the supporting character (her older White male chess opponent) into the room which may have created some confusion regarding who the main character was. The supporting character also had a more stereotypical genius appearance. People noted in the open responses, for example, that he “looks like an intelligent yet mad scientist” and that “he looks a bit unruly, but it adds to an Albert Einstein vibe making him seem even more intelligent.” This may have led participants to more easily see him as the main person of interest in a high-level chess competition context.

Below is a series of logistic regressions in order to see if specific demographic factors of the participants were associated with higher likelihood of rating the wrong character.

Importantly, I also wanted to see if stereotype endorsement was associated with this as well.

None of the demographic factors were associated with a greater likelihood of rating the wrong character. Stereotype endorsement, however, is significantly associated with greater likelihood of rating the wrong character ($OR = 6.40, p < .50$). This makes sense, especially when we consider that most of these instances were in response to the White woman chess video where the main character was playing opposite a White man with a more traditional genius appearance. Greater stereotype endorsement generally led participants to focus on an intelligent White man character if one was available in the clip.

Table B.3. Odds ratios for incorrectly identifying the main character by demographics and stereotype endorsement

	Wrong Character Estimate (SE)
Intercept	0.14 *** (0.08)
Age	0.99 (0.01)
Man participant	0.73 (0.22)
White participant	0.97 (0.31)
Education	0.98 (0.09)
Income	0.88 (0.14)
Stereotype Endorsement	6.40 * (5.26)

Observations	987
R ² Tjur	0.01

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Open Response Analysis: Reasons Given for Genius Judgment

Participants were given an opportunity to elaborate on why they did or did not consider the character in the clip they viewed to be a genius. Figure B.1 shows the category of answers provided by condition (coded by a research assistant blind to the intent of the study and the gender/race of the character being referenced). The categories were ability (the character’s mind is working on a much higher level than the average person), activity (in and of itself, being able to do the activity constitutes genius), presentation (they look/act like a genius), not a genius (it doesn’t take genius level ability to do what was shown in the clip), and not enough information (indications by the respondent that there was insufficient information for them to make a judgment).

Figure B.1 indicates that fewer people said they considered the character a genius because of the intellectual ability the character displayed when that character was a woman than when they were a man. The fewest indications that the character was *not* a genius were in the white man condition; the most were in the woman conditions. Logistic regressions controlling for demographics and accounting for video-specific variance indicate that the only category that shows a difference across condition is the “not a genius” category, which is significantly more likely to be mentioned for the Black women characters ($OR = 2.69, p < .05$) compared to the White man characters (see Figure B.2). An interaction between stereotype endorsement and condition showed that increased stereotype endorsement predicted increased likelihood of

participants saying the character was not a genius in the Black woman condition ($OR = 24.15, p < .10$).

Figure B.1. Proportion of responses in each category of reasoning for genius judgment

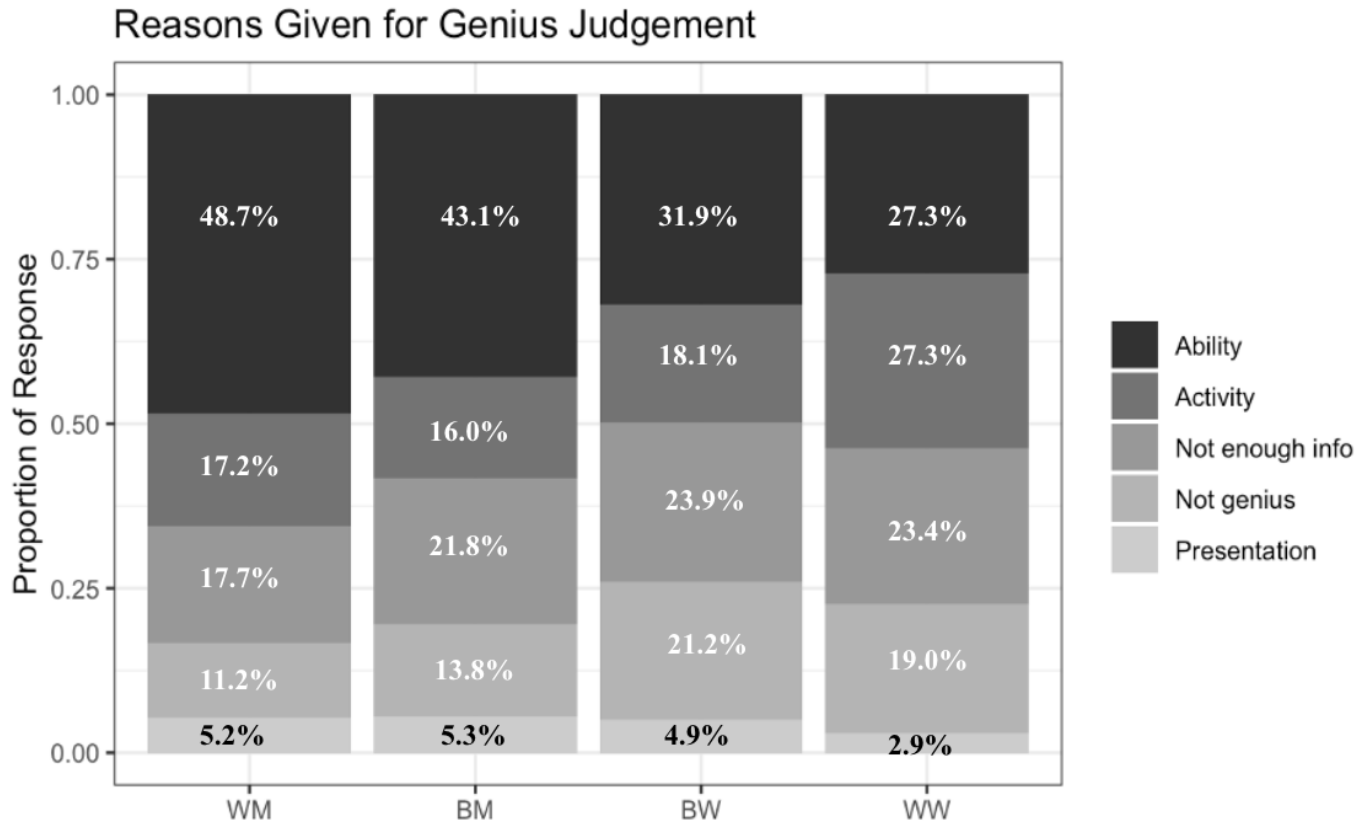
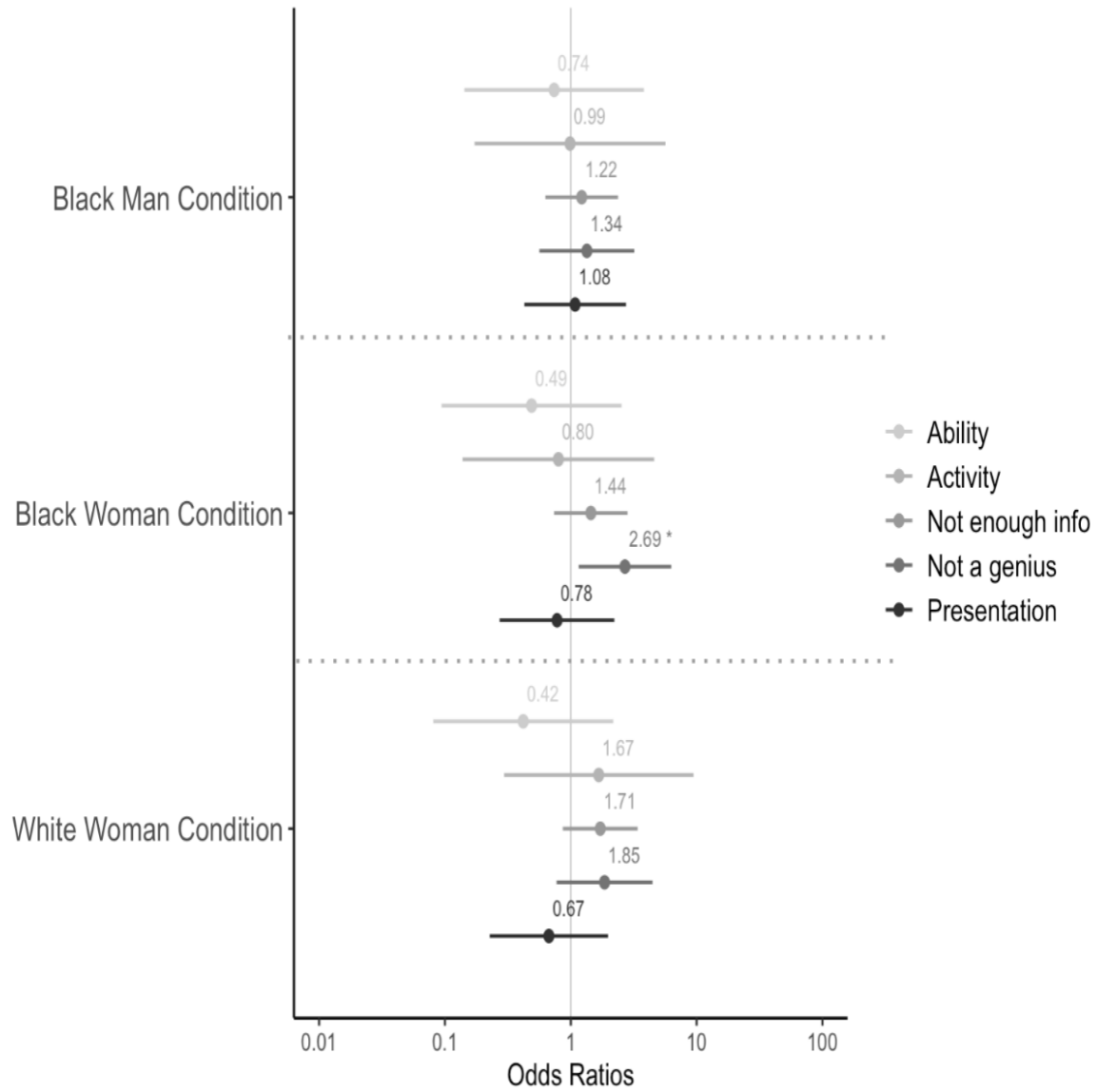


Figure B.2. Odds ratios for reasons given for genius judgment



Survey Items for Study 2

First, we would like you to evaluate several potential TV show cast members. On the following pages, you will see 16 photos of people's faces and be asked to indicate the traits you think that person would best represent. Please go with your first instinct and answer to the best of your ability.

[A total of 16 faces (4 of each race/gender) are presented in random order]

Questions after each photo:

To what extent do you think this person could display the following traits (presented in random order):

10. Hardworking
11. Intelligent
12. Friendly
13. Logical
14. Assertive
15. Emotional

You will now see a short video clip from a movie or TV show and be asked to give your impressions of the clip and the character it features. Please watch and listen to the entire clip before providing your impressions.

[Randomly assigned show/movie clip]

1. In a few sentences, please tell us your first impression of the main character in this clip. (open response)
2. To what extent would you say the following traits describe the main character (not at all to extremely)
 1. Intelligent
 2. Hardworking
 3. Assertive

4. Nerdy
 5. Friendly
 6. Talented
 7. Emotional
 8. Attractive
 9. Logical
3. Would you consider the main character to be a genius?
1. Not at all
 2. Not really
 3. Maybe
 4. Definitely
4. Please elaborate on why you do or do not consider the character to be a genius (u
5. Have you heard of this movie/show before?
1. Yes, I have heard of it before
 2. No, I have not heard of it before
 3. I'm not sure
6. Have you seen this movie/show before?
1. Yes, I have seen all of it
 2. Yes, I have seen some of it
 3. No, I have not seen any of it
 4. I'm not sure
7. To what extent did this clip hold your attention?
1. Not at all
 2. A little
 3. Somewhat
 4. Very much
 5. A great deal
8. Please rate the visual quality of the clip that you saw.
1. Very poor quality
 2. Poor quality
 3. Fair quality
 4. Good quality
 5. Excellent quality

Demographics

5. What is your gender? (you may choose all that apply)
 - a. Man
 - b. Woman
 - c. Nonbinary/3rd gender
 - d. Transgender
 - e. Gender not listed above
6. What is your race? (you may choose all that apply)
 - a. White
 - b. Black or African American
 - c. Hispanic/Latinx
 - d. Asian
 - e. American Indian or Alaska Native
 - f. Native Hawaiian or Pacific Islander
 - g. Race not listed above
7. What is your age? (open response)
8. Last year, what was your total family income from all sources, before taxes?
 - a. Less than \$20,000
 - b. \$20,000 – \$34,999
 - c. \$35,000 – \$49,999
 - d. \$50,000 – \$74,999
 - e. \$75,000 – \$99,999
 - f. Over \$100,000

Appendix C: Study 3

Table C.1. List of characters featured in study 3 stimuli

Character	Show/Movie
Katherine Johnson	Hidden Figures
Rich Purnell	The Martian
Beth Harmon	The Queen's Gambit
Bobby Fischer	Pawn Sacrifice

Survey Items for Study 3

First, we would like you to evaluate several potential TV show cast members. On the following pages, you will see 16 photos of people's faces and be asked to indicate the traits you think that person would best represent. Please go with your first instinct and answer to the best of your ability.

[A total of 16 faces (4 of each race/gender) are presented in random order]

Questions after each photo:

To what extent do you think this person could display the following traits (presented in random order):

16. Hardworking
17. Intelligent
18. Friendly
19. Logical
20. Assertive

21. Emotional

You will now see a short video clip from a movie or TV show and be asked to give your impressions of the clip and the character it features. Please watch and listen to the entire clip before providing your impressions.

[Randomly assigned show/movie clip]

9. Have you heard of this movie/show before?

1. Yes, I have heard of it before
2. No, I have not heard of it before
3. I'm not sure

10. Have you seen this movie/show before?

1. Yes, I have seen all of it
2. Yes, I have seen some of it
3. No, I have not seen any of it
4. I'm not sure

The clip that you saw contained several characters. For the questions on the next page, we are interested in your impressions of the following character: [present name and photo of main character]. As you answer the following questions, keep this character in mind.

11. The main character does not represent a typical person with these abilities.

12. How typical is the main character of geniuses in general? [R]

13. How typical is the main character of [chess prodigies/ mathematicians] in general? [R]

Returning to your overall impressions of the clip, please indicate how much you agree with the following statements (strongly disagree - strongly agree)

14. The dialogue in the movie is realistic and believable.

15. The setting for the story just doesn't seem real.

16. People in this story are like people you and I might actually know.

17. The way people really live their everyday lives is not portrayed very accurately in this story.
18. The events in the movie could happen like this in reality.
19. This story shows that people have both good and bad sides.
20. I have a hard time believing the people in this story are real because the basic situation is so far-fetched.
21. This story deals with the kind of very difficult choices people in real life have to make.

This clip is taken from a longer [show/movie].

1. Based on what was in the clip, how likely do you think it is that the movie/show is trying to get people to think a certain way? (not at all likely to extremely likely)
2. The movie/show seems interested in changing people's opinions. (agree/disagree)

Demographics

9. What is your gender? (you may choose all that apply)
 - a. Man
 - b. Woman
 - c. Nonbinary/3rd gender
 - d. Transgender
 - e. Gender not listed above
10. What is your race? (you may choose all that apply)
 - a. White
 - b. Black or African American
 - c. Hispanic/Latinx
 - d. Asian
 - e. American Indian or Alaska Native
 - f. Native Hawaiian or Pacific Islander
 - g. Race not listed above
11. What is your age? (open response)
12. Last year, what was your total family income from all sources before taxes?
 - a. Less than \$20,000
 - b. \$20,000 – \$34,999

- c. \$35,000 – \$49,999
- d. \$50,000 – \$74,999
- e. \$75,000 – \$99,999
- f. Over \$100,000

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