Parasocial Presence: How the Affordances of Contingency and Personalization Influence Prejudice-Reducing Interventions

Dissertation

Presented in Partial Fulfillment of the Requirements for

the Doctor of Philosophy in the Graduate School of The Ohio State University

By

Michael Gilbert

Graduate Program in Communication

The Ohio State University

2022

Dissertation Committee

Dr. Teresa Lynch

Dr. Emily Moyer-Gusé

Dr. Hillary Shulman

Abstract

This dissertation tests how contingency and personalization influence the way audiences engage with outgroup media characters. It is argued that the affordances of contingency and personalization can make exposure to media characters more akin to face-to-face social interaction. by experiencing social presence and parasocial interaction (PSI). As such, media with contingency and personalization should better elicit the psychological states of social presence and PSI will allow audiences to like these transgender media characters, which in turn reduces prejudice towards transgender people. After pretesting a stimulus that manipulates these affordances, a 2 (high contingency v. no contingency) x 2 (high personalization v. no personalization) factorial experiment was conducted on an online adult population. Results suggested that media with contingency caused audiences to experience more social presence and PSI. The personalization manipulation did not. Experiencing social presence predicted more liking of a transgender media character and lower prejudice towards transgender women. PSI predicted higher prejudice towards transgender women. Several theoretical implications and reflections are discussed.

Acknowledgements

In the process of writing this dissertation, I have received a great deal of advice and support.

First, I would like to thank my advisor, Dr. Teresa Lynch for her guidance, mentorship, and patience as I formulated my research question, designed a study, and evolved into the scholar I am today.

Second, I would like to thank my peer and friend Stacey Jones for providing voice acting for the media stimuli in this study. This project could not have been completed without you.

Third, I would like to thank Void for their amazing work developing such great art for the stimulus. Many participants and fellow researchers complimented your amazing animation.

I would also like to thank Dr. L. Monique Ward for her guidance and mentorship, which is what got me excited about my research area and set me on the path towards this dissertation to begin with.

In addition, I would like to thank Johan, Ashanna, Sophia, Zula, Eanslad, Elric, Syran, and Constantine for their support through daily fun and weekly game nights. I would also like to thank my friends Shannon, Trey, Austin, Sarah, Bobby, Eri, and Brian for their friendship and support.

Vita

June 2010: Grosse Point South High

May 2016: B.S. Psychology, University of Michigan

May 2021: M.A. Communication, The Ohio State University

August 2016 to present: Graduate Teaching Associate, School of Communication, The Ohio State University

Publications

Lynch, T., Matthews, N. L., **Gilbert, M.,** Jones, S., & Freiberger, N. (2022) Explicating How Skill Determines the Qualities of User-Avatar Bonds. *Frontiers in Psychology*, *13* 1-12. https://doi.org/10.3389/fpsyg.2022.713678

Gilbert, M., Lynch, T., Burridge, S., & Archipley, L. (2021) Formidability of Male Video Game Characters over 45 Years. *Information, Communication, & Society*. https://doi.org/10.1080/1369118X.2021.2013921

Gilbert, M. A., Ward, L. M., & Giaccardi, S. (2018). Contributions of game genre and masculinity ideologies to associations between video game play and men's risk-taking behavior. *Media Psychology, 3,* 437-456. https://doi.org/10.1080/15213269.2018.1450153

Fox, J., **Gilbert, M.,** & Tang, W. Y. (2018). Player experiences in a massively multiplayer online game: A diary study of performance, motivation, and social interaction. *New Media & Society, 20,* 4056-4073. https://doi.org/10.1177/1461444818767102

Bond, R. M., Shulman, H. C., & **Gilbert, M.** (2018). Does having a political discussion help or hurt intergroup perceptions? Drawing guidance from social identity theory and the contact hypothesis. *International Journal of Communication*, *12*, 4332-4352. https://doi.org/1932–8036/20180005

Fields of Study

Major Field: Communication

Contents

List of Tables

List of Figures

Chapter 1: Introduction

Understanding how people view themselves or others has been of interest to social scientists for a long time. Part of the way people develop their own self-concepts and evaluate others is through social identities. *Social identities* are pieces of an individual's self-concept that they derive from perceived membership to different groups (e.g., race, gender, social class; Tajfel & Turner, 1979). Social identities are important because they give people a source of pride, self-esteem, and identity (Tajfel & Turner, 1979).

Yet, social identities can also lead to deleterious outcomes. Everyone has attitudes and beliefs about different social groups (e.g., Allport, 1954; Hogg, 2000; Tajfel & Turner, 1979), and sometimes these have negative consequences. *Prejudices* are generalized attitudes about different social groups (Allport, 1954). Prejudices are harmful because they can create tensions between social groups (Pettigrew, 1998; Stephan & Stephan, 1984) or lead to discriminatory behavior (Allport, 1954; Fiske, 1998) and even violence against disliked groups (Allport, 1954; Franklin, 2000). These negative outcomes are especially true for prejudice against marginalized communities (e.g., Gordon & Meyer, 2007). As such, finding ways to reduce or eliminate prejudicial attitudes would have important implications for the lives of many people.

One of the ways that scholars have studied prejudice reduction is through *intergroup contact*, meaning exposure to individuals who fall outside one's own social categories. *Contact* itself is a broad term and has been studied in contexts ranging from simply knowing that people have outgroup friends (e.g., Wright et al., 1997) to intimate social encounters and friendship (e.g., Pettigrew, 1998) Others seem to define contact differently (e.g., Hewstone & Brown, 1986), but this dissertation will define *contact* as exposure to an individual (Harwood & Joyce, 2012), unless discussing another scholar's definition.

More recently, scholars have been interested in studying how contact with outgroup media characters can reduce prejudice. This is appealing, as it opens many avenues for prejudice reduction. Researchers have long noted that audiences can engage with media characters in manners akin to social interaction (e.g., Horton & Wohl, 1956). Of note, the parasocial contact hypothesis outlines how exposure to outgroup media personae can reduce prejudice. Because media personae can serve as stand-ins for real people, audiences can have intergroup contact with media characters (Schiappa, Gregg, & Hewes, 2005).

The parasocial contact hypothesis is valuable because it demonstrates the prejudice-reducing effects of media exposure, especially for those who otherwise would not have the chance to make personal contact with real outgroup members (Bond & Compton, 2015). Yet, this dissertation posits the theoretical framework has not tapped its full potential and seeks to advance it in multiple ways. First, it will attempt to align the parasocial contact hypothesis more with its parent theory, intergroup contact theory (Pettigrew, 1998), by considering important moderators known as the optimal contact conditions. These have been consistently shown to improve the effectiveness of intergroup contact at reducing prejudice (Pettigrew & Tropp, 2006). Additionally, this dissertation will consider the *salience* of social identities (i.e., how cognitively accessible social identities are) in ways that also align with intergroup contact theory. Third and most importantly, this dissertation will consider how the *affordances* of media (i.e., action potentials between users and technology), namely contingency and personalization, can enhance the effectiveness of prejudice reducing interventions. By affording contingency and personalization, this study aims to cause audiences to perceive media exposure to be more like an interpersonal social encounter via psychological experiences of parasocial interaction and social presence.

To introduce these ideas, this dissertation will follow the following structure. In the next chapter, it will define prejudice, discrimination, and stereotyping before detailing the parent theory to much intergroup contact work, the contact hypothesis (Allport, 1954), in Chapter 3. Next, it will outline some criticisms of that theoretical framework before describing its successor theory, intergroup contact theory, in Chapter 4. After this, Chapter 5 will explicate parasocial interaction to provide context before introducing the parasocial contact hypothesis (Schiappa, Gregg, & Hewes, 2005). Chapter 6 will also outline criticisms of the parasocial contact hypothesis. Finally, in Chapter 7 and Chapter 8 this dissertation will consider how the affordances of contingency and personalization can ameliorate some concerns surrounding the parasocial contact hypothesis.

To test the ideas presented in Chapter 7, this dissertation will detail an experiment where participants watched two short vignettes with a transgender media character. The first video introduced a transgender character without making her identity apparent. The second video revealed her transgender identity. Additionally, to consider the roles of contingency and personalization, this study manipulated two factors. First, it manipulated whether the character *adjusts* their performance (i.e., changes their messaging based on audience feedback) to examine how contingency changes audience experience with media. Second, it manipulated whether the character *addresses* the audience (i.e., faces and speaks to the audience) to examine the role of personalization in media experiences. After interpreting the results, this dissertation will conclude by considering the implications of the findings and future directions for the research paradigm presented here.

Chapter 2: Prejudice, Stereotyping, Discrimination, and Intergroup Processes

Everyone has *social identities*, which are parts of the self-concept derived from perceived membership to different groups (Tajfel & Turner, 1979). People find pride, value, and a sense of belonging from their social identities, which leads to people usually being biased towards their own *ingroups*, which are social groups that people view themselves to be a part of (Tajfel & Turner, 1979; Turner et al., 1987). In contrast, this leads people to sometimes form generalized attitudes and beliefs towards *outgroups*, which are social groups distinct from one's perceived social identities (Hewstone & Brown, 1986). Events that occur between members of social groups are described as *intergroup* interactions.

People are members of many social categories at once, so ingroup and outgroup distinction depends on which social identity is *salient,* meaning brought to the forefront of cognition (Macrae & Bodenhausen, 2000). Because self-worth is partially derived from one's social identities, we tend to bias our perceptions in favor of our own ingroup and find faults with outgroups to maximize positive distinctiveness (Hogg, 2000; Tajfel & Turner, 1979). In other words, people are incentivized to have more negative attitudes towards outgroup members to enhance their own sense of self-value. Because people favor their ingroups over outgroups, oftentimes when different social groups come into contact, this leads to deleterious outcomes such as conflict, social stratification, or even violence (Tajfel & Turner, 1979). Thus, many social scientists strive to better understand intergroup processes to prevent these consequences.

This chapter will follow the following structure. First it will define prejudice, stereotypes, and discrimination, which are necessary terms to understand the intergroup literature and this dissertation. Once these key terms have been defined, this chapter will detail how people are

categorized as ingroup or outgroup members and how this categorization leads to the application of stereotypes, prejudices, and discriminatory behavior.

Prejudice, Stereotypes, and Discrimination

People partially base their own self-worth based on their group memberships. According to social identity theory (Tajfel & Turner, 1979), people will categorize themselves and others based on their group memberships. When people see others who are like them in some capacity, they are considered an ingroup member. Conversely, those viewed as different are considered outgroup members. To determine whether someone is part of an ingroup or an outgroup, they first must be *categorized*, meaning they are sorted based on their group memberships (Macrae & Bodenhausen, 2000; Turner et al., 1987). When evaluated in this way, knowledge structures about the relevant social group are activated. These knowledge structures inform what people believe about social groups (i.e., *stereotypes*), which in turn informs attitudes about social groups (i.e., *prejudices*) and group-based behaviors (i.e., *discrimination*). In short, prejudices are thought to arise from stereotypes.

Much of the work on intergroup phenomena can be traced back to Gordon Allport. He was primarily interested in the formation, maintenance, and reduction of *prejudice*, which he defined as incorrect or inflexible negative feelings about a person based on their group membership(s) (Allport, 1954). Allport states that prejudice is an inherent feature of human psychology, born of a need to defend one's ingroups rather than a desire to hate outgroups. According to Allport, prejudice arises because people wish for order and concrete answers, thereby reducing uncertainty. Thus, they form generalizations about different groups of people to provide this stability, even if generalizations are misguided or completely unfounded. Everyone has prejudices, but some people are more predisposed to develop prejudicial attitudes than

others. For example, people who more strongly desire structure are more inclined to prejudice (e.g., Roets & Hiel, 2011).

Allport claims negative attitudes towards a group should only be classified as prejudice if those attitudes are not changed by evidence. In this view, prejudiced individuals will hold onto preconceived notions even when contradicted by facts (Allport, 1954), whereas those who may be receptive to new information can be classified as *ignorant*, meaning they lack knowledge, experience, or information. When exposed to this new information, those who are not prejudiced will adjust their attitudes according to Allport (1954). Later scholars have noted that ignorance can be just as harmful as prejudice (e.g., Thornicroft, Rose, Kassam, & Sartorius, 2007) and that ignorance is often a cause of prejudice in its own right (Macrae & Bodenhausen, 2000; Stephan & Stephan, 1984). Still, there is a distinction between prejudice born of ignorance and more deep-seated prejudices, but ultimately both are classified as prejudice. This dissertation will conceptualize *prejudice* as generalized attitudes about a person or group of people based on their group memberships.

Allport also drew strict distinctions between prejudice and other related concepts. *Stereotypes* refer to overgeneralized beliefs about a group (e.g., Allport, 1954; Dovido, Hewstone, Glick, & Esses, 2010; Thornicroft et al., 2007). *Discrimination* is defined as differential behavior directed toward other(s) based on their group memberships (Allport, 1954; Thornicroft et al., 2007). Although stereotyping, discrimination, and prejudice are distinct concepts, it is important to acknowledge their relatedness. Oftentimes, people will discriminate due to prejudicial attitudes. Similarly, prejudices can arise because unfavorable stereotypes foster a negative attitude towards a group.

Prejudice (e.g., Eagly, 2004), stereotyping (Kay et al., 2013), and discrimination (Hellman, 2008) are sometimes conceptualized as exclusively negatively valenced. Yet, all three concepts are ambivalently valenced, meaning one can have positive or negative prejudices. For example, research has identified positive prejudices and how those attitudes are harmful to the target group (e.g., the women are wonderful effect; Eagly & Mladinic, 1994). It is important to remember that prejudice can be both positive and negative, even if researchers primarily focus on negative attitudes.

Categorization and Prejudice

To target individuals with stereotypes and prejudicial attitudes, people first must categorize others based on their social identities. One way people evaluate and distinguish between social groups is by forming expectations for how different groups should behave and characteristics those groups should have. According to self-categorization theory (Turner et al., 1987), a partner theory to social identity theory, people evaluate others across a spectrum of identity. People are *individuated* when they are assessed based on their unique characteristics as a person. Yet, people can also evaluate others based on their social identities. When people are thinking of others as members of a social group (i.e., part of a whole) instead of as unique individuals, they are *depersonalizing* them. Like distinctions between ingroups and outgroups, depersonalization relies on salient social identities.

When depersonalizing others, people rely on group *prototypes*, to inform their expectations about those others. Prototypes are fuzzy, abstract amalgams of characteristics typical members of different social groups are expected to have (Hogg, 2000). Prototypes are used to evaluate to ingroup and outgroup members (Hogg, 2000). Those who are viewed to be most like their group prototype tend to be evaluated more favorably (Hogg, 2000). When

individuated, group prototypes are less important for evaluations of others. Yet, people have a tendency to homogenize outgroup members more than ingroup members, relying on the prototype to guide expectations for the traits outgroup members should have (Hogg, 2000). These are essentially stereotypes.

It is more cognitively efficient for people to view and form impressions of others based on their social groups (e.g., gender, sex, race) because individual person perception is challenging and cognitively intense (Macrae & Bodenhausen, 2000). When someone is thinking about others categorically, the way those others are perceived is guided by one's *knowledge structures* (i.e., information known or believed to be true about a subject) about their social groups. These knowledge structures give rise to expectations about the qualities an observer believes outgroup members should have, much like prototypes (Hogg, 2000). Based on these expected qualities, people may be predisposed to evaluate outgroup members positively or negatively. In other words, prejudice can stem from stereotypes about group members.

Macrae and Bodenhausen (2000) break stereotyping into two steps. First, knowledge structures are activated, where stereotypes about a group are made salient. Second, these activated categories are applied, guiding perceptions and expectations for the encounter with an outgroup member. Macrae and Bodenhausen (2000) argue that suppression of biased knowledge structures (i.e., stereotypes) is a crucial step to controlling prejudice. Indeed, in scenarios where group categorizations are not primed, even individuals with strong, negatively valenced prejudices can have more positive evaluations of outgroup members (e.g., Claypool & Bernstein, 2014).

There has been some debate over how automatic category activation is. Earlier work (e.g., Allport, 1954; Devine, 1989) argues that social categorizations are automatically applied

when encountering someone based on their group membership, with additional debates over which social category or categories are made salient when multiple identities are visible simultaneously (e.g., gender, race, age). Macrae and Bodenhausen (2000) note that categorical knowledge structures, which include stereotypes, are activated more strongly by groups a person is prejudiced towards. When these knowledge structures are suppressed or inhibited (e.g., by making a different social identity salient) the expression of prejudice is also reduced (Macrae & Bodenhausen, 2000; Sinclair & Kunda, 1999). For example, if someone is racially prejudiced, making gender salient should theoretically reduce the salience of racial stereotypes and prejudices. Activating knowledge structures is an important step in applying prejudicial attitudes towards outgroup members. If knowledge structures are not activated, the outgroup member should not be targeted by prejudicial attitudes.

Secondly, the activated social categories must be applied to outgroup individuals, guiding expectations for an intergroup encounter. In other words, once knowledge structures are activated, people will take that information and use it to conceptualize an idea of how an interaction with an outgroup member might go. For example, individuals who encounter an outgroup member may expect stereotypic behavior based on their stereotypes or may expect a negative interaction based on their prejudices. Applications not only inform people on what to expect, but also on how to process counterstereotypic information. Some (e.g., Hugenberg & Bodenhausen, 2004; Wittenbrink et al., 1997) argue that category applications are not automatic and are more common in situations where motivation or ability to process outgroup membership deeply is low. The automacy of category application is particularly relevant for counterstereotypic information (i.e., information that goes against pre-existing beliefs about a group), which is cognitively taxing to process (Macrae & Bodenhausen, 2000).

In summary, this chapter has presented an overview of some key elements. Namely, it has defined and discussed stereotypes, discrimination, and especially prejudice, and how these elements relate to important intergroup processes. It has also gone over how prejudices and stereotypes feed into each other, such as how stereotypes can cause individuals to develop or harbor prejudices against outgroups. These ideas will be important in the coming chapters, including the next one. The following chapter will discuss the contact hypothesis, the parent theory of much of the intergroup work that is being conducted today.

Chapter 3: The Contact Hypothesis

One of the more notable contributions of Allport's *The Nature of Prejudice* (1954) is the contact hypothesis, a theoretical framework outlining a consistent way to reduce prejudice that is still discussed today (e.g., Paluck, Green, & Green, 2019). The contact hypothesis stipulates that under certain conditions *intergroup contact,* which Allport (1954) defined as social encounters between members of disparate social groups, will reduce prejudice directed toward the involved groups. The contact hypothesis forms the basis of much contemporary theorizing on intergroup contact, including intergroup contact theory (Pettigrew, 1998; see Chapter 5), the extended contact hypothesis (Wright et al., 1997; see Chapter 5), and the parasocial contact hypothesis (Schiappa et al., 2005; see Chapter 7).

This chapter will contain two larger subsections. It will first cover the assumptions and tenets of the contact hypothesis. Next, it will cover some criticisms of the contact hypothesis as originally written. In particular, this chapter will discuss the meaning of contact and the value of contact, which will set the stage for discussion of the advances made by later theorizing.

Assumptions of the Contact Hypothesis

The contact hypothesis operates under a few assumptions. Given its focus on reducing prejudice towards other groups, the contact hypothesis assumes that people are aware of their own group membership(s) and are aware of the group memberships of others. Allport (1954) claims that prejudices "condense" around visible cues (p. 135). Given the predominant focus on face-to-face contact with racial outgroups in initial studies about prejudice, this assumption would largely hold for this early work. Individuals quickly categorize others based off physical appearance, with some categories such as sex and race being more quickly accessible than others (Macrae & Bodenhausen, 2000; Sherman, Macrae, & Bodenhausen, 2000). Thus, for categories

like these, group membership is highly visible and hard to hide in face-to-face contexts. Sometimes, individuals are miscategorized based on their physical features (e.g., Stepanova & Strube, 2012). However, such individuals are still placed into ingroup or outgroup categories based on these physical features and initial impressions, which means prejudices can be activated (Macrae & Bodenhausen, 2000).

Optimal Contact Conditions

According to Allport (1954), the contact hypothesis has four boundary conditions that must be met to see consistent, long-lasting prejudice reduction. Subsequent research and theorizing suggest that contact that fails to meet these conditions can still reduce prejudice (e.g., Dixon, Durrheim, & Tredeaux, 2007; Pettigrew, 2021; Pettigrew & Tropp, 2006), but is less effective (Pettigrew & Tropp, 2006) and falls outside the purview of the original theory as written (Pettigrew, 2021). These conditions have come to be known as the *optimal contact conditions*. The first condition is equal status among interactants, regardless of group membership. Based on one study, Allport (1954) concludes that contact with outgroup members "*of equal status* tend to make for lessened prejudice" (p. 276) There is some disagreement about what Allport meant by equal status (Amir, 1976). Contemporary scholars assume he meant that individuals in the contact situation should *perceive* that each group member has equal status within that specific scenario (Pettigrew & Tropp, 2005); status in society more broadly is less central when considering this condition. Research has shown that situations perceived as equal by one group are not always perceived that way by the other group (e.g., Robinson & Preston, 1976; Sigelman & Welsch, 1993). In these situations, the group that perceives equal status may see reduced prejudice towards their outgroup. However, groups that do not perceive equal status will not reap the same benefits.

Second, both groups should share a common goal. When different groups are both working towards the same objective, this can cause them to view each other as part of the same ingroup (Gaertner et al., 1996). Two groups striving for the same objective is not sufficient on its own. Intergroup cooperation is the third tenet, stipulating that for intergroup contact to effectively reduce prejudice, the groups in the contact situation must work together interdependently towards said common goal. Some other research suggests that mere cooperation is not sufficient for reducing prejudice. If someone views an outgroup member as deficient or less capable than their ingroup, they will reject that person's aid and have negatively valenced attitudes towards them and their group (Vanman et al., 1997). This suggests both groups must contribute meaningfully to the shared goal.

Finally, Allport's (1954) fourth condition stipulates that an intergroup contact must have institutional support, meaning surrounding authority endorses the contact. In essence, contact is most effective when authority figures establish norms that promote intergroup mingling and dissuade prejudice or discrimination. For example, one study found that intergroup contact with non-Muslim Australian schoolchildren and Muslim schoolchildren most effectively reduced prejudice when children had parents who endorsed such contact (Ata, Bastian, & Lusher, 2009). Research testing this specific tenet is rare given that social norms and institutional positions on intergroup contact largely fall outside of researcher control (Kende, Tropp, & Lantos, 2017).

With these four tenets come some additional implied assumptions. First, there is an implicit assumption that the groups in a contact scenario are part of a status hierarchy. It is, after all, impossible to be of equal status if neither group has a metric by which to compare each other. Additionally, because two tenets involve cooperating towards a common goal, there is an underlying assumption that the two groups have a common goal through which cooperation is

possible. Finally, the tenet of institutional support implies that there is a social institution under which any intergroup contact is occurring. Most contact will occur in a space governed by someone (e.g., a government), but that institution is not always relevant to the contact at play, and in some spaces (e.g., online forums) the influence of institutions may be lessened.

When contact occurs under these four conditions, attitudes toward the outgroup should improve and prejudice should be reduced. Indeed, early studies testing the contact hypothesis lent strong support to Allport's four tenets. In one early example, Sherif and colleagues (1961) put adolescent boys into different groups at a summer camp in a watershed experiment now called the Robber's Cave experiment. At first the boys in different groups were derogatory and sometimes hostile towards each other. When both groups of boys wanted to leave the camp one day but only had one truck to do so, they were forced into a scenario where Allport's conditions were met. First, despite being hostile towards each other, both groups of children were of equal status at the camp. Additionally, they were given a common goal and encouraged to work cooperatively to reach their shared goal of going out of camp. Finally, the researchers encouraged interaction between the two groups, thus meeting the final necessary condition: institutional support. After this event the two groups got along much better, which was argued to demonstrate lessened prejudice between the groups (Sherif et al., 1961).

Since that early work hundreds of studies have examined the contact hypothesis (for reviews, see Paluck et al., 2019; Pettigrew & Tropp, 2006), and many meta-analyses have been conducted amassing this research. Pettigrew and Tropp (2006) conducted a meta-analysis of over 500 studies with 713 total independent samples to assess how effective intergroup contact was at reducing prejudice both within and outside of Allport's optimal conditions. They had three main inclusion criteria. Studies had to be experiments or correlational studies where prejudice was

measured and intergroup contact was either measured or manipulated. Second, the studies had to assess contact between what the authors judged to be discrete groups (e.g., race), not groups with potential overlap (e.g., employers). Third, Pettigrew and Tropp only included studies where contact was directly observed or completely unavoidable, such as in diverse classrooms. This eliminated many studies that used methodologies popular at the time, such as using physical proximity (e.g., sharing an apartment building) as a proxy for contact. This meta-analysis found that overall intergroup contact was effective, particularly under Allport's conditions. Pettigrew and Tropp (2006) further analyzed a subset of studies that they deemed to be more rigorous work (e.g., experiments, studies that used of control groups, studies with high quality contact measures or manipulations) and found stronger effects in this subset. Overall, effects were heterogeneous, meaning not all interventions were equally effective.

Other meta-analyses are similarly supportive of contact effects. One identified that intergroup contact's effect on prejudice reduction is mediated by enhanced knowledge of the outgroup, increased empathy towards the outgroup, and reducing anxiety about future contact (Pettigrew & Tropp, 2008). To conclude, a plethora of research has shown strong support for Allport's (1954) contact hypothesis. Yet, the hypothesis has spawned plenty of criticisms and rebukes to some of its claims.

Criticisms of the Contact Hypothesis

What Constitutes Contact?

Although the contact hypothesis has been well-supported over the decades (Pettigrew & Tropp, 2006), many prominent criticisms have also arisen. In their overview of the intergroup contact literature, Hewstone and Brown (1986) lay out some ambiguities and issues with the field. One key conceptual critique is that it is unclear what *contact* is (Halualani et al., 2004).

Allport (1954) did not explicate contact in depth, but seemingly defined intergroup contact as social communication and interaction between members of different social groups (Hodson & Hewstone, 2013). Yet, more recent work on intergroup contact (e.g., Wright et al., 1997) raises questions about whether contact needs to be so involved to reduce prejudice.

Beyond Allport's definition, intergroup contact can be broadly defined as exposure to an outgroup member (Harwood & Joyce, 2012). This encapsulates a broad range of potential scenarios. At an extremely distal level, contact can mean being in the same room as someone, or even just knowing that a friend has an outgroup friend (Harwood, 2010; Wright et al., 1997). In more intense contact, people may repeatedly interact with each other and form deep intergroup friendships (e.g., Pettigrew, 1998). By using a term that encompasses such a broad array of social encounters, it is unclear what type of contact is better or worse than others at reducing prejudice, or if all types of contact are considered equally viable.

For their part, Hewstone and Brown (1986) appear to use the terms *contact* and *interaction* interchangeably, suggesting that they view contact and interaction as synonymous. Yet, in other contexts *interactions* are considered to be a subtype of contact where those involved in the social encounter exchange messages with each other. Goffman (1963) further broke social interaction into two separate types. *Unfocused interaction* refers to encounters with others where each interactant is not treated as a unique individual. For example, an exchange with a store clerk does not require tailoring the interaction to the individual store clerk; that clerk is essentially interchangeable with any other in the store.

In contrast, *focused social interaction* (*social interaction* for the purposes of this dissertation) goes deeper, and encompasses encounters where interactants share a mutual acknowledgement, share mutual attention, and engage in conversation. Put another way, focused

social interaction has relational consequences (Hall, 2018) and will influence the way interactants feel about each other. Thus, individuating someone is considered a mandatory element of social interaction, as that is required for an encounter to have relational meaning and relational consequences (Duck, 1991). These elements are important to consider as scholars dissect the differences between true *interaction* and *contact*, yet this has not been done in-depth in the intergroup contact literature.

Other theoretical cornerstones in the intergroup literature similarly imply a synonymity between contact and interaction, and sometimes go even further. In intergroup contact theory, Pettigrew (1998) emphasizes the importance of intergroup friendships. For a friendship between two people to develop, repeated reciprocal interaction is necessary (Hallinan, 1978). Friendship formation with no social interaction is impossible. These ideas are especially true for intergroup friendships (Kudo & Simkin, 2003). Thus, by stating that friendship is one mechanism through which intergroup contact reduces prejudice, this implies that intergroup social interaction is necessary.

These ambiguities matter because given the range of definitions and operationalizations of contact in the intergroup literature (MacInnes & Page-Gould, 2015), it is difficult to ascertain what constitutes effective intergroup contact (Halualani et al., 2004). Not all contact is a social interaction. Not all social interaction leads to friendships. Yet, the theorizing implies that social interactions are the most effective types of contact at reducing prejudice, especially when such interaction leads to bonds like friendship (Pettigrew, 1998). Studies examining *contact* (i.e., not social interaction) found these more superficial social encounters still reduce prejudice (e.g., Braddock, 1980; Dowd 1980; Pettigrew et al., 2006; Robinson, 1980). Other studies have shown that knowing about other people having intergroup contact may be similarly effective at reducing

prejudice (Wright et al., 1997). It is thus important to clarify if outcomes from more involved contact (e.g., face-to-face social interaction and friendships) differ from less involved contact (e.g., being in the same class as an outgroup member) or indirect contact (e.g., imagining an intergroup interaction) as some have theorized (Harwood, 2010; MacInnes & Page-Gould, 2015).

Contemporary Conceptualizations of Prejudice

Although his work remains influential, some elements of Allport's conceptualization of prejudice have fallen under scrutiny by contemporary scholars. For example, others have argued that prejudice is not innate as Allport claimed but is instead born of sociohistorical contexts and suggest that Allport's definition essentially excuses prejudicial attitudes (Gaines & Reed, 1995). In a later paper, the same authors point out that initial work on prejudice was biased towards a European perspective of race and ethnicity (Reed & Gaines, 1997), as many European scholars looked to study race relations in the United States specifically. Thus, the theoretical underpinnings and explications of prejudice may be skewed towards a Western perspective. This U.S.-centric focus is a broader issue that pervades the study of prejudice against many kinds of groups, such as those formed along the categories of gender and sexual orientation (e.g., Hegarty & Rutherford, 2019). As a result, scholars note that prejudice reducing interventions tend to be more effective for dominant groups (Pettigrew et al., 2011) with marginalized and underserved groups benefiting less from interventions (e.g., Hegarty & Rutherford, 2019; Reed & Gaines, 1997).

Assumptions & Tenets

Some other criticisms are levied at the original assumptions of the contact hypothesis. For example, there is an implicit assumption that outgroup social identities are obvious (e.g., race; Allport, 1954). However, frequently studied social identities (e.g., sexual orientation; Bond &

Compton, 2015), are not immediately apparent based on physical appearance and can be masked. These group memberships may be communicated or signaled through language, self-expression, or third parties, but initial impressions will not always reveal one's group membership. Additionally, in mediated contexts that potentially convey less information than face-to-face contexts studied by Allport (1954), identities may not always be readily identifiable (e.g., email). In such spaces, categories are less obvious and may never become apparent. If social identities are not obvious, this means that contact between two groups may not register as intergroup contact.

In a related critique, Allport (1954) assumes that prejudicial attitudes arise from a particular cognitive style that tends towards quick, definitive categorization of others, which in turn informs attitudes (i.e., need for closure; Roets & Van Hiel, 2011). Allport argues that this causes people with a prejudice-prone personality to look for differences that would categorize others as an outgroup member. For example, a prejudiced White man would immediately categorize a Black man as outgroup and apply prejudicial attitudes based on the racial identity, even though they shared a gender identity.

Yet, work that followed Allport (1954) demonstrates that the salient identity at any given time is dependent on context, even among prejudiced individuals (Macrae & Bodenhausen, 2000). People have many social identities (e.g., race, gender, sexual orientation, nationality), and not all are salient at any given time (e.g., Macrae & Bodenhausen, 2000). For example, in one of the earliest studies examining the effects of intergroup contact, researchers found that White and Black coal miners worked well together but expressed prejudicial attitudes towards each other when no longer working (Minard, 1952). Some guessed that this may be because prejudice reduction does not generalize to new contexts (Hewstone & Brown, 1986). Yet, it is also

plausible that the salient group membership when working (i.e., coal miner) is different than the one that researchers assumed would be salient (i.e., race). Because the coal miner identity is most relevant when working, this would cause people to categorize themselves and others based on that identity, not their racial identity. This means everyone working in the mines would feel they were in the same ingroup if their coal miner identity was salient, including the racially prejudiced miners (Roets & Van Hiel, 2011). Therefore, the contact that occurs in the mines would not be perceived as intergroup by those involved, even if a social identity (i.e., miner) is salient. Work using the contact hypothesis needs to further consider how to ensure relevant social identities are salient during intergroup contact.

A more recent criticism is that institutional support, the fourth optimal contact condition, may not lead to prejudice reduction with the consistency Allport (1954) purported. Some have argued that institutional support is not perceived consistently by those in intergroup contact, as social hierarchies and individual differences mean some are more subject to the influence of authority than others (Harwood, 2021). Thus, institutional support in inherently applied unequally to intergroup contact scenarios, which seemingly contradicts with another optimal condition, equal status. In terms of findings, a recent meta-analysis concluded that the presence of authority supporting intergroup contact had no influence on the effectiveness of online prejudice-reducing interventions, placing doubt on the importance of institutional support (Imperato et al., 2021). Together, these ideas cast doubt on centrality of institutional support as an optimal contact condition.

The Ecological Validity of the Contact Hypothesis

As a final criticism, some are skeptical of the applicability of the contact hypothesis. Some argue that in ecologically valid contexts the optimal conditions are rare, difficult to

maintain, and are not necessary for prejudice reduction (e.g., Dixon et al., 2007; Hewstone & Brown, 1986; Stephan & Stephan, 1984). As such, critics claim work on optimal contact as explicated by Allport (1954) is relatively inapplicable to real world scenarios. They concede that contact under these conditions does indeed reduce prejudice, but because these conditions are so rare in everyday life, interventions should focus on other contexts or other methods to improve attitudes about outgroups. In other words, these criticisms are based on pragmatic considerations of applying the contact hypothesis in actual prejudice-reducing interventions more broadly. This has implications when considering how the contact hypothesis and its derivatives can benefit society more broadly. It falls to researchers to find ways to develop interventions or identify avenues that are likely to work outside of controlled experiments.

Criticisms of the Broader Intergroup Field

Criticisms of Study Design

Other criticisms levied at the intergroup literature relate less to the contact hypothesis directly and more to the work that arose from the contact hypothesis. In one criticism, Hewstone and Brown (1986) point out that many studies grounded in the contact hypothesis fail to distinguish between prejudice and ignorance as the dependent variable. As a reminder, ignorance can lead to prejudice, but it is a theoretically distinct concept (Allport, 1954; Stephan & Stephan, 1984). Because many researchers failed to distinguish between ignorance and prejudice in their studies, Hewstone and Brown (1986) posit that intergroup contact may only indirectly reduce prejudice via reducing ignorance (Stephan & Stephan, 1984). Other prejudices, not borne of ignorance, may be unaffected by intergroup contact.

As a second methodological critique, Hewstone and Brown (1986) also point out that too few studies on intergroup contact were experiments. They note that correlational studies

consistently found that intergroup contact and prejudicial attitudes are inversely related. The authors of such studies argue that this shows intergroup contact reduces prejudice. Yet, because contact was not manipulated, an alternative explanation is that those with less prejudice were more likely to engage in intergroup contact. Correlational studies (e.g., Braddock, 1980; Dowd 1980; Robinson, 1980) could not distinguish between these explanations. In the decades since this particular criticism first arose, many new experimental studies have more firmly established that intergroup contact does indeed reduce prejudice (e.g., Kende et al., 2018; Pettigrew & Tropp, 2008; Pettigrew et al., 2011), although many still conduct correlational studies as well.

The Distinction Between Interpersonal and Intergroup Contexts

Finally, Hewstone and Brown (1986) also criticized the fact that many scholars who study intergroup contact did not consider whether their operationalizations of contact were viewed by participants as intergroup or interpersonal. This critique, they argue, is among their most important of intergroup contact research (Hewstone & Brown, 1986). Allport (1954) himself notes that contact, even intergroup contact, is not always defined by people's social identities. Sometimes no social identities are salient, and people are perceived as individuals (i.e., individuated). These are *interpersonal* contexts. In interpersonal scenarios, attitudes about social groups would not be activated or applied, and cannot be changed (Hewstone & Brown, 1986; Macrae & Bodenhausen, 2000). Yet, Hewstone and Brown (1986) note that oftentimes scholars (e.g., Hoffman, 1984) ignore whether those in cross-group social encounters perceive contact in a group-salient matter or not.

Drawing on social identity theory (Tajfel & Turner, 1979) and what would become known as self-categorization theory (Turner et al., 1987), Hewstone and Brown (1986) argue that social contexts vary across three dimensions that determine the extent to which said contexts will

be viewed as interpersonal or intergroup where instead people are viewed based on their group memberships. First, there must be at least two separate and perceptible social groups in the same situation (considering the domain of intergroup contact, this should always be true). Second, the degree to which group members' behavior and attitudes are homogeneous influences how any contact is perceived. Stronger group cohesion is tied to a stronger sense of intergroup interaction. Third, intrasubject variability (i.e., does one person react the same or differently to other outgroup members) also influences perceptions of the contact. More homogenized reactions lead to a more intergroup contact space.

In short, intergroup contexts guide people to assess others based on group memberships, whereas in interpersonal contexts attitudes and behaviors are based on individual characteristics and personal relationships (Tajfel, 1978; Tajfel & Turner, 1979). This means contact may not automatically be perceived as intergroup just because people from two different groups make contact; group identities must be salient, a cognitive state known now as *depersonalization* (Hogg & Reid, 2006; Turner et al., 1987). When depersonalizing others, people no longer view the others as unique, multidimensional individuals. They instead assess targets based on how closely they believe those others align to their group memberships, which is called *typicality*. When depersonalized, people view targets as relatively homogeneous with their ingroup in terms of attitudes, beliefs, and behaviors. When someone depersonalizes themselves, they act based on how they view a member of their ingroup should, as opposed to their individual values.

Hewstone and Brown (1986) argue that interpersonal contact with outgroup members is ineffective at reducing prejudice because any positive attitudes about the outgroup member will not generalize to the entire group unless a group identity is salient. Additionally, for contact with an outgroup member to generalize to the entire outgroup, that person must be perceived as

typical of said outgroup. When an individual is perceived as typical of their group, positive attitudes towards the individual can then be applied to the entire outgroup. Despite being perceived as typical, contact with such an individual should also differentiate perceptions of outgroup members, thus avoiding viewing the outgroup as completely homogeneous. This is a tension point that is difficult to resolve: outgroup members must be typical, but also different enough to heterogenize perceptions of their group.

In summary, despite its utility and enduring nature, numerous criticisms have been levied at the contact hypothesis over the years. Some have been addressed over time; others require more investigation. One theory that arose from the original contact hypothesis was developed by Allport's student, Thomas Pettigrew. His theory is called intergroup contact theory, and it is the subject of the next chapter.

Chapter 4: Intergroup Contact Theory and Indirect Contact

Although the contact hypothesis is far from perfect (Dixon et al., 2005; Hewstone & Brown, 1986), the work of Allport (1954) proved popular enough that it gave rise to many new theories. Of note, intergroup contact theory by Allport's student, Thomas Pettigrew (1998), built off the contact hypothesis and ameliorated criticisms directed at the work of his mentor. Other work took the tenets of the contact hypothesis in new directions, expanding the scope of the intergroup field. In particular, scholars began to study how *indirect contact* (i.e., contact beyond face-to-face contexts) can reduce prejudice.

This chapter will follow the following structure. First, it will outline intergroup contact theory, and some of the findings from studies grounded in this theory. Next, it will cover some of the first work on indirect contact, namely extended and vicarious contact (Wright et al., 1997).

Intergroup Contact Theory

Given the concerns raised by Hewstone and Brown (1986), it was clear that revisions and advancements in the domain of intergroup contact were needed, such as specifically defining the mechanisms through which intergroup contact works to reduce prejudice. Pettigrew (1998) responded to these concerns with intergroup contact theory, which attempts to clarify boundary conditions and explain mechanisms through which intergroup contact can reduce prejudice. In one major departure from Allport (1954), Pettigrew (1998, 2021) acknowledges that the four conditions of optimal contact (cooperation, common goals, equal status, and institutional support) are not strictly necessary for contact to reduce prejudice. Later work and syntheses support this, showing that intergroup contact that fails to meet Allport's optimal conditions still reduces prejudice, albeit inconsistently and with weaker effects (Dixon et al., 2007; Pettigrew & Tropp, 2006; Richter et al., 2006). Pettigrew emphasizes that these optimal conditions are still

important for interventions to be consistently effective, and that contact under Allport's four conditions reliably demonstrates prosocial effects.

Intergroup contact theory also proposes four mechanisms through which contact can reduce prejudice towards outgroups. The first two mechanisms, although demonstrated to be effective, are less germane to this dissertation and will thus be summarized only briefly. First, intergroup contact can cause individuals to reappraise their own ingroup, often placing less importance on their own identities. This reappraisal, in turn, is associated with less intragroup contact and more diverse contact with other groups (e.g., Verkuyten, Thijs, & Bekhuis, 2010; Wilder & Thompson, 1980). Second, intergroup cooperation can constitute a behavioral change. When prejudiced people cooperate or positively interact with the outgroup, this can create cognitive dissonance, as behavior and attitudes are not in alignment. As such, individuals may attempt to assuage this dissonance by adjusting their attitudes towards the outgroup. Note that this mechanism is less effective for those with more strongly held prejudices, who will instead reduce dissonance by ceasing the cooperative behavior.

The two other mechanisms approach influencing prejudice through two different pathways: cognitions and affect (Pettigrew, 1998). When people hold stereotypes about outgroup members, these can inform their attitudes (Macrae & Bodenhausen, 2000). Thus, the third mechanism involves learning about the outgroup in a way that changes cognitions and corrects stereotypes. To this end, three conditions are necessary. First, observed outgroup traits and behavior must contrast with the stereotype. Second, the outgroup members must be seen as typical, or else any observations will not generalize to the group (e.g., Hewstone & Brown, 1986). Third, contact under the above conditions must occur often and in multiple contexts.

Through these methods, prejudice can be reduced by combating stereotypes that can cause prejudices (e.g., Macrae & Bodenhausen, 2000).

The fourth mechanism for prejudice reduction, the most relevant to this dissertation, is through generating positive affect towards an outgroup member (e.g., positive relationships, liking) which will eventually change attitudes towards outgroups. This may seem counterintuitive. How does one develop positive affect or a positive bond with an outgroup member if prejudices discourage such associations? The solution is to first make contact when group identities are not salient (e.g., in an interpersonal context). Remember, when outgroup members are individuated or viewed outside the context of their group memberships, they are not assessed based on stereotypes or prejudices (Macrae & Bodenhausen, 2000; Turner et al., 1987). This allows positive affect (e.g., liking) or more involved bonds (e.g., friendship) to form. This is a notable departure from Hewstone and Brown (1986), who argued against the utility of interpersonal cross-group contact.

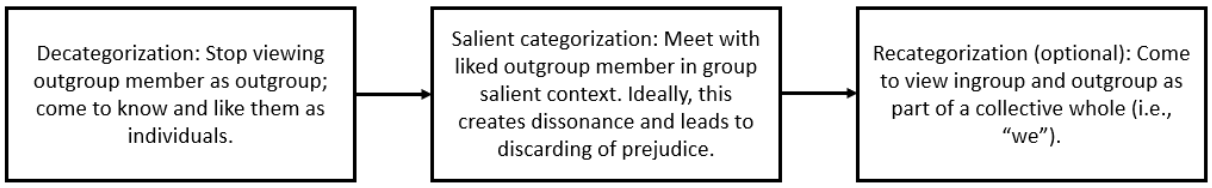
Developing positive affect towards an outgroup member is not sufficient on its own. For this positive attitude to generalize to the entire outgroup, group identities must then be made salient. After people come to like or befriend an outgroup member, the next step is to make contact in a group-salient contact. If group identities are made salient this creates cognitive dissonance. *Cognitive dissonance* refers to an unpleasant state where individuals are made aware of conflicting cognitions, affect, or behaviors (Festinger, 1962). Because the positive affect directed towards the outgroup member (e.g., liking, friendship) conflicts with the negative attitudes activated by the group-salient contact (i.e., prejudice), this creates dissonance and must be resolved somehow. Thus, if the positive affect towards an outgroup individual is strong

enough, individuals may change their attitude about the entire outgroup (i.e., discard the prejudicial attitudes) to correct the dissonance (Figure 1).

Pettigrew (1998) places special emphasis on longer-term relationships such as friendships to serve as the positive affective tie. Friendships are characterized by positive affect and a meaningful relationship with another person beyond mere familiarity (Davies et al., 2011; Pettigrew, 1998). These bonds should be stronger than mere liking in nature and are thus more likely to be maintained over the prejudicial attitudes during cognitive dissonance.

Figure 1

Path diagram for ICT's Affective Mechanism



All four mechanisms explicated in intergroup contact theory (Pettigrew, 1998) share a common theme: the importance of time. Thus, intergroup contact theory also introduces a new optimal condition for effective contact: repeated or sustained contact. Intergroup contact theory posits that for contact to reduce prejudice to the maximum extent possible, different contact contexts are needed. Applying these ideas to the fourth mechanism, to establish the positive affect towards an outgroup member initial contact should occur in an interpersonal, individuating context. Because this initial contact is not under depersonalized, group-salient conditions (Hewstone & Brown, 1986; Turner et al., 1987), the initial contact will not change attitudes about the outgroup at all. Instead, a second contact phase is necessary. During this second type of contact, the ingroup and outgroup members should already have positive attitudes about each other. Then, under conditions where group identities become salient, these positive attitudes can generalize towards the entire outgroup. As a third and final step, for maximum prejudice

reduction, *recategorization* should occur, where members of distinct groups begin to think of themselves as members of the same group (i.e., "we" instead of "us and them"). Recategorization is rare, requires extensive contact with the outgroup, and progression to this stage does not happen automatically (Pettigrew, 1998). Additionally, these three steps need not occur over three separate contact instances. There can be fewer or more, and groups need not achieve recategorization (i.e., the last step) to reap benefits; reaching the second, where the outgroup member is categorized and prejudice reduction begins to generalize, is sufficient. Thus, the amount of time needed for each stage of Pettigrew's process is variable.

Support For Intergroup Contact Theory

Meta-analyses show support for different elements of intergroup contact theory. Pettigrew and Tropp (2006) found that contact that falls under optimal contact conditions is more effective at reducing prejudice than contact that fails to meet these conditions, supporting the claim that the optimal contact conditions moderate the effectiveness of intergroup contact. Yet, contact outside the optimal contact conditions still reduces prejudice, showing that the optimal contact conditions are not strictly necessary (e.g., Dixon et al., 2005). Similarly, Hewstone and colleagues (2014) conducted a literature review and concluded the same, pointing out the positive effects of optimal contact in settings both benign (e.g., college campuses) and demanding (e.g., religious conflict in Ireland).

Tests of mechanisms proposed by Pettigrew have also found support. Longitudinal studies have shown that positive relationships such as friendships with outgroup members reduce prejudice towards those outgroups (e.g., Paolini et al., 2007; Swart et al., 2011; Titzman et al., 2015), showing some support for the affective mechanism outlined by Pettigrew. Similarly, Hodson (2011) concluded that intergroup friendships can reduce prejudice even among the

intolerant. Work examining the effect of knowledge about outgroups found it is associated with reduced prejudice (e.g., Mansouri & Vergani, 2018). Others have found that framing multiculturalism and intergroup contact as a learning opportunity makes it more effective for prejudice reduction (Rios & Wynn, 2016), showing support for knowledge about outgroups reducing prejudice.

Fewer studies have examined the effect of time on prejudice reduction (Pettigrew, 2021). The studies that consider this element are longitudinal, and often consider how intergroup friendships at one time influence prejudice at a later time. Intergroup contact theory makes no specific claims about the length of time needed to reduce prejudice, but these longitudinal studies often use long periods. For example, some assess prejudice between multiple months (e.g., Brown et al., 2007; Vezzali et al., 2018), or up to a year (e.g., Swart et al., 2011). More work is needed to determine if shorter periods of contact are also effective through the mechanisms outlined in intergroup contact theory. These studies also did not consider the effectiveness of less rich affect (e.g., liking instead of friendship).

Extended & Vicarious Contact

Despite the evolution of intergroup contact work that has addressed many issues and conceptual ambiguity, there remain pragmatic concerns about the feasibility of face-to-face interventions. Optimal conditions for intergroup contact are rare in everyday life (e.g., Dixon et al., 2007). Furthermore, intergroup contact may be difficult given the intergroup anxiety and negative stereotypes that individuals may bring to an interaction (Pettigrew, 1998; Stephan & Stephan, 1984; Voci & Hewstone, 2003). This can make it difficult for interactants to form a strong affective bond with outgroup members. Thus, alternatives to *face-to-face contact*, wherein individuals are within each other's physical presence, are enticing prospects for intergroup

scholars looking to reduce prejudice. Scholars refer to contact outside of face-to-face contexts as *indirect contact* (e.g., Dovido et al., 2011).

One type of indirect contact is *extended contact*, wherein individuals observe or learn about interactions or ties a fellow ingroup member participates in, but the individual does not participate in themselves (Wright et al., 1997). Later scholarship described *extended contact* as indirect contact in which an ingroup friend has an interpersonal tie with outgroup members (Mazziotta et al., 2011). In other words, extended contact does not require an individual to be exposed to an outgroup member themselves. Instead, the effects are derived from knowledge that a friend has an outgroup tie. Traditionally the effects of extended contact have been examined as positive relationships such as friendships, but recent work acknowledges that negative extended contact can increase prejudice towards outgroups as well (Mazziotta et al., 2015).

Vicarious contact occurs when an individual "observes ingroup members engaging in… contact with outgroup members" (Vezzali et al., 2019, p. 1060). This differs from extended contact because vicarious contact requires an observation of the outgroup interactant, whereas extended contact only requires knowledge of the outgroup member's relationship with an ingroup member. It is not clear what constitutes an observed interaction, and as such the line between vicarious and extended contact is blurry and dependent on contextual conditions (Vezzali et al., 2014). Although distinctions exist between these two phenomena, the two concepts are often merged conceptually (e.g., Vezzali et al., 2014; Wright et al., 1997).

Unlike intergroup contact theory, which focuses on one's contact, knowledge, and liking of an outgroup member, the mechanisms behind extended and vicarious intergroup contact instead rely on the ingroup *exemplar*, or high-status ingroup member (Turner et al., 1987). Wright and colleagues (1997) draw heavy inspiration from the social identity perspective (e.g.,

Tajfel & Turner, 1979; Turner et al., 1987) and as such place emphasis on the ingroup exemplar's role in extended and vicarious contact. Self-categorization theory states that people form norms about how their group should behave partially by copying exemplars. Thus, Wright and colleagues (1997) claim that when a person observes positive intergroup contact (i.e., vicarious contact) or knows an ingroup exemplar has positive intergroup contact (i.e., extended contact), that person's perceptions of the outgroup shift. This results in more positive future intergroup contact. In addition, knowing their exemplar has such positive interactions reduces intergroup anxiety about their own future contact (Vezzali et al., 2014).

Most complexly, during vicarious contact only (i.e., not during extended contact) the observer can incorporate the observed exemplar into their self-concept. The theory's claims derive from Allport's (1954) assertion that prejudice is born of favoritism for the ingroup, and not dislike of the outgroup. When individuals see ingroup and outgroup exemplars interact, group identity is primed and individuals can temporarily incorporate the ingroup exemplar into their self-concept (e.g., Turner et al., 1987). Normally, one's ingroup is part of their self-concept, and outgroup identities are not. When observing positive intergroup contact (e.g., friendships), observers can see that their ingroup exemplar is affording outgroup members positive benefits (e.g., empathy) usually reserved for ingroups. Under these circumstances, the perceived closeness of the observed friendship and the connection between the self and the ingroup member can cause "the observer to experience… the outgroup as a whole as to some degree included in her or his own self-concept (Mazziotta et al., 2011, p. 257). In essence, the outgroup "becomes part of the self" (Wright et al., 1997, pp. 76).

Research demonstrates that vicarious and extended contact reduce prejudicial attitudes. One meta-analysis concluded that extended contact is associated with reduced prejudice (Zhou et

al., 2019). Similarly, vicarious contact has also been demonstrated to be effective in a variety of contexts and with a large range of target groups (for review see Vezzali et al., 2014), including situations of potentially intense intergroup prejudices such as Israeli-Palestinian relationships. This suggests vicarious contact can reduce prejudice, not just ignorance (Mäkinen et al., 2019).

Overall, the extended contact hypothesis and its derivatives have proven fruitful for research and led to exploration of vicarious contact in other contexts. One context extended and vicarious contact have expanded into is entertainment media (e.g., Ortiz & Harwood, 2007). In this sense, extended contact is similar to the next theory of import, the parasocial contact hypothesis, although key distinctions remain.

Chapter 5: Parasocial Interaction and Parasocial Relationships

The parasocial contact hypothesis (Schiappa et al., 2005) is a key theoretical framework that informs this dissertation. Yet, before covering the parasocial contact hypothesis, it is important to understand the parasocial literature as a whole. First conceptualized by Horton and Wohl (1956), parasocial phenomena, namely parasocial interaction and parasocial relationships, have been of interest to scholars for decades. Yet, the literature on parasocial phenomenon contains conflicting definitions, tautologies, and ambiguities surrounding key terms that must be considered (Dibble et al., 2016).

To this end, this chapter will first explicate some of the key terms in the parasocial literature to provide a basis for explaining the parasocial contact hypothesis. Next, it will cover some of the ambiguities and concerns that have arisen in the parasocial field over time. Finally, this chapter will outline how more recent scholarship has addressed these concerns by reconceptualizing and operationalizing parasocial phenomena.

Parasocial Interaction

Parasocial interaction (originally *para-social interaction*) was a term first coined by Horton and Wohl (1956), who noted that when watching a television show, people would react to media personae beyond observation. For example, the audience may verbally respond to an emcee, applaud, or nod along with what a media persona says. The audience feels as if the performer adjusts and reacts to their feedback, although in reality the performer is unaware of the audience's reaction. They dubbed this phenomenon a *parasocial* interaction, as it gave the feeling and appearance of a social interaction yet was in truth one-sided.

Media of the era would facilitate this experience in audiences by making strategic production choices. To illustrate this concept, imagine a talk show with a host, Herschel. The

production team of the show can elicit parasocial interaction by making it seem that Herschel is paying attention to and speaking to the audience. They may have him speak directly to the camera or pause after asking a question, as if he was waiting for the audience to respond. Additionally, the crew may dim the lights and draw the camera in close to him to give a sense of intimacy (Horton & Wohl, 1956). Through these characteristics of the media production, audiences may get the sense that they are interacting with Herschel, even though the communication is one way and Herschel has no avenue to receive feedback from the television viewers at home in that moment. Although audiences could theoretically send letters to media producers to express their feelings, there is no way for a media persona to receive feedback from television audiences and respond in real time.

Later usage of the term *parasocial interaction* differs from the original conceptualization. The original explication of parasocial interaction emphasized perceptions that a media persona adjusted their performance based on the audience's feedback, even though the persona was not doing so (e.g., Herschel's talk show). However, subsequent conceptualizations that came after Horton and Wohl's (1956) largely downplay or discard the importance of an illusion of interaction. Rubin and colleagues (1985) and Rubin and McHugh (1987) instead conceptualized PSIs as an audience's relationships with media characters instead of as a fleeting experience of interaction. Specifically, Rubin and McHugh (1987) define PSI as a "one-sided interpersonal relationship that television viewers establish with media characters" (p. 280). This definition remains popular today. For example, in a review of parasocial literature, Giles (2002) notes that Cohen (1999) defines PSI as a viewer engaging in a relationship with a media persona. Indeed, Cohen (2014) later described PSIs as "social relationships" (p. 191). Empirical work continues to

operate using the definition popularized by Rubin and colleagues (1985) today (e.g., Ingram & Luckett, 2019; Rubin et al., 2020).

Parasocial Relationships

PSIs are not the only type of parasocial experience explicated by Horton and Wohl (1956). They also explained that audiences can form parasocial relationships with media personae. Horton and Wohl (1956) define *parasocial relationships* as seemingly face-to-face relationships between an audience member and a performer. They also provide other details. The primary characteristic of a parasocial relationship is that it is one-sided yet has qualities of a real relationship. It is described as akin to a real friendship, even though the media figure does not interpersonally know the audience member. In other words, the audience feels the relationship is real and they know the persona as they would an actual friend, but the persona has no affective bond with any audience members. Second, parasocial relationships are defined by their intimate nature, something Horton and Wohl note is encouraged by the design of television shows of that era (e.g., low lighting, spotlights on the host, disclosure of personal information). Third, parasocial relationships are described as fleeting, where the audience can engage and disengage at will. In other words, Horton and Wohl conceptualize parasocial relationships as an opt-in experience.

This third criterion notably contrasts with some of the later examples they give of such relationships. For example, Horton and Wohl (1956) discuss a woman who wrote to an advice columnist because she fell in love with a television character to the extent it was impacting her dating and social life. If parasocial relationships were fleeting and voluntary, it seems likely she would have simply opted out of such a damaging tie. It is possible that when discussing the fleeting nature of parasocial relationships, Horton and Wohl meant that parasocial interactions

could be engaged or disengaged with little effort, or that such bonds formed during a single viewing experience were different than the long-term bonds most scholars think of when discussing parasocial relationships today (e.g., Dibble et al., 2016).

The conceptualization of PSRs has gone through less drastic changes over time compared to those of PSIs. However, the final stipulation of Horton and Wohl (1956) regarding the fleeting nature of PSRs has been discarded. Instead, scholars now define PSRs as more stable affective ties (e.g., Giles, 2002) that are not changed or exited trivially. In fact, some researchers study parasocial breakups, where audiences painfully terminate PSRs (e.g., Cohen, 2004; Lather & Moyer-Gusé, 2011), which further suggests that PSRs are not always easy to exit. Other work has argued for (Tukachinsky & Sangalang, 2016) and demonstrated (Tukachinsky et al., 2020) the conceptual distinction between PSIs and PSRs. Additionally, scholars have theorized that PSRs develop in stages, and begin formation even upon first exposure to a media character (i.e., relationship initiation; Tukachinsky & Stever, 2019). Yet, others suggest that stage models of relationship development are flawed because they do not account for the maintenance and ever-changing nature of relationships (e.g., Rollie & Duck, 2006).

Some disagreement remains about the affective nature of PSRs. Some scholars emphasize that PSRs are bound to positive affect (e.g., Dibble et al., 2016; Giles, 2002). Others argue that PSRs can be negative as well (e.g., Bernhold, 2019; Jennings & Alper, 2016; Tian & Hoffner, 2010). They point out that because PSIs are not inherently positive, these encounters can lead to negative affective ties. For example, a child scared by a character in a television show may come to dislike that character and form an adversarial bond.

Other scholars have examined differences in how people engage in PSIs and PSRs based on the realism or authenticity of media personae. Tsay-Vogel and Schwartz (2014) designed a

four-dimension taxonomy of PSIs based on the authenticity of the character. These dimensions are animated or live action, fictitious or real, human or nonhuman, and super or normal. They reason that PSIs and PSRs will be easier with characters that are more similar to the user (i.e., live-action, real, human, and normal). Yet, there is also some disagreement with this concept. Indeed, work has demonstrated that it is possible to form PSIs and PSRs with characters who would not be considered authentic, such as animated and fictional ones (e.g., Branch et al., 2013; Tsay-Vogel & Schwartz, 2014). A recent meta-analysis found that audiences formed PSRs with fictional characters just as easily as they did with nonfictional characters (Tukachinsky et al., 2020). This suggests that media persona authenticity may be less important for parasocial processes than some have speculated.

Conceptual Confusion and Ambiguities

As the conceptualizations of PSI and PSR evolved, ambiguities and discrepancies arose. For example, some definitions are overly narrow. Rubin and McHugh (1987) define PSI as a phenomenon that occurs exclusively with television characters. Indeed, television is a common channel through which scholars study parasocial phenomena. However, PSIs and PSRs can be observed in many different contexts. In the original work, Horton and Wohl (1956) identify radio as one channel through which PSIs and PSRs can occur. In more recent studies, scholars have examined PSIs and PSRs with book characters (e.g., Liebers & Schramm, 2017; Schmid & Klimmt, 2011), video game characters (e.g., Song & Fox, 2016), and radio personalities (e.g., Savage & Spence, 2014). These works and others suggest that parasocial phenomena occur across a wide range of media, not just television.

The Conflation of PSI from PSR

Conceptual Confusion

One of the most widespread issues in the parasocial domain is the conflation of PSIs and PSRs. Both PSIs (e.g., Cohen, 2014; Rubin et al., 1985) and PSRs (e.g., Cohen, 2014; Giles, 2002) are currently defined as affective ties. Although PSRs have always been defined as relationships, PSIs were not conceptualized that way until Rubin and colleagues (1985; Rubin & McHugh, 1987) popularized their conceptualization. Horton and Wohl (1956) originally defined PSIs as an experience through which audiences perceived a media persona to be responsive to viewers. In other words, the original definition encapsulated an experience, not a relationship. Rubin and colleagues (1985) misinterpreted Horton and Wohl's (1956) definition of PSIs. They claim that Horton and Wohl defined PSIs as "a relationship on the part of the television viewer of friendship or intimacy with a remote media 'persona'" (Rubin et al., 1985, p. 155). This interpretation is much closer to the original definition of PSRs. More work demonstrates that although PSIs and PSRs are related concepts (Dibble et al., 2016), they are conceptually distinct and media that elicit strong PSIs may not always elicit strong PSRs, or vice versa (Tukachinsky & Sangalang, 2016). Thus, by defining PSIs and PSRs as essentially the same concept, scholars are conflating two phenomena that are distinct.

Other scholars often do not offer definitions for either term at all, which may be due to the conceptual confusion that pervades the field (Tukachinsky & Tokunaga, 2013). This further muddies how exactly different scholars are thinking about PSIs and PSRs. As a result, it is difficult to interpret how some studies are advancing or challenging parasocial theory.

Operationalization Issues

Given the conceptual conflation of PSIs and PSRs, it is unsurprising that the operationalization of these concepts is similarly conflated. One popular measure of PSI that is in use today was created by Rubin and colleagues (1985), who as noted above misinterpreted the

conceptualizations of Horton and Wohl (1956). Because their operationalization is based on an incorrect conceptualization of PSIs, the scale itself is similarly flawed. For example, many of the items in this scale ask participants about whether they view media personae as friends (e.g., "I think my favorite newscaster is like an old friend;" Rubin et al., 1985, p. 167). Based on the original theorizing by Horton and Wohl (1956), these items are better measures of PSRs than PSIs, which thus makes much of the work in the field confusing. Indeed, contemporary scholarship notes that work using the measure designed by Rubin and colleagues (1985) likely results in the misinterpretation of results in the parasocial field (Tukachinsky et al., 2020). This further muddies understanding of exactly how PSIs or PSRs elicit different outcomes of interest to scholars (e.g., narrative persuasion; Moyer- Gusé & Nabi, 2010).

There are other operationalization issues that have arisen from the lack of clarity surrounding PSIs and PSRs. Because there is confusion about how to define parasocial phenomena, many scholars create their own measures to fit their preferred definitions. Subsequently, numerous operationalizations of PSIs and PSRs have been established over the years, and these operationalizations are often poorly tested, measure different things, or do not hold up to scrutiny (Dibble et al., 2016; Tukachinsky et al., 2020).

Separating PSIs and PSRs

Conceptual Clarification

Recent scholarship has begun to identify and clarify some of the confusions listed above. (e.g., Dibble & Rosaen, 2011; Klimmt et al., 2006). One notable advancement comes from Hartmann and Goldhoorn (2011), who harken back to the original conceptualization (Horton and Wohl, 1956) that PSIs are tied to the illusion of being in a social encounter. As such, they define *parasocial interactions* as an experience of the audience member "characterized by a felt

reciprocity with a TV performer" (Hartmann & Goldhoorn, 2011, p. 1107). This diverges significantly from the most prevalent contemporary definition (Rubin et al., 1985), but also brings the concept more closely into alignment with the original theorizing. Their definition also again binds parasocial phenomena to television, a stipulation this dissertation will be discarding given the evidence that PSIs and PSRs can occur in other channels like video games (e.g., Song & Fox, 2016) or written media like books (e.g., Liebers & Schramm, 2017; Schmid & Klimmt, 2011).

The Hartmann and Goldhoorn (2011) explication outlines the necessary elements of exposure to a media character that lead to a PSI. First, it operates under the assumption that people are always automatically forming intuitive feelings about others, a process called *mindreading abilities* (Hartmann & Goldhoorn, 2011). PSI is born of this automatic process, which causes audiences to attribute characteristics to media personae that they do not actually have. The first two of these, *mutual awareness* and *mutual attention*, refer to the sense that the media persona is mindful of and focused on the audience member, and that both parties perceive the other as committed to the interaction (Hartmann & Goldhoorn, 2011). In essence, audiences believe that the media persona is engaging in a focused social interaction with them (Goffman, 1963). Of course, this is still parasocial, so the media persona is not actually aware or attentive; that is just what the audience member perceives.

The third element borne of mindreading abilities that is described by Hartmann & Goldhoorn (2011) is called mutual adjustment. *Mutual adjustment* refers to the sense that a media persona is responding dynamically to audience members throughout the encounter (Hartmann & Goldhoorn, 2011). Even if the media persona cannot see or acknowledge the

audience member (e.g., a television character), audiences can get the sense that their feedback is being listened to and is affecting their experiences.

With the concepts of mutual awareness, attention, and adjustment in mind, the authors hypothesized that certain characteristics of media personae may cause audience members to experience PSIs more readily. For example, a persona who makes eye contact with the camera (i.e., *bodily addressing*) or addresses the audience directly (i.e., *verbal addressing*) should facilitate PSIs more readily than one who ignores the audience because mutual attention, awareness, and adjustment would be easier to perceive (Hartmann & Goldhoorn, 2011). In an experiment examining these ideas, Hartmann and Goldhoorn (2011) found evidence that verbal and bodily addressing facilitated the experience of PSIs but did not test the importance of mutual adjustment.

Building off this work, Dibble and colleagues (2016) attempted to similarly redefine PSRs to further separate the two oft-confused concepts. They noted that the experience of an interaction is different from a stable bond, and as such aim to erect clear boundaries between PSIs and PSRs. They defined *parasocial interaction* as a "faux sense of mutual awareness that can only occur during viewing," (p. 25) meaning it ends when the media exposure does. In contrast, *parasocial relationships* are defined as a "longer-term association that may begin to develop during viewing, but also extends beyond the media exposure situation" (Dibble et al., 2016, p. 25). PSRs are facilitated by PSIs. However, PSRs persist beyond media exposure due to their more stable nature. In other words, PSIs are an experience, but PSRs are a bond.

In one final but important clarification, Dibble and colleagues (2016) argued that PSRs can result without PSIs. In instances where a character does not afford audiences the ability to imagine a parasocial interaction (e.g., they never break the fourth wall: an imagined, invisible

barrier that separates audience from performer), a PSI may never occur. However, this does not necessarily stop an affective bond from forming. In conclusion, PSIs and PSRs are related, but not interchangeable.

Operationalization Clarification

In addition to offering definitions of PSIs and PSRs, Dibble and colleagues (2016) attempted to tie both PSIs and PSRs more closely to their original conceptualizations. To do so, they tested various PSI and PSR measures to see which responded best to the manipulations first used by Hartmann and Goldhoorn (2011). In this experiment, participants watched a clip of a performer who either bodily addressed or did not bodily address the audience. They concluded that the scale devised by Hartmann and Goldhoorn (2011) best operationalized PSI because it was most sensitive to their manipulation according to Fisher's *r* to Z tests. Additionally, they argued that each item in the Hartmann & Goldhoorn (2011) scale discriminated between experimental conditions and had higher construct validity than other scales. The ePSI scale (Hartmann & Goldhoorn, 2011) is notably different from the other PSI scales in that it focuses on the audience's impressions of the media persona's mindfulness (e.g., "While watching the video clip, [the character] was aware of me.")

In contrast, the authors concluded that more established measures (e.g., Rubin et al., 1985) mapped better to PSRs than the experience of PSIs (Dibble et al., 2016). These other popular measures of PSI measure how the audience ascribes characteristics or roles to the media persona (e.g., "[The character] made me feel comfortable, as if I were a friend"; "I find [the character] to be attractive"; Rubin et al., 1985). As the authors pointed out, these items may be better suited to assessing PSRs. A later meta-analysis also found that the Rubin scale was a better measure of PSRs than it was of PSIs, further supporting these conclusions (Tukachinsky et al.,

2020). Some other scales that specifically focused on assessing PSRs did not respond to the manipulation of PSI, which is unsurprising given that PSRs are stable and long-term, and the experiment only featured one instance of exposure to the performer (Dibble et al., 2016).

To conclude, the conceptualization and operationalization of PSIs and PSRs have changed significantly over time, yet recent work (e.g., Dibble et al., 2016; Hartmann & Goldhoorn, 2011; Tukachinsky et al., 2020) has realigned with the original theorizing of Horton and Wohl (1956). PSIs are a psychological experience of the illusion of interaction with a media persona. PSRs are a bond between audience and media persona. With these definitions in mind, it is time to move on to the next theory of interest for this dissertation: the parasocial contact hypothesis (Schiappa et al., 2005).

Chapter 6: The Parasocial Contact Hypothesis

The parasocial contact hypothesis is another offshoot of the contact hypothesis and intergroup contact theory that predicts that sustained, non-superficial contact with media characters can reduce prejudice (Schiappa et al., 2005). It posits that when audiences consume media, they can develop positive affect towards media personae. Thus, media personae can serve as targets for positive affect as outlined in the fourth mechanism of intergroup contact theory. The parasocial contact hypothesis is promising in that it allows prejudice-reducing interventions to reach those who may be unable or unwilling to engage in face-to-face intergroup contact (Bond & Compton, 2015). Additionally, and more importantly, it allows for these interventions to avoid putting people from potentially marginalized communities at risk. Despite the positives of this framework, there are also shortcomings and theoretical inconsistencies that must be addressed for the parasocial contact hypothesis to realize its full potential.

This chapter will cover the following structure. In the first section it will describe the parasocial contact hypothesis and some findings from worked based in this field. Second, it will outline four concerns surrounding the theorizing and work that derived from the parasocial contact hypothesis. In the following chapters, this dissertation will cover how these concerns can be ameliorated.

The Parasocial Contact Hypothesis

Indirect contact such as extended and vicarious contact (Wright et al., 1997) ameliorate many of the issues that reduce the pragmatic applicability of interventions relying on face-to-face contact (e.g., anxiety; Stephan & Stephan, 1984). Yet, it is still limited in its application. Namely, for someone to experience extended or vicarious contact, they need an ingroup friend who has outgroup friends. Many people do not have diverse networks or are unaware of their

friends' intergroup ties (e.g., Bond & Compton, 2015). Such individuals cannot reap the benefits of extended contact. Given this, alternatives to direct or indirect contact with real individuals is desirable. This can expose people to positive experiences with outgroup members who would otherwise have no exposure to outgroups.

The parasocial contact hypothesis (Schiappa et al., 2005) is one oft-cited theoretical framework examining *mediated intergroup contact* (occasionally called mass mediated contact; Harwood, 2010), where people are exposed to outgroup characters in entertainment media, such as television (Park, 2012). At first glance, the claim of the parasocial contact hypothesis is straightforward: exposure to media characters can serve as a proxy for direct contact with outgroup members. Drawing on intergroup contact theory (Pettigrew, 1998), Schiappa and colleagues (2005, 2006) posit that people can undergo the same processes described in that theory with media characters instead of actual outgroup members. For example, people can learn about outgroups through media. In the case of the fourth mechanism, which relies on affect, people can come to like outgroup media characters, and potentially form PSRs with them. Because of these similarities, Schiappa and colleagues (2005) claim that parasocial contact can serve the same role as direct contact does in intergroup contact theory.

The parasocial contact hypothesis makes some other claims as well. For example, the framework (Schiappa et al., 2005) acknowledges that Allport's (1954) optimal conditions are vital to the process of intergroup contact theory (Pettigrew, 1998). Schiappa and colleagues (2005) state that "if any of these conditions are not met, prejudicial beliefs may increase and any dissonance can be resolved without changing prejudicial attitudes" (p. 94). However, given the constraints of television, they argue that Allport's conditions are impossible to meet in such contexts. They claim that is not clear how equal status, cooperation towards a common goal, or

institutional support are relevant to television viewing (Schiappa et al., 2005). Televised media personae and their audience do not operate in the same status hierarchies, and only one party is receiving messages from the other (i.e., the media persona sending a message to the audience), thus making equal status difficult or impossible to achieve. As such, they discard Allport's optimal conditions, keeping only the requirement of sustained or repeated contact as introduced in intergroup contact theory (Pettigrew, 1998). The other conditions are replaced by a new condition, that contact be *non-superficial*, meaning exposure to the character should be beyond incidental or surface-level (Schiappa et al., 2005).

In another divergence from established literature, they propose new terms, *parasocial contact* and *parasocial response*, in place of the term *parasocial interaction*. They note that the term PSI is ambiguous and under-explicated. As such, they argue its utility is limited when proposing a new theoretical framework, as other scholars may misinterpret their meaning. It is worth noting that this criticism came before the work done to disentangle PSI and PSR (e.g., Hartmann & Goldhoorn, 2011; Tukachinsky et al., 2020). As such, they break parasocial phenomena into two steps. First, *parasocial contact* describes the exposure of an audience to a television character (Schiappa et al., 2005). This definition of contact aligns more with the definition of contact as exposure (Harwood & Joyce, 2012) than it does with the definition used by intergroup scholars that implies *contact* and *interaction* are interchangeable (e.g., Hewstone & Brown, 1986; Pettigrew, 1998). Second, the *parasocial response* describes the ways an audience may react to that exposure (Schiappa et al., 2005). This encompasses a wide range of reactions, including character impression formation (e.g., Sanders, 2010) or forming a PSR. However other responses are implied to be possible, such as forming new beliefs or experiencing a PSI (Dibble et al., 2016; Hartmann & Goldhoorn, 2011).

In a series of three studies using television stimuli, Schiappa and colleagues (2005) found some support for the notion that parasocial contact with media characters reduces prejudice towards marginalized groups. This is particularly true in media that broke the fourth wall, such as reality television (*Queer Eye for the Straight Guy*) and stand-up comedy (Eddie Izzard), which reduced prejudice towards gay men and transgender individuals respectively. Their third stimulus, a dramatic sitcom, showed more tepid reduction of prejudice towards gay individuals, but overall the authors conclude that parasocial contact can reduce prejudice through the mechanisms described by intergroup contact theory (Pettigrew, 1998).

Parasocial Contact versus Extended and Vicarious Contact

There are obvious similarities between parasocial contact and extended or vicarious contact (Schemer & Meltzer, 2020). Both concepts feature contact which does not feature direct face-to-face interaction between the self and an outgroup member. However, they also diverge in important ways conceptually. During parasocial contact, the audience member can come to form positive affect or a parasocial relationship with outgroup characters or celebrities. Although PSRs are unidirectional (i.e., only the audience forms the interpersonal bond), a media consumer can form strong attachments to media personalities, as they would with reciprocal face-to-face interactions. In contrast, extended and vicarious contact make no predictions regarding positive affect or positive bonds formed with outgroup members.

Although the desired outcome of parasocial contact is similar to that of vicarious contact, the two processes are focused on different mechanisms. Whereas vicarious contact focuses on the relationship between the observer and the ingroup exemplar, parasocial contact concerns an experience between observer and outgroup media personality, with no mention of any ingroup stand-in. In fact, in many parasocial contacts there is no ingroup exemplar at all; the media

personality breaks the fourth wall and talks directly to the audience (e.g., Auter, 1992; Dibble et al., 2016; Hartmann & Goldhoorn, 2011; Schiappa et al., 2005). In short, the mechanisms behind parasocial contact focus on the outgroup persona. The mechanisms behind extended and vicarious contact focus on the ingroup exemplar.

It is worth noting that vicarious and parasocial contact are not mutually exclusive. Media scholars (e.g., Ortiz & Harwood, 2007; Park, 2012) have explicated ways in which extension of the self into an ingroup media character (e.g., identifying with an exemplar) can facilitate positive PSRs with other characters. In such a situation, the conditions for both vicarious contact (i.e., extending into an ingroup exemplar with an intergroup friendship) and parasocial contact (i.e., forming a parasocial response to an outgroup character) would be met. However, the two concepts are theoretically distinct in terms of the mechanisms driving the same outcome.

Skeptics could argue that although the mechanisms driving extended and vicarious contact are theorized to be different than those driving parasocial contact, these concepts are assessing the same phenomenon. One can easily imagine scenarios where parasocial contact, extended contact, and vicarious contact are operationally indistinct. In media that maintain the fourth wall, it is possible for both vicarious contact and parasocial contact to occur. For example, in the television show *Hey Arnold!*, the main character, Arnold, is White and has a friendship with Gerald, his best friend who is Black. Vicarious contact is possible because a White audience member could view Arnold as an ingroup exemplar, and thus reduce prejudice via the processes outlined by Wright and colleagues (1997). Yet, it is also possible that Arnold is irrelevant for some audience members, and prejudice is reduced directly via forming a PSR with Gerald. Both mechanisms would lead to the same desired outcome, but the processes involved are different.

Fortunately, there are scenarios where the boundary conditions of vicarious contact and parasocial contact can be differentiated by providing opportunities for one type of contact but not the others. For example, by using media in which there are no characters in the ingroup of interest, scholars can eliminate vicarious contact as a possibility because vicarious contact requires an ingroup exemplar. For example, Schiappa and colleagues (2005) used the show *Queer Eye* as a stimulus for one of their studies. This show features frequent segments where the main characters, who are all gay, talk directly to the camera to give their thoughts and share insights. In these segments, there is no ingroup character for heterosexual audience members to extend into. Thus, vicarious contact is impossible. Instead, the main characters are speaking directly to the audience member, so any contact is inherently not vicarious. The audience member is experiencing it directly.

Conversely, studies focused solely on extended contact can rely on media that do not feature outgroup characters. For example, in content where an outgroup character never appears on screen, researchers can thus eliminate the possibility of parasocial contact (as such contact never occurs). However, such a stimulus still affords extended contact, so long as the audience member views an ingroup member as an exemplar, intergroup bonds are mentioned, and group salience is primed. Alternatively, researchers could have participants observe an intergroup interaction occur, but never give users a reason to anticipate future exposure or interaction, which is a key element of a relationship. This would thus limit participants' ability to form PSRs with the outgroup member, but still allow for vicarious contact as the audience sees the positive interaction occur. It also meets a call for researchers to test the limits of vicarious contact, such as how much information participants need about an intergroup interaction to count as observing (Vezzali et al., 2014). To conclude, scholars can design studies that separate extended and

vicarious contact by using stimuli that are outside the boundary conditions of one theory while being inside the boundaries of the other.

Criticisms of the Parasocial Contact Hypothesis

Broadly speaking, the parasocial contact hypothesis is a useful framework that describes how media exposure can reduce prejudice by developing positive affect towards media characters. Despite the appeal of the framework, there are numerous issues with the theorizing and methodology employed in both the original work and the studies inspired by the initial paper. Here, this section will lay out four major critiques of both the initial paper and studies attempting to apply the parasocial contact hypothesis.

Overlooking Optimal Contact

Schiappa and colleagues (2005) discarded Allport's optimal conditions because, in their words, "while sustained and non-superficial contact is obviously relevant to parasocial contact, it is not clear that such factors as feeling of equal status, sharing common goals, and opposition of a salient authority are particularly relevant to viewing television" (p. 98). This is a defensible position as written, because Schiappa and colleagues limit their discussion of parasocial contact to television. Television characters are usually bound to their own universe, which makes it difficult for an audience member to assess status in relation to that character, share goals, or have opposition from authorities. A viewer has no status within fictional worlds for example, and authorities within fictitious universes do not care about the viewer as they cannot even acknowledge their existence. In other shows that break the fourth wall, a character may acknowledge the audience, but they are still bound to the world shown on screen. This separation makes it difficult to cooperate.

The decision to discard the optimal conditions is understandable, given the previous focus of the parasocial field on television (e.g., Cohen, 2014; Rubin et al., 1985). Yet, in doing so the parasocial contact hypothesis diverges from well-established moderators known to reduce prejudice consistently. The authors (Schiappa et al., 2005) stated that they view the optimal contact conditions as essential yet abandoned them due to the impracticality of introducing them in televised contexts. It is arguable that those conditions are difficult to attain through television viewing, but if the framework views the optimal conditions as essential, they should be incorporated into theorizing and operationalizations. Granted, work on parasocial contact in televised contexts has found prosocial effects (for review see Banas, Bessarabova, & Massey, 2020), much like research on face-to-face contact has found evidence of prejudice reduction without meeting the optimal conditions (for review see Pettigrew & Tropp, 2006). Yet, they are still viewed as key facilitators of prejudice reduction (e.g., Dixon et al., 2007). Thus, by discarding the optimal conditions completely, the parasocial contact hypothesis hinders its own potential for producing robust prejudice-reducing interventions.

Additionally, their reasoning for discarding the optimal conditions is because they are nonviable in televised contexts. Even if this is true, there are an array of media beyond television in which PSIs and PSRs are possible, and these alternative channels may prove fruitful for eliciting a sense of Allport's optimal conditions. Ignoring the optimal conditions because they are unviable in one channel may cause scholars to overlook important elements of other media. Schiappa and colleagues (2005) were careful to limit their discussion of optimal contact conditions to television and discarded them because they view the optimal conditions as unattainable in television.

Yet, in other sections of that same paper, they make it clear they view the parasocial contact hypothesis as applicable to media more generally, and some media may be better able to elicit perceptions of the optimal contact conditions. In some types of media audiences can directly interact with characters and otherwise impose their will on the fictitious world to some degree. In video games, for instance, players often control an avatar they can use to interact with the virtual environment and virtual characters controlled by the computer (i.e., *agents*). Note that this contact is still parasocial, as video game characters are not mindful or agentic. Yet, it may be easier to meet the optimal contact conditions in media like video games because the audience is afforded the ability to act with or upon media personae. The ability to influences characters and narratives also happens in some books (e.g., the *Choose Your Own Adventure* series) and an illusion of interactivity is occasionally fostered in television (e.g., television hosts; Horton and Wohl, 1956). In media like these, with characteristics that diverge from typical television, it may be possible to reintroduce optimal contact conditions. This is desirable because it would reintroduce the parasocial contact framework to moderators that allow for more effective prejudice-reducing interventions per intergroup contact theory (Pettigrew, 2021; Pettigrew & Tropp, 2006). Even those who are skeptical of the necessity of optimal contact conditions (e.g., Dixon et al., 2007) admit they improve the quality of contact. As such, reincorporating them serves both a theoretical and practical purpose.

Is Parasocial Contact Enough?

In a related critique, the parasocial contact hypothesis emphasizes the importance of *contact* as opposed to *interaction* (Schiappa et al., 2005). However, as established, there is plenty of ambiguity as to what constitutes contact. *Contact* is often defined as a type of social interaction within the intergroup literature (e.g., Hewstone & Brown, 1986; MacInnis & Page-

Gould, 2015), but can also encompass less involved social encounters (e.g., exposure; Harwood & Joyce, 2012; MacInnes & Page-Gould, 2015). In the intergroup field, scholars place importance on friendships (Pettigrew, 1998), which require interaction (a rich subtype of contact). In contrast, Schiappa and colleagues (2005) conceptualize parasocial contact as mere exposure to a media character. Thus, the way Schiappa and colleagues conceptualize contact (i.e., exposure) seemingly breaks from the way contact is conceptualized in the intergroup field (i.e., interaction). Additionally, work in the intergroup contact field often operationalizes contact as conversations, which are interactions (for review see Pettigrew & Tropp, 2006; Pettigrew et al., 2011). In contrast, the operationalizations of parasocial contact are almost always exposing audiences to a media character (for review see Banas et al., 2020). Thus, the conceptualizations and operationalizations of parasocial contact (Schiappa et al., 2005) do not align with the way contact is often discussed in the broader intergroup contact literature (e.g., Hewstone & Brown, 1986; Pettigrew, 1998), even as some other scholars explore the benefits of indirect contact such as vicarious contact (e.g., Wright et al., 1997).

In fairness to the parasocial contact hypothesis, the ambiguity surrounding the definition of contact exists in the parent theories (i.e., the contact hypothesis and intergroup contact theory), neither of which clearly define how they conceptualize *contact*. It seems that Pettigrew (1998) defines contact and interaction synonymously, but never explicitly states his definition. Other work on intergroup contact, such as indirect contact, challenges the importance of social interaction for prejudice reduction (e.g., Vezzali et al., 2014; Wright et al., 1997). For example, extended contact, where individuals never even see outgroup members, has been shown to reduce prejudice (Dovido et al., 2011). This suggests that interactions are not necessary for intergroup contact to reduce prejudice; more distal types of contact suffice. Keep in mind that

extended contact and parasocial contact function through different mechanisms, so comparing them should be done with caution. Yet, given the success of intergroup interventions that do not involve interactions it makes sense that parasocial contact fits into the larger intergroup literature, even if it seems to diverge from the way intergroup contact theory encapsulates the concept.

Additionally, more recent work on parasocial phenomena (e.g., Dibble et al., 2016; Hartmann & Goldhoorn, 2011; Tukachinsky et al., 2020) stipulates that PSRs can still form without PSI. Because affective ties are one of the best mechanisms through which prejudice is reduced (e.g., Pettigrew, 1998; Swart et al., 2011), the distinction between contact and interaction may be less meaningful in these mediated contexts. Finally, it is arguable that the parasocial contact hypothesis is testing a boundary condition of intergroup contact theory (i.e., "how superficial can contact be while still reducing prejudice?"), although it is not framed this way in the paper (Schiappa et al., 2005). Altogether, this conceptual confusion leaves the parasocial contact hypothesis in an area of ambiguity. Results from initial work has shown robust results in stimuli with bodily addressing (e.g., reality TV; Schiappa et al., 2005), whereas some studies using stimuli that do not feature bodily addressing are more tepid (e.g., sitcoms; Schiappa et al., 2005) or elicit other types of bonds to characters, like identification (e.g., Moyer-Gusé et al., 2018; Ortiz & Harwood, 2007). However, the importance of experiencing interaction (i.e., PSI) has not been soundly tested in the literature yet.

Interpersonal or Intergroup?

One of the only original requirements from intergroup contact theory (Pettigrew, 1998) that is maintained in the parasocial contact hypothesis is the emphasis on repeated, sustained contact. However, the reasons this temporal element is necessary have not been adequately

considered in studies on parasocial contact. Intergroup contact theory states that the reason repeated or sustained contact is needed is because the mechanisms driving prejudice reduction take time (Pettigrew, 1998). In the case of the fourth affective mechanism, the observer needs time to get over any contact anxiety, decategorize the outgroup member, and develop positive affect (ideally an affective tie like friendship). Only once those have happened can prejudice reduction begin to generalize to the outgroup under conditions where group identities are salient. This is not an instant process. Although the parasocial contact hypothesis does stipulate the need for prolonged, non-superficial contact, it does not place as much emphasis on the reasons behind that stipulation.

This departure from intergroup contact theory comes about because parasocial interaction is often conceptualized as a strictly interpersonal process. Horton and Wohl (1956) describe PSIs and PSRs as intimate and personal, with media companies intentionally fostering a sense of closeness in hopes that audiences will form a personal bond with personae. Schiappa and colleagues (2005; 2006) voice their agreement with this interpersonal definition repeatedly. If PSI, PSRs, and parasocial contact are all inherently interpersonal, there is no need to distinguish between intergroup and interpersonal instances. However, if this is accurate, it poses a significant problem for the parasocial contact hypothesis as currently conceptualized, at least if it intends to connect to intergroup contact theory more broadly. According to its parent theory, both interpersonal and intergroup contexts are important for effective prejudice reduction. Prejudice reduction will only generalize to the entire outgroup if positive affect for an outgroup member is moved into a more intergroup context. If PSI and PSR are strictly interpersonal processes, that bodes poorly for the effectiveness of parasocial contact for reducing prejudice given the need for group-salient contact as well.

As a result, studies examining the parasocial contact hypothesis also do not consider the driving mechanisms such as individuation and decategorization. For example, in the original work on parasocial contact, two of the three studies exposed participants to media characters at multiple times, meeting the requirement of sustained or repeated contact. This longitudinal aspect is present in some other empirical work as well (e.g., Bond, 2021; Brichmore & Kettrey, 2021). Although these studies maintain repeated or sustained exposure, they do not assess whether participants are viewing each contact instance in an interpersonal or intergroup way, which was a major justification for needing repeated contact in the originating work (Pettigrew, 1998). Until this is established, it is uncertain how well parasocial contact maps on to intergroup contact theory's longitudinal claims.

The tensions between needing intergroup elements and the interpersonal nature of parasocial phenomena may be resolved by turning to other theories. According to social identity theory (Tajfel & Turner, 1979), intergroup and interpersonal salience should be viewed as a spectrum instead of a binary. In other words, social behavior varies in how much it is interpersonal or intergroup, but it is essentially impossible for something to be purely intergroup or purely interpersonal (Hewstone & Brown, 1986; Tajfel & Turner, 1979). Thus, even if parasocial phenomena are deeply interpersonal, they may still contain intergroup elements. It remains to be seen if those conditions can meet the intergroup requirements outlined by intergroup contact theory.

Consistent Methodological Issues

Some methods-based criticisms can be levied at individual studies, but two theoretically relevant limitations appear in the literature regularly. First, one of the biggest limitations of the seminal work is that Schiappa and colleagues (2005) did not assess participants' relevant group

memberships. As such, they cannot be certain that participants were not part of the outgroup. The lack of consideration for participants' social identities is an issue with other studies in the field, who also do not ask or report about relevant group memberships (e.g., Abrams, McGaughey, & Haghighat, 2018). By not measuring participants' group memberships, it is impossible to discern if the parasocial contact is intergroup at all. For example, in one of the studies from that initial paper, participants watched a show with gay characters to reduce prejudicial attitudes about gay people (Schiappa et al., 2005). However, if a gay person participated in that study, the contact would be *intragroup*, not intergroup, because the audience member shared a relevant group membership with the character.

In another common methodological flaw, many experimental studies (e.g., Abrams et al., 2018; Breves, 2020; Gries et al., 2015; Hu, Chen, Li, & Yin, 2019; Joyce & Harwood, 2014; Massey, Wong, & Barbati, 2021; Murrar, Gavac, & Brauer, 2017; Schremer & Meltzer, 2020; Wong, Lookadoo, & Nisbett, 2017) do not feature designs with repeated exposure, violating one of the only necessary conditions of the parasocial contact hypothesis. Studies that assess a conglomerate of exposure as a proxy for longer-term effects (e.g., Bond & Compton, 2015; Schiappa et al., 2006) are almost exclusively correlational (for a recent exception see Bond, 2021). These studies generally find results consistent with predictions of the parasocial contact hypothesis, but the method presents an issue that has been present in work on prejudice reduction for decades: it is correlational (Hewstone & Brown, 1986). Such studies do not indicate causality. Although these findings align with predictions of mediated intergroup contact, they do not eliminate other potential explanations. For example, it seems just as likely that those low in prejudice are more likely to opt into character relationships (e.g., PSR) with an outgroup persona.

In summary, the parasocial contact hypothesis is a theoretical framework that is rooted in the contact hypothesis and intergroup contact theory. It demonstrates how contact with media characters can elicit prejudice reduction in the ways outlined by intergroup contact theory, particularly as they pertain to affect. Although work on the parasocial contact hypothesis has been fruitful and promising, some theoretical issues remain that should be addressed. Some of these (e.g., the distinction between contact and interaction) arise due to issues within the parent theories. Others (e.g., discarding optimal contact conditions) arise due to ambiguities or tensions within the parasocial contact hypothesis itself. The next chapter will discuss how these issues can be ameliorated by considering the characteristics of face-to-face social interaction and media. By doing so, the parasocial contact hypothesis can be brought to realize its full potential as a theory that predicts the prejudice-reducing effects of media.

Chapter 7: Interaction, Interactivity, and Presence

To remedy the issues presented at the end of the previous chapter, we must also address some of the ambiguities in the intergroup contact literature more broadly. As previously discussed, scholars are unclear about what constitutes contact. Some (e.g., Pettigrew, 1998) place emphasis on deep, meaningful interactions that can lead to affective ties. Others (e.g., Wright et al., 1997) have demonstrated that more superficial contact can also reduce prejudice. However, which is most effective? Additionally, how can researchers design interventions that meet ideal conditions for contact (Allport, 1954; Pettigrew, 1998) in mediated contexts?

Several key terms will be explicated in this chapter to answer these questions. First, the definition of social interaction will be reviewed. Next, this chapter will discuss some characteristics of social interaction that are argued to make such contact optimal for prejudice-reducing interventions. Third, this chapter will discuss affordances, specifically interactivity, and how these are present or absent in face-to-face and mediated contexts. Finally, this chapter will define presence, and how this phenomenon is important for eliciting perceptions of social interaction.

Social Interaction

Social interaction is one of the most important elements of communication, yet scholars disagree on exactly how social interactions should be defined (Hall, 2018). Definitions encompass a broad continuum, largely separated by how deep and meaningful a social encounter must be to be considered social interaction. Goffman (1963) defines two types of social interaction, the first being *unfocused interaction*. In these exchanges interactants are not viewed or treated as unique individuals. For example, a quick greeting to a colleague in a hallway does not constitute a social interaction per Goffman because a friendly greeting is standard and does

not require differentiating between individuals. Similarly, a short exchange with an employee at a business is not necessarily social interaction if the interactants are only engaging within the capacity of the roles they employ, as any employee is interchangeable with any other employee from the perspective of the customer and vice versa. Thus, unfocused interaction seems unlikely to trigger mechanisms known to drive prejudice reduction, such as decategorization and the generation of positive affect because it is not individuating (Pettigrew, 1998).

Focused social interaction encompasses encounters where interactants share a mutual acknowledgement, share mutual attention, and engage in conversation. Thus, focused social interaction can change the way interactants feel about each other (i.e., relational consequences; Hall, 2018) as people get to know each other as individuals and evolve their relationship. In this way, individuating someone is a mandatory element of social interaction, as individuation is required for an encounter to have relational meaning and relational consequences (Duck, 1991). These ideas parallel concepts like decategorization and friendship, which are key to intergroup contact theory (Pettigrew, 1998). As a framework deriving from intergroup contact theory, the parasocial contact hypothesis should consider how these conditions can be met with media personae.

Identifying Qualities of Face-to-Face Social Interaction

If social interaction is indeed important for the processes that drive intergroup contact theory, it is important to consider the qualities such encounters have. In addition, scholars must similarly assess other social encounters to see how they meaningfully differ. Some scholars have considered the qualities of face-to-face social interactions within the context of intergroup contact. Specifically, the contact space is an excellent starting point for considering specific qualities of contact and social interaction (Harwood, 2010). The *contact space* refers to a

framework by which scholars can consider contact scenarios across two granular dimensions. Harwood (2010) calls the first dimension *richness of experience,* which refers to the number of cues, channels, and feedback available within an environment. The more these components are readily available, the more beneficial intergroup contact will be to those who participate in or observe intergroup encounters. The second component, *involvement of the self*, refers to the degree any one individual is included in an intergroup encounter. An interactant in a face-to-face conversation would have high self-involvement; someone observing a conversation (i.e., vicarious contact) would have lower self-involvement. The higher the involvement of the self, the more likely an intergroup encounter will reduce prejudice.

Harwood (2010) posits that direct face-to-face social interaction is the pinnacle for both of these components, and thus provides the best contact experience. This aligns with Pettigrew's conceptualization of contact, which in turn parallels Goffman's (1963) explication of focused social interaction. Face-to-face social interaction offers an experience with a wide array of cues (e.g., sight, sound, touch, smell), and immediate feedback (e.g., verbal communication, body language) that provide information about the communication context. Similarly, face-to-face social interaction inherently involves the self because each interactant is directly responsible for the social encounter, producing messages, evaluating others, and maintaining mutual attention (Goffman, 1963). Other contexts vary in the extent they offer "richness," as Harwood would say, and involvement of the self. In particular, mediated contexts often offer fewer cues, less feedback, or slower feedback than face-to-face social interaction (Harwood, 2010). Yet, media are diverse, and the extent to which different channels offer these elements will differ.

The contact space describes or alludes to multiple components that shape a contact experience. In particular, the number of cues, the degree of feedback available, and the speed at

which feedback is received are all features that are theorized to improve contact. Harwood (2010) does not specifically explicate how each of these characteristics will influence contact experiences in isolation. Although understandable given the demands of explicating a theoretical framework, this makes it difficult to make concrete predictions about how specific characteristics of a social encounter facilitate or hinder prejudice reduction. To answer these important questions, we must isolate and conceptualize the broad ideas that contribute to richness of experience.

Affordances

Affordances seem to be important to Harwood's (2010) contact space, although he does not use that term. *Affordances* are action potentials that arise as part of the relationship between a user and their environment (Gibson, 1979). In other words, an environment affords possible actions that an organism can perform (e.g., a door affords opening; a ladder affords climbing). In contemporary communication scholarship, affordances are most often applied to technology and media (e.g., Kiousis, 2002), but the original term could refer to other objects such as substances or living things in an environment (Gibson, 1979). As such, one could map affordances onto social encounters, both in mediated and face-to-face contexts. Indeed, scholars have studied *social affordances*, which specifically encompass the action potentials of human interaction (Gibson, 1979; McArthur & Baron, 1983).

Other scholars, mainly those who study affordances in technology, place emphasis on *perceived affordances*, which refer to the way a user experiences their environment, as opposed to considering the inherent properties thereof (Fox & McEwan, 2017; Norman, 1990). People may perceive an affordance, but this is not always true. Sometimes, users can fail to identify action potentials afforded by features of their environment. For example, some iPhone users are

unaware of some of the more advanced features of their phone like sound editing (Tanaka, 2010), meaning they fail to perceive an action potential available to them: a *hidden affordance* (Gaver, 1991). *False affordances* refer to action potentials users believe exist, but do not in actuality (Gaver, 1991). For example, someone may see a lifelike model car and believe they can drive it, but in reality the car has no engine and will not move.

With this idea in mind, it is possible to consider how specific affordances and perceived affordances differ across potential intergroup contact encounters. For example, *contingency*, or the degree to which messages build off each other, is important for the concept of feedback and interaction in a social encounter (Sundar et al., 2016). In a mediated context, contingency should afford greater feedback and give users a stronger sense of interaction. Another affordance, *personalization*, refers to the degree with which people can target specific receivers with messages (Fox & McEwan, 2017) or the extent to which messages themselves are targeted at specific receiver(s) (Fairclough, 1987). This affordance relates to face-to-face social interaction because higher personalization should allow those involved in contact to perceive intimate, interpersonal interactions (Hall, 2018) important to intergroup contact (Pettigrew, 1998). The final affordance to discuss, interactivity, is notable in that it influences both dimensions of the contact space: richness of experience and involvement of the self. The next section will explicate a definition of interactivity.

Explicating Interactivity

Like the explication of social interaction, the definition of interactivity has been debated (Bucy, 2004). Despite a general agreement on the broad definition (i.e., two people or things influencing each other), explicating the specifics of interactivity in a mediated context is difficult because it is so complex, and scholars often propose redundant and paradoxical

conceptualizations (Bucy, 2004). Many different definitions of interactivity persist, a problem which is exacerbated as scholars come from different fields (e.g., communication, psychology, computer science) and different starting points (e.g., technological affordances, message characteristics, perceptions).

Given the widespread, interdisciplinary interest in the concept (Bucy, 2004), finding a definition of interactivity that is broadly acceptable has been a key focus of many scholars. In one notable attempt, Kiousis (2002) drew on diverse definitions of interactivity from multiple domains, including communication, psychology, and computer science. His definition of interactivity is as follows:

> Interactivity can be defined as the degree to which a communication technology can create a mediated environment in which participants can communicate (one-to-one, one-to-many, and many-to-many), both synchronously and asynchronously, and participate in reciprocal message exchanges (third-order dependency). With regard to human users, it additionally refers to their ability to perceive the experience as a simulation of interpersonal communication and increase their awareness of telepresence. (Kiousis, 2002, p. 372)

This definition is long and complex. To better understand interactivity altogether and come to this dissertation's own definition, it is beneficial to consider each element. First, interactivity is a spectrum, not a binary. Kiousis (2002) defines interactivity in degrees, instead of absolutes. In other words, mediated environments can be more or less interactive. The idea of interactivity being a spectrum aligns with how contemporary scholars study affordances (e.g., Fox & McEwan, 2017), including interactivity.

Second, Kiousis's (2002) definition of interactivity is bound to communication that is mediated by technology of some kind. It does not consider interactivity as applicable to face-to-face communication, although the author admits that this exclusion is debatable. The exclusion of other types of environments diverges from the original conceptualization of affordances (Gibson, 1979), which applied to any environment, not just digitally mediated ones. To consider the affordances of face-to-face social interaction, we must expand beyond mediated contexts. Thus, this element of Kiousis's definition will be discarded for the purposes of this paper.

Third, interactivity relates to other affordances. In particular, Kiousis (2002) mentions *synchronicity*, which refers to the quickness with which messages are sent and received. Kiousis states that both synchronous and asynchronous communication can be interactive. Indeed, computer-mediated communication platforms like videoconferencing and email differ widely in their degree of synchronicity, yet both have some degree of interactivity. Kiousis draws this idea from scholars who situate interactivity as a technology-derived concept (e.g., Steuer, 1992). Going further, other affordances not mentioned by Kiousis also feed into interactivity. For example, contingency is important because the degree to which messages build off each other will inform the degree to which messages can be exchanged between two or more parties. Personalization may matter as well because the degree to which messages can be targeted will influence the degree to which two individuals can interact. In short, for individuals to exchange messages they must be able to target their communication partner with messages (e.g., eye contact, proper volume in face-to-face contexts; direct messages in computer-mediated communication). This ensures the communication partner receives the message and can respond, which is necessary for social interaction.

Fourth, and perhaps most importantly, Kiousis (2002) defines interactivity as reciprocal message exchange, or third order dependency. In short, interactivity is social in nature. *Third order dependency* refers to the extent to which messages in a sequence relate and build off each other (Rafaeli, 1988; Rafaeli & Sudweeks, 1997). For this to happen, interactants must share mutual awareness and attention on the current exchange and past messages (i.e., social interaction; Goffman, 1963; Hall, 2018). This differs from other types of message exchange. *Reactive communication* (Rafaeli, 1988) also recognizes that interactants exchange messages. However, reactive communication details that message senders only adapt their message based on the one that immediately preceded it. In contrast, third-order dependency refers to communication in which messages build off all messages that came before. Even further from interactivity, *one-way communication* refers to social contact in which only one party even gets the opportunity to send a message to the other (Rafaeli, 1988).

One issue with the Kiousis's definition is that it encompasses two distinct concepts. In the first half, the concept of interactivity is situated as a property of technology (i.e., the environment). In the second half, interactivity is situated as a perception of the user. This dichotomy arises because Kiousis (2002) draws on two different conceptualizations of affordances in technology. Some (e.g., Steuer, 1998) situated interactivity as part of the environment. Others (e.g., Rafaeli & Ariel, 2008) warn against considering technological properties in isolation, and instead emphasize the perspective of the audience or user. As a result, the definition does not distinguish between these two distinct concepts. This is easily remedied by considering affordances. Kiousis's first definition aligns with the concept of inherent affordances (Gibson, 1979). The second aligns with perceived affordances (Norman, 1990). Thus, for the purposes of this paper, the definition of interactivity will be separated into two.

Drawing on the multiple elements of Kiousis' (2002) definition, it is possible to define interactivity and perceived interactivity in a manner with more utility for bridging mediated and unmediated contexts. For the purposes of this paper, *interactivity* will be the degree to which objects in an environment, especially digital media and technology, allow users to enact reciprocal message exchange with varying degrees of synchronicity and contingency. User's subjective experience is still important, so this dissertation will define *perceived interactivity* as the extent to which users perceive objects in an environment, especially digital media and technology, to allows users to enact reciprocal message exchange with varying degrees of synchronicity and contingency. Perceptions of interactivity are influenced by multiple elements, such as perceptions of control, responsiveness (i.e., how much feedback users get based on their inputs), and how much the media or technology feels human as opposed to artificial (Wu & Wu, 2006). Work has found that user's perceptions of a medium's interactivity can differ from its actual interactivity (e.g., Lee et al., 2002), and that perceived interactivity mediates effects of interactivity on other outcomes such as attitudes (Wu, 2005). This further highlights the importance of differentiating between interactivity and perceived interactivity.

As noted above, there are multiple affordances that relate to or are embedded within contingency such as synchronicity (Kiousis, 2002) and responsiveness (Wu & Wu, 2006). For the purposes of this dissertation, contingency will be the key element of interactivity that will be examined. Contingency was chosen because of its theoretical relevance to social interaction, which requires high degrees of contingency (i.e., third order dependency; Rafaelli, 1998), which may therefore carry more weight in intergroup contexts.

Presence

Having defined interactivity and perceived interactivity, it is possible to map these ideas more clearly onto parasocial contact. According to the contact space framework (Harwood, 2010), face-to-face social interaction is the best type of contact for reducing prejudice because of its richness and involvement of the self. Of particular interest, mediated contexts are less effective at reducing prejudice because they afford less feedback and require less involvement of the self (Harwood, 2010). Although the properties of many mediated contexts do not align with face-to-face contexts, if one perceives their surroundings to be akin to face-to-face social interaction, this should improve the quality of contact.

The idea of perceiving mediated environments as if they were face-to-face environments is called *presence*. Lombard and Ditton (1997) define presence as the perceptual illusion of *nonmediation*. This illusion arises when a person does not perceive a communication medium and responds as if that medium was not there. In other words, the audience's perceptions of their action potentials (i.e., perceived affordance) does not align with the inherent properties of the medium they are using to communicate (i.e., inherent affordances).

Presence is often broken down into multiple types (Tamborini & Skalski, 2006). The connecting thread across types is that users experience virtual elements as if they were genuine. *Self-presence* refers to the phenomenon that a user's virtual self is experiencing as their actual self (Lee, 2004). In contexts where someone is not controlling or embodying a distinct entity (e.g., an avatar), this type of presence is not relevant. *Spatial presence* refers to the sense that a user is physically located in a virtual environment or perceives virtual objects are real (Lee, 2004). This type of presence may be important if media richness (Harwood, 2010) depends on being physically copresent with interaction partners. If richness can be achieved in other ways, social presence may be a sufficient but unnecessary condition for optimal contact.

Finally, *social presence* refers to the extent to which individuals are aware of or perceive other social actors (Biocca et al., 2003; Short et al., 1976). Social presence was originally conceptualized in the context of face-to-face social interactions (Allport, 1920). Indeed, even if others are physically present, we can tune them out or ignore them. Similarly, even over longer distances people can feel socially present with others. In mediated contexts, part of social presence is experiencing virtual agents (i.e., characters that are controlled by the computer) as if they were real (Lee, 2004). Through social presence, users ascribe mentality to these agents (Biocca, 1997) which affords a sense of mutual attention (Goffman, 1963). This is the most important type of presence when considering mediated intergroup contact, such as PSI. If audiences perceive characters to be real, agentic beings, it is possible for them to perceive that they are truly interacting with those characters. Social presence is important because it will cause users to perceive intergroup contact to be more akin to a face-to-face social interaction, which should increase the effectiveness of contact (Harwood, 2010). Indeed, research shows that social presence positively relates to perceptions of interactivity (Tu & McIsaac, 2002).

Much of the work on social presence focuses on presence in computer-mediated communication between two real people (e.g., Gunawardena & Zittle, 1997). Yet, social presence can be experienced with fictional media personae as well (Fox, Christy, & Vang, 2014). Some work on social presence has examined the elicitation of social presence through television (e.g., Bracken, 2005; Kim et al., 2004). Yet, scholars who study social presence theorize it is best elicited through more immersive experiences, such as virtual reality (Cummings & Bailenson, 2016; Fox et al., 2014; Lee, 2004; Oh, Bailenson, & Welch, 2018). Indeed, experimental work has demonstrated that social presence is more easily elicited in richer media environments (e.g.,

Yoo & Drumwright, 2018) and environments that afford interactivity (e.g., Skalski & Tamborini, 2007).

Personalization

Another affordance that may improve the effectiveness of prejudice-reducing interventions is personalization. As a reminder, *personalization* is the degree to which people can control who they send messages to, who they receive messages from (Fox & McEwan, 2017), and how much one can tailor a message to an individual (Fairclough, 1989). *Perceived personalization* is thus defined as the perceptions that messages can be sent to or from specific individuals. For example, in face-to-face contexts people communicate with another individual one-on-one or in a small group; they choose a volume and tone that keeps the communication between themselves, thus controlling who receives messages. Additionally, when messages are perceived to be personalized, this affords greater involvement of the self (Harwood, 2010) because individuals feel more directly targeted by a message.

Multiple factors can increase personalization. For example, Fox and McEwan (2017) discuss how mediated contexts that allow users to send a message online to only a few select individuals has more personalization than a channel where message targets cannot be selected. Personalization and perceived personalization can be increased in other ways, especially when considering contexts germane to face-to-face interaction. For example, messages can be made to feel more personalized by adding social cues, such as facing a conversation partner and engaging in eye contact (Fairclough, 1989; Mayer & Pilegard, 2014). Media with visual elements can increase perceived personalization by having characters face the audience or make eye contact (Fairclough, 1989), in line with discussions of intimacy in parasocial contexts (Horton & Wohl, 1956). This gives people the sense a source is directing a message specifically at them. In doing

so, the media activate a social response, which can make audiences feel like they are engaging in a social interaction (Mayer & Pilegard, 2014). Of particular interest, scholars have studied *synthetic personalization*, which is a simulation of face-to-face contexts en masse, making users feel like a media persona is directly engaging with them even in a message broadcast to many (Fairclough, 1989). Although it has a different name, this is essentially perceived personalization, and linguists have noted how politicians and marketers use synthetic personalization to make people feel more connected to advertisers or public figures (Fairclough, 1989).

Chapter 8: The Current Study

In a previous chapter, this dissertation explicated four areas in which work using the parasocial contact hypothesis could be improved. Two of these tension points, namely methodological rigor and considering the importance of intergroup and interpersonal contact in parasocial contexts, can be remedied with more robust study design. The other two issues, namely a lack of clarity regarding the importance of PSI and the discarding of optimal contact conditions, are more difficult to fix using currently popular research paradigms. This study aims to improve on the former.

To do so, this study explores how adding affordances present in face-to-face social interaction influences the effects of media exposure on prejudice reduction (Harwood, 2010). The affordances of personalization and contingency can cause parasocial contact to more closely mimic face-to-face interaction by more effectively eliciting PSIs and social presence. These experiences make media exposure seem more like social interaction, which should improve the effectiveness of interventions (Harwood, 2010) and bring the operationalization of contact more in line with how intergroup scholars tend to think of it (i.e., an interaction; Pettigrew, 1998).

The conceptual overview of the study proceeds as follows. First, adjustment (an operationalization of contingency) affords audiences the ability to exchange messages, a key element of interaction. Additionally, addressing (an operationalization of personalization) allows audiences to experience message exchange that feels interpersonal in nature. These operationalizations of contingency and personalization should allow exposure to an outgroup media character to feel more like intergroup social interaction (Harwood, 2010). The media stimulus should thus be able to better elicit PSIs and social presence than media without addressing or adjustment. In turn, experiencing a PSI (Tukachinsky et al., 2019), social presence

(Biocca, 2003), or both should help audiences to like a media character. This positive attitude towards an outgroup media character should, in turn, lead to reduced prejudice once group identities are made salient (Pettigrew, 1998).

Affordances and Outcomes of Parasocial Contact

To follow the pathway described above, the first step is to consider how the affordances of interest lead to PSI and social presence. Addressing may cause media exposure to feel like a social interaction. Changing elements of a media exposure to be more intimate and personal elicits parasocial interaction (e.g., Horton & Wohl, 1956). Addressing has been shown to elicit a stronger experience of PSI compared to narratives without those features (Dibble et al., 2016; Hartmann & Goldhoorn, 2011). As such, it stands to reason that those results will be replicated in this study. Furthermore, the reason addressing is argued to elicit PSIs is because it causes audiences to ascribe mindfulness and sociality to media personae more easily (Hartmann & Goldhoorn, 2011). Mindfulness and sociality are key elements of social presence, suggesting that addressing should cause social presence as well. This leads to the first hypothesis:

> **H1:** Viewing vignettes with addressing will increase (a) social presence and (b) parasocial interaction compared to vignettes with no bodily or verbal addressing.

Hartmann and Goldhoorn (2011) theorized about another element, adjustment, that should also increase the experience of PSIs. Through adjustment, a media persona seemingly acknowledges the audience's feedback or messages and shifts their performance accordingly. Yet, Hartmann and Goldhoorn did not directly examine adjustment in their experiment. Adjustment can be manipulated by giving audiences the chance to respond to media personae, and having those personae acknowledge the audience's input. Through adjustment, audiences are afforded the ability to exchange messages with a media persona, and that persona then gives

feedback that indicates they received that message. This should elicit PSIs because PSIs are an experience of interaction and adjustment is an element of interactivity.

Similarly, adjustment may also increase social presence. Social presence is the salience of others in an interpersonal encounter (Aragon, 2003; Biocca et al., 2003). By sending messages, receiving feedback, and most importantly adjusting performance based on said feedback, (i.e., third-order dependency; Rafaelli, 1998), this may make the social aspects of a media persona salient. This is because third-order dependency is present in social interaction (Goffman, 1963). Thus, by introducing qualities present in social interaction (in this case adjustment) to parasocial contact, social presence should be elicited. These ideas inform the next hypothesis:

H2: Viewing vignettes with adjustment will increase (a) social presence and (b) parasocial interaction compared to vignettes with no adjustment.

If mediated intergroup contact is more effective when it mimics the social affordances of face-to-face social interaction (Harwood, 2010), then it is important to consider how addressing and adjustment may work in tandem to influence perceptions of parasocial contact with a media persona. When individuals interact interpersonally in face-to-face contexts, they often face each other, make eye contact, address each other by name, and exchange messages with third-order dependency. In terms of media stimuli, this would mean that media with high adjustment may be more effective at eliciting social presence or the experience of PSI when a media persona also engages in addressing, thus better mimicking face-to-face social interaction. This leads to the next hypotheses:

H3: There will be an interaction between adjustment and addressing: The condition with both adjustment and addressing will elicit more (a) social presence and (b) parasocial interaction than other conditions.

The logic above connects the manipulations of addressing and adjustment directly to PSI and social presence. Yet, it is possible that an important mediator exists between affordances and outcomes: the perception of those affordances. As noted by Wu (2005), the outcomes of afforded interactivity are mediated by users' perceptions of said interactivity. In other words, interactive media only elicited desired outcomes when audiences perceived that media as interactive.

Media is not perceived uniformly by all audience members. For example, Steuer (1992) notes that those familiar with the latest technology would view 35mm film as grainy, blurry, and substandard. Yet, to those without such experience, 35mm film may be perceived as clear and lifelike. This is all to say that the manipulations of addressing and adjustment will likely be viewed differently by different audience members. For example, those who enjoy interactive media with regularity may find the adjustment manipulation unimpressive, and not perceive much contingency. Those who do not frequently experience interactive media may find the adjustment manipulation to be a unique experience, and therefore perceive comparatively greater contingency.

Even so, it is usually easier to perceive an affordance when it is present than when it is absent (Wu, 2005). Thus, it makes sense that media with adjustment will elicit higher perceptions of contingency than media with no adjustment. Similarly, it makes sense that media with addressing will elicit higher perceptions of personalization than media with no addressing. What is less clear is whether audiences need to perceive the affordances of personalization and contingency for those manipulations to elicit any effects (i.e., social presence and PSI). Given that contingency is a subcomponent of interactivity (Sundar et al., 2011), the work of Wu (2005) suggests that perceived contingency may be a key mediator of the effects of adjustment on PSI or social presence. Yet, other work (e.g., Fox & McEwan, 2017) finds that affordances embedded

within other affordances are less perceptible to audiences. It is unclear whether personalization or contingency must be perceived in order to elicit PSI or social presence via addressing or adjustment, but the potential is compelling. These ideas lead to the next hypotheses and research questions:

H4: Media with addressing will elicit more perceived personalization than media with no addressing.

H5: Media with adjustment will elicit more perceived contingency than media with no adjustment.

RQ1: Will any interactions emerge whereby addressing and adjustment affect (a) perceived personalization or (b) perceived contingency?

RQ2: Will perceived personalization mediate the relationship between addressing and (a) social presence or (b) parasocial interaction?

RQ3: Will perceived contingency mediate the relationship between adjustment and (a) social presence or (b) parasocial interaction?

PSIs and social presence are conceptually similar, in that both capture elements of social interaction during media exposure. Given their conceptual similarity, it stands to reason that these two concepts would relate to each other. Additionally, when a media persona's social aspects are salient, it should be easier for audiences to feel they are in a social interaction (i.e., a PSI) because the contact partner is being thought of in a social manner. These ideas lead to the next hypothesis:

H6: Social presence will be positively correlated with parasocial interaction.

It is important to remember that the penultimate goal of these interventions is to generate positive affect towards a media persona (e.g., liking), which in turn will reduce prejudice. Other

studies have demonstrated that PSIs can lead to liking (Oliver et al., 2019; Tukachinsky & Stever, 2019) and sometimes strong affective ties like PSRs (Dibble et al., 2016). According to Hall (2018) focused social interactions are the best method to develop feelings towards or relationships with another individual. Focused social interactions, in turn, require mutual acknowledgement, conversational exchange, and mutual attention. Mutual acknowledgement and mutual attention are key elements of PSIs (Hartmann & Goldhoorn, 2011), and PSIs are partially characterized by an illusion of conversational exchange (Horton & Wohl, 1956). As such, it should be easier to develop affect towards a character in situations where the audience is experiencing a PSI, as this would elicit the sense of mutual attention, mutual acknowledgement, and conversational exchange that helps form stronger affect.

Similarly, social presence should lead to more liking because viewing others as social beings facilitates liking (e.g., Byron & Baldridge, 2007). Additionally, social presence makes it easier to individuate personae (de Vries, 2006). Individuation is very similar to the process of decategorization described by Pettigrew (1998), as both involve viewing a person as a unique individual. As such, social presence should also facilitate the decategorization that Pettigrew (1998) predicts is necessary to develop liking towards outgroup members. In situations with less social presence (e.g., unfocused social interactions; Goffman, 1963), those involved in social encounters are generally not individuated. This means that outgroup members would not be decategorized, a crucial first step to developing positive affect towards outgroup members (Pettigrew, 1998; Turner et al., 1987).

It is important to note that per intergroup contact theory (Pettigrew, 1998), contact should only elicit liking of outgroup members if it is pleasant. Because media experiences can also be unpleasant (e.g., Bernhold, 2019; Jennings & Alper, 2016; Tian & Hoffner, 2010), not all

parasocial contact should elicit liking of outgroup characters. The goal of this intervention is to have audiences perceive the encounter as enjoyable, or at least not unpleasant, and these hypotheses assume that the media experience will not be unpleasant. Yet, social presence and PSIs should make it easier for liking to develop compared to the same conditions without social presence or PSI. These ideas inform the next hypothesis:

H7: Experiencing (a) social presence and (b) parasocial interaction with a media character will result in more liking of that media character.

Another facet that may elicit liking of a media character are the affordances of the media that character is part of. For example, interactive media have been found to be more enjoyable than uninteractive media (e.g., Gonzalez et al., 2009; Klimmt et al., 2006). This may cause audiences to like characters in media with adjustment more than characters appearing in media without adjustment. Work directly connecting message personalization to enjoyment is rarer than work on interactivity and enjoyment. Yet, work in marketing has found that personalized shopping experiences lead to higher satisfaction (e.g., Ball et al., 2006). This somewhat suggests media which afford personalized experiences, such as addressing, may be more enjoyable and elicit more positive evaluations of media personae.

In addition, following the same argumentation as hypotheses above, it is possible that audiences will need to perceive the affordances of contingency and personalization in order for adjustment or addressing to have any effect on liking of a character. Taken together, these ideas inform the next hypotheses and research questions:

H8: Media with (a) addressing and (b) adjustment will elicit more liking of a media character than media without those affordances.

H9: Media that feature both addressing and adjustment will elicit more liking than any other condition.

RQ4: Will perceived personalization mediate the relationship between addressing and liking?

RQ5: Will perceived contingency mediate the relationship between adjustment and liking?

Social Presence, PSI, Liking, and Prejudice Reduction

Intergroup contact theory (Pettigrew, 1998) predicts that prejudice towards an outgroup is reduced by having a positive attitude (e.g., liking) towards an outgroup member. When a liked outgroup member is viewed in a group-salient context, this creates cognitive dissonance. The positive affect towards the outgroup member conflicts with the prejudicial attitudes towards the outgroup, and one of these clashing attitudes must be discarded (Pettigrew, 1998). Thus, liking an outgroup media character could reduce prejudice towards the entire outgroup (e.g., Bond, 2021; Schiappa et al., 2005; Stark et al., 2013).

The paragraph above describes the main mechanism through which this study hopes to reduce prejudice: positive affect. Yet, there are other mechanisms independent of affect that can also reduce prejudice (Pettigrew, 1998). For example, through social presence outgroup members can become individuated. This individuation could highlight that outgroup members are not homogeneous, but rather diverse individuals (Hewstone & Brown, 1986). Social presence with outgroup members could thus weaken stereotypic knowledge structures that inform prejudicial attitudes, even if audiences do not like the outgroup character (Macrae & Bodenhausen, 2000; Pettigrew, 1998). Similarly, experiencing parasocial interaction could cause audiences to perceive the media exposure to be more akin to social interaction. This means audience members

may ascribe individuality and mindfulness to the media persona (Hartmann & Goldhoorn, 2011), thus humanizing them and weakening perceptions of a homogeneous outgroup. Typically, individuals require multiple intergroup contact events to override existing stereotypes (Pettigrew, 1998). Yet, media exposure may reduce prejudice outside of the affective mechanism of intergroup contact theory. Thus, this dissertation poses the final hypothesis and research question:

> **H10:** Experiencing (a) social presence with, (b) parasocial interaction with, and (c) liking of a transgender media character will result in greater prejudice reduction towards transgender people.
>
> **RQ6:** Will experiencing (a) social presence or (b) parasocial interaction with a transgender media character result in reduced prejudice towards transgender people when controlling for character liking?

Pretest**: Pilot Study**

Method

Participants

Participants were 96 adult individuals recruited from Mturk, an online participant pool. Of these 96 participants, three did not complete the survey, four participants had abnormally long completion times based on outlier analyses, three had missing data, and one revealed straightlining in their responses. All these participants were deleted from the dataset, leaving a final sample of 88 adults. Participants were paid $0.75 for their time.

Procedure

After filling out the consent form, participants saw one video that featured a media character, Ashe. Ashe was developed in conjunction with a professional artist. Four total videos were created for the pretest. In the video, Ashe talks about herself and animal shelters, a cause that is important to her. Ashe's speech was delivered with audio provided by a fellow graduate student. Ashe does not reveal her transgender identity in this video. Participants were randomly assigned to one of four conditions: the addressing and adjustment condition (n = 21), the addressing and no adjustment condition (n = 24), the no addressing and adjustment condition (n = 19), and the no addressing and no adjustment condition, (n = 24).

After viewing the stimulus, participants responded to questions indicating if they noticed the addressing and adjustment conditions. Additionally, they assessed the physical attractiveness of Ashe, their liking of Ashe, the salience of Ashe's gender identity, the realism of Ashe, and their enjoyment of the narrative. Participants also had the opportunity to respond to an open-ended question about Ashe to give more nuanced, specific feedback if they so choose. The order of items within scales was randomized, but the order of scales was not.

Materials

Stimulus

In all stimuli, participants watched a video with a media character, Ashe. The characteristics of the video changed depending on the pilot condition. In the adjustment conditions, Ashe asks questions of participants, who had the ability to respond using multiple choice. Ashe then acknowledged their choice in a sentence before continuing on with her speech. In the no adjustment conditions, Ashe does not pose a question and participants did not have the opportunity to respond, meaning her communication is uninterrupted. In the addressing conditions, Ashe faces and makes eye contact with the camera and talks to the camera directly. In the no addressing conditions, Ashe faces away from the camera at approximately a 60-degree angle and never makes eye contact with the camera.

Measures

Descriptive statistics for all measures can be found in Table 1.

Table 1
Descriptive Statistics and Correlations for the Pilot Study

Variable	M	SD	1	2	3	4	5	6
1. Adjustment	4.52	1.66	X					
2. Addressing	3.97	1.22	.58***	X				
3. Attractiveness	4.67	0.69	.215*	.43***	X			
4. Liking	5.10	1.37	-.21*	.06	.20	X		
5. S.I. Salience	4.08	1.68	.53***	.33**	.31**	-.38***	X	
6. Realism	4.90	1.68	.30**	.43***	.44***	.00	.32**	X
7. N. Enjoyment	5.16	1.24	.25*	.56**	.60***	.27*	.17	.33**

*$p < .05$ **$p < .01$ ***$p < .001$.

Addressing

To ensure that those in the addressing condition perceived more addressing than the no addressing condition, participants were asked if they felt addressed by the media persona using measures adapted based on previous work on the experience of PSI (Hartmann & Goldhoorn, 2011). The first item was taken directly from their work: "I felt addressed by Ashe." Two additional items were written for this pretest: "I felt Ashe was talking to me" and "Ashe was speaking to me, specifically." Participants responded on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*; $\alpha = .77$).

Adjustment

To ensure those in the adjustment condition perceived more adjustment than those in the no adjustment condition, participants were asked if they felt the media persona adjusted their performance based on their feedback by asking them to rate their agreement with the statements, "I felt Ashe adjusted her messaging based on my response," "Ashe chose her responses based on what I said," and "Ashe responded to me" on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*; $\alpha = .82$). Responses across all three items were averaged to calculate a final adjustment score.

Physical Attractiveness

To assess attractiveness of Ashe, participants responded to six items drawn from the Physical Attraction scale (McCroskey, McCroskey, & Richmond 2006). Some items were cut for appropriateness (e.g., "Ashe is sexy looking") and to keep the pretest under five minutes. Participants rated their agreement on a seven-point Likert scale ranging from 1 (s*trongly*

disagree) to 7 (s*trongly agree*). One example item is “Ashe is pretty.” Some items were reverse coded.

The attractiveness scale was not reliable, $\alpha = .49$. Two reverse-coded items, which were less reliable than the other items, were removed to achieve acceptable reliability leaving a final four-item scale, $\alpha = .70$. The items that were removed are italicized in Appendix A. Responses across all four items were averaged to calculate a final measure of Ashe’s attractiveness.

Liking

To assess liking of Ashe, participants rated their agreement on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). These items were “I like Ashe” and “I dislike Ashe” (reverse coded). These items were averaged together to compile a mean liking of Ashe, $r[86] = .25$, $p = .018$.

Social Identity

To ensure that Ashe’s social identities were not salient in the individuating video, participants responded to a manipulation check adapted from Voci and Hewstone (2003). In this check, participants report on their perceptions of difference between themselves and an interaction partner, in this case Ashe: “How aware were you of differences between you and Ashe?” They also report on whether they thought a particular social identity (in this case gender) was relevant to their interaction: “How much did gender matter when watching the video with Ashe?" Both items used a seven-point scale ranging from 1 (*not at all*) to 7 (*very much*). Items were averaged to create a final measure of social identity salience, $r[86] = .44$, $p < .001$.

Realism

To assess whether Ashe was perceived as realistic or fictional, participants reported their agreement with two items on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7

(s*trongly agree*). These items are "Ashe seemed like a real person" and "Ashe seems fictitious" (reverse coded). The items did not correlate, $r[86] = .09$, $p = .420$. They were thus treated as individual items, and ultimately only the first was used in final analyses.

Narrative Enjoyment

To see if audiences enjoyed the vignette, narrative enjoyment was assessed using the Enjoyment scale (Oliver & Bartsch, 2010). Participants rated their agreement with three items on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). An example item includes "The animated story was fun to watch" ($\alpha = .77$). Responses across all three items were averaged to calculate a final measure of narrative enjoyment.

Data Cleaning

Data were cleaned in SPSS. The first step of data cleaning was to eliminate participants who did not complete the study to satisfaction. Thus, all participants who did not finish the survey were eliminated. Next, data were manually checked to see if participants failed to complete any scales used in analyses; any who did were eliminated. Next, data were checked for outlier completion times. This led to the elimination of four participants. Finally, a manual combing of data was conducted to eliminate any straightlingers or participants whose data could not be trusted for self-reported reasons (e.g., technical issues).

Next, experimental manipulations were dummy coded so they could be used as independent variables in hypothesis testing. If an affordance manipulation was present, it was coded as a "1." If it was not present, it was coded as a "0." For example, the condition where addressing was present but adjustment was not would be coded as "1" for addressing and a "0" for adjustment. Next, all reverse coded items were inverted, and scales were compiled to test for reliability. Any scale that had a reliability below .70 was checked to see if eliminating any items

resulted in higher reliability. For measures with fewer than three items, it is inappropriate to calculate Cronbach's alpha. As such, scales with two items were checked to see if the two items correlated instead. In one instance, they did not. In that case, the first item in the scale was judged to have higher face validity and was kept.

Data were also checked for outlier responses across all scales using the explore function in SPSS and identifying outlier cases for all variables. Some outliers appeared whereby a small number of participants reported extremely low perceptions of adjustment. On a manual check of these participants, all of them were in the no adjustment condition, which makes it unsurprising that they perceived low levels of adjustment. One approach would be to remove these outliers from the dataset. Yet, recently the practice of removing outliers has come under criticism, particularly when it is feasible that the outliers are giving honest, accurate data (e.g., Bakker & Wicherts, 2014). The responses for each of these participants was also manually rechecked for straightlining and other signs of inattention, and none was detected. Given that these outlier participants are likely answering honestly, they were left in the final dataset. No other variables contained outlier responses.

Results

For the pretest, the main analyses consisted of two-way ANOVAs with the addressing and adjustment conditions as independent variables. The first was to make sure that the adjustment condition led to higher perceptions of adjustment. There was a main effect for the adjustment manipulation whereby those in the high adjustment condition ($M = 5.02$, $SD = 1.19$) perceived more adjustment than those in the low adjustment condition ($M = 4.09$, $SD = 1.87$), $F(1, 84) = 18.85$, $p = .008$. $\eta^2 = .08$. This

indicates that those in the high adjustment condition noticed adjustment, whereas those in the no adjustment condition felt neutrally and did not fully perceive that adjustment.

The second two-way ANOVA was to make sure that the addressing condition led to higher perceptions of addressing. There was no main effect for the addressing condition, $F(1, 84) = 0.20$, $p = .657$, $\eta^2 = .00$. There was no main effect for the contingency condition, $F(1, 84) = 3.08$, $p = .0.83$, $\eta^2 = .04$. There was also no interaction effect, $F(1, 84) = 0.01$, $p = .932$, $\eta^2 = .00$. It thus appears that the addressing manipulation was unsuccessful at eliciting different perceptions of addressing.

Some additional analyses were run to see if perceptions of Ashe differed across conditions in other ways. To ensure Ashe was perceived as equally physically attractive in all conditions, a two-way ANOVA was run with the addressing and adjustment conditions as independent variables and perceptions of Ashe's attractiveness as the dependent variable. The results of this test yielded no effects for the addressing manipulation, $F(1, 84) = .06$, $p = .809$, $\eta^2 = .00$. There was no main effect for the adjustment manipulations, $F(1, 84) = 0.57$, $p = .454$, $\eta^2 = 0.01$. It also yielded no interaction effects, $F(1, 84) = .15$, $p = .704$, $\eta^2 = 0.00$. This indicates that Ashe's attractiveness was not perceived significantly differently across conditions.

To ensure Ashe's gender identity was equally salient across conditions, a two-way ANOVA was run with the addressing and adjustment conditions as independent variables and identity salience as the dependent variable. The results of this test yielded no effects for the addressing, $F(1, 84) = 0.03$, $p = .858$, $\eta^2 = 0.00$. There was no main effect for the adjustment manipulations, $F(1, 84) = 0.29$, $p = .592$, $\eta^2 = 0.00$. It also yielded no

interaction effects, $F(1, 84) = 0.11$, p .740, $\eta^2 = 0.00$, suggesting that Ashe's social identity was not perceived significantly differently across conditions.

To see if Ashe was liked significantly more in any conditions, a two-way ANOVA was run with the addressing and adjustment conditions as independent variables and liking as the dependent variable. The results of this test yielded no main effect for the addressing condition, $F(1, 84) = 0.27$, $p = .605$, $\eta^2 = 0.00$. There was no main effect for the adjustment manipulations, $F(1, 84) = 0.06$, $p = .811$, $\eta^2 = 0.00$. It also yielded no interaction effects, $F(1, 84) = 0.10$, $p = .750$, $\eta^2 = 0.00$, suggesting that Ashe was not liked or disliked significantly differently across conditions.

To ensure the narrative was not enjoyed significantly more in any conditions, a two-way ANOVA was run with the addressing and adjustment conditions as independent variables and identity salience as the dependent variable. The results of this test yielded no main effect for the addressing condition, $F(1, 84) = 1.13$, $p = .291$, $\eta^2 = 0.01$. There was no main effect for the adjustment manipulations, $F(1, 84) = 0.56$, $p = .450$, $\eta^2 = 0.01$. It also yielded no interaction effects, $F(1, 84) = 0.36$, $p = .549$ $\eta^2 = 0.00$. This suggests that the narrative enjoyment was not significantly different across conditions.

This dissertation also examined pretest participants' assessments of Ashe's physical attractiveness, group salience, narrative enjoyment, and liking of Ashe to ensure these reports were not too high or too low, thus ensuring that attitudes about the media persona did not start at extremes during the main study. The means of most scales fell around the midpoint of their scales (i.e., four on a scale from one to seven), which indicates neutral feelings. One exception was self-reports of perceived addressing. In both the addressing and no addressing conditions, participants did not report perceiving

addressing. The social identity salience measure was slightly higher than expected, also scoring near the midpoint of the scale. Full descriptive statistics and correlations for the pretest can be found in Table 1.

Discussion

Overall, findings from the pilot study suggest that the adjustment manipulation was successful, but the addressing manipulation was not. Participants noticed more adjustment, the operationalization of contingency, in the adjustment condition compared to the no adjustment condition. The manipulation of addressing, the operationalization of personalization, did not lead to participants experiencing more addressing than in the no addressing condition, and perceptions of addressing were below the midpoint in both conditions. There were no interaction effects.

Participants' reports of Ashe's social identity salience were a bit higher than anticipated, indicating they felt identity was relevant to some extent. Looking at the items used, this result may be because audiences perceived differences between Ashe and themselves, even if gender was not the salient identity. For example, participants may have felt different than Ashe due to her being animated or based on other identity-relevant information (e.g., her being from Ohio). Looking at the items individually, it seems that participants perceived differences between themselves and Ashe but did not feel that gender was an important factor during the video. It is perhaps unsurprising that participants perceived differences between themselves and an animated character. More importantly, participants did not perceive Ashe's gender identity to be highly salient. Given that the video shown in this pretest is supposed to be individuating and not make Ashe's transgender identity salient, it was most important that participants did not judge Ashe on the basis of her gender. Thus, even though some participants did report sensing differences

between themselves and Ashe, this was deemed an acceptable level of identity salience given the gender item's lower score.

Limitations

The addressing condition was not successful at eliciting perceptions of addressing. On average, participants scored below the midpoint of the scale assessing perceptions of addressing. The overall mean for addressing was low (M = 3.97, SD = 1.22), and did not significantly differ across conditions. This is probably because the manipulation was quite weak. Ashe was only on screen for around a minute and does not engage in elements that are often present in personalized messaging, such as addressing the audience by name (Fairclough, 1987). Ideally, the stimulus would be redone to bolster the personalization in the addressing condition. For example, having Ashe address participants by name in the addressing condition may have increased perceptions of addressing, but this would be prohibitively expensive and time consuming to produce. Another approach may have been having Ashe face further away from the camera in the no addressing condition, which would not increase perceptions of addressing but may have differentiated the two experimental conditions more. Yet, given budgetary and time concerns, it was instead decided to move forward and hope that a difference between the no addressing and addressing conditions emerged with a larger sample size in the main study.

Another limitation is the lack of demographic information collected. This was done to keep the pretest at under five minutes for budgetary reasons. Regardless, the lack of demographic information limits the ability to tell if the manipulations were more successful for some groups than others. In particular, not collecting gender information in the pretest means that it is difficult to tell if women or men responded differently to Ashe in important ways (e.g., liking, perceptions of differences), given that women share a social identity with Ashe that men do not.

This study also did not administer survey attention checks or content attention checks, which tempers confidence that all participants were attentive and thoughtful in their responses. It is possible that inattention distorted findings about the effectiveness of manipulations. There was one open-ended question at the end of the survey which participants had the option of responding to, but that was not sufficient to filter out bots or inattentive respondents because it was optional.

Another limitation is the low reliability of some of the scales. For example, despite high face validity the attractiveness measure was not reliable until two items were removed, and the two realism items did not correlate with each other. The two removed items in the attractiveness scale were reverse coded, so the low reliability for that measure may be due to acquiescence bias (Savalei & Falk, 2014). The two items for realism "Ashe seemed real" and "Ashe seemed fictitious" seem like they should have correlated but may be measuring different concepts. For example, Tsay-Vogel and Schwartz (2014) discuss how fictional characters can be authentic or inauthentic. Thus, perhaps audiences felt Ashe was a fictional character, but also felt she was a realistic depiction of a person who *could* be real. An alternative explanation for the low reliability is data validity issues. Other scholars have noted that Mturk data sometimes results in low reliability on scales due to inattentive respondents (Fleischer, Mead, & Huang, 2015). Data were cleaned to the most thorough extent possible, but the lack of attention check hampers the ability to remove all inattentive respondents for the pretest. Three attention checks were added for the main study to ameliorate this concern.

The finding that the attractiveness scale was unreliable was more surprising, given that all six items are from an established measure. The two items that were cut to establish reliability were the reverse coded items. It is possible that the reason for this is acquiescence bias, which occurs because participants have a tendency to indicate agreement with Likert scale items.

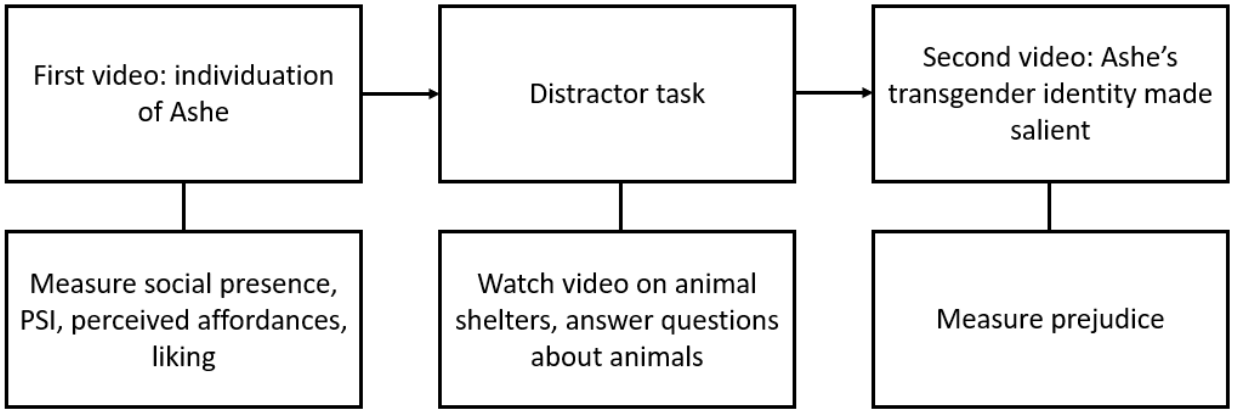
Unfortunately, it is difficult to verify this given the lack of other scales that use reverse coded items in the pretest.

Chapter 10: Main Study

Having established the validity of the manipulation for this study, the next step was to collect data. The main study was completed in three main steps, detailed more specifically below. First, participants watched an individuating video of Ashe, a transgender woman, and self-reported on their experience with the media stimulus. Next, they completed a short distractor task. Finally, Ashe revealed to the participants that she was transgender, and participants reported on their attitudes towards transgender women.

Figure 2

Overview of Study Procedure



Method

Participants

Participants were 373 cisgendered individuals recruited from Mturk, an online participant pool. Participants were paid $3.00 for their time. Participants were screened to ensure they did not miss attention checks, responded to all scales, and were not transgender themselves. This led to 18 people being eliminated for failing attention checks, 35 people being eliminated for not reporting either their sex or gender, 53 people being eliminated for failing to complete all scales. Data were also manually examined for issues that may not appear in automated checks, such as straightlining. Comments left by participants were also read to screen for self-reported issues that

may have arisen during the study. These manual checks led to one person being eliminated for self-reporting tech issues with the videos, three being eliminated for straightlining, and one person being eliminated who self-reported being transgender. Another person who self-reported being transgender in the quantitative demographic questions corrected themselves in an open-ended comment, indicating their initial response was a mistake. This person was left in the dataset. The final sample ($N = 262$) ranged from 20 to 78 years old ($M = 34.21$, $SD = 9.53$). Participants were predominantly White (76.3%), with Black/African descent (6.5%), Asian (8.0%) and Hispanic/Latino (6.1%), Indigenous/Native American (0.8%), Middle Eastern (0.4%), and Multiracial participants (1.5%) making up the rest of the sample. Most participants were cisgender men (76.7%), with the rest being cisgender women (23.3%).

After finalizing the sample, a post hoc power analysis was conducted using G*Power3 (Faul, Erdfelder, Lang, & Buchner, 2007) to test that the sample would be powerful enough to observe results in a linear multiple regression with a small effect size ($R^2 = .10$; $f^2 = 0.11$) and an alpha of .05. Result showed that a total sample of 262 participants was sufficient to achieve a power of 0.91. Another power analysis was run to see if the sample size was sufficient to detect small main effects and interaction effects ($\eta^2 = 0.05$) in ANOVAs. This test showed a power of 0.89.

Procedure

The experiment was administered via Qualtrics, an online survey platform. Although the participants watched multiple videos over the course of the study, the entire procedure took place in one sitting. After reading the consent form and agreeing to participate in the study, participants were randomly assigned to one of four conditions: the addressing and adjustment

condition (n = 67), the addressing and no adjustment condition (n = 66), the no addressing and adjustment condition (n = 65), and the no addressing and no adjustment condition (n = 64).

In part one of the study, participants viewed a video. In that video, they were introduced to the animated media persona, Ashe, in an individuating context as she talked about herself and her interests. After watching this video, participants reported on perceived contingency, perceived personalization, social presence, experience of PSI, and liking of Ashe. Additionally, participants completed attention checks to ensure they paid attention to the stimulus. Next, they watched the video on animal shelters, which was two minutes long, and completed a short distractor questionnaire about animals where they reported how much they liked animals and their attitudes about animal shelters.

In the second part of the study, participants watched another video with the same adjustment and addressing elements as they saw in the first video with Ashe. Participants again viewed this video within the instrument. In this video, Ashe told participants she is transgender to make that social identity salient. Ashe then talks about her experiences as a transgender woman for about two minutes. After participants finished watching the stimulus, they completed a questionnaire assessing prejudice towards transgender individuals, intergroup anxiety, narrative enjoyment, previous contact with transgender people, and demographic questions. Participants also could provide open-ended feedback or comments if they chose.

Some additional variables were measured in this study that are not considered for this dissertation report.

Materials

Stimuli

In all stimuli, participants watched a video with a media character, Ashe. The characteristics of the video changed depending on the experimental condition. In the adjustment conditions, Ashe asks questions of participants, who had the ability to respond using multiple choice. Ashe then acknowledged their choice in a sentence before continuing her speech. In the no adjustment conditions, Ashe does not pose a question and participants did not have the opportunity to respond, meaning her communication is uninterrupted. In the addressing conditions, Ashe faces and makes eye contact with the camera and talks to the camera directly. In the no addressing conditions, Ashe faces away from the camera at an approximately 60-degree angle and never makes eye contact with the camera.

All participants saw two videos with Ashe. In the first, Ashe is individuated and talks about herself and things that are important to her. This video was animated and featured voice acting, as was true in the pretest. Ashe talks about herself, where she's from, and her hobbies which include skateboarding. After introducing herself, she asks the participant to watch a video on animal shelters, a cause that is important to her. In the adjustment conditions, Ashe asks if participants know how many people skateboard in the US, if they are aware of how many animals are in shelters and asks them to guess her plan for addressing the problem. These questions are not posed in the no adjustment conditions. This video lasted for a total of 65 seconds in the adjustment conditions and 55 seconds in the no adjustment conditions.

In the second video, Ashe talks about her experiences as a transgender woman for a total 102 second in the adjustment conditions and 90 seconds in the no adjustment conditions. This video was also animated and featured voice acting. In this video, Ashe talks about how she came out as transgender to her friends she met volunteering at the animal shelter and her experiences as she started to use her new pronouns, before expressing her fears regarding discrimination and

hope that others will accept her like her friends have. In the adjustment conditions, Ashe asks if participants know how many transgender individuals live in the US and how many transgender individuals report harassment or violence against themselves. These questions are not posed in the no adjustment conditions, but the same information was provided in a statement by Ashe.

Measures

Descriptive statistics for all items can be found in Table 2.

Table 2
Descriptive Statistics for the Main Study

Variable	Mean	SD
Perceived Contingency	4.48	1.44
Perceived Personalization	4.30	1.51
PSI	4.48	1.56
Social Presence	4.68	0.89
Liking	4.82	1.06
Prejudicial Attitudes	3.97	1.68
Discrim. Behavioral Intent	3.03	1.32

Note. All scales range from 1-7. All means and standard deviations are for the first instance each variable was collected.

Perceived Contingency

Perceived contingency was measured using an 11-item scale adapted from Sundar and colleagues (2016) and their study of user perceptions of contingency in an online website. Participants rated their agreement with these eleven statements on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). Example items include "I felt the character's responses were dependent on my input" and "The messages I received from Ashe were based on my previous inputs" ($\alpha = .94$). Responses across all eleven items were averaged to calculate a final measure of perceived contingency.

Perceived Personalization

Perceived personalization was measured using four items adapted from Kalyanaraman and Sundar (2006), which were originally used to examine perceived personalization and tailoring of websites. Participants rated their agreement with these four statements on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). These items were adapted to fit a media character. One example item is "Ashe talked to me as a unique individual" ($\alpha = .88$). Responses across all four items were averaged to calculate a final measure of perceived personalization.

Social Presence

Social presence was measured using the Perceived Other's Copresence scale (Nowak & Biocca, 2003). Participants rated their agreement with eleven items on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). Example items include "My interaction partner made our conversation seem intimate" and "My interaction partner was interested in talking to me" ($\alpha = .71$). Some items were reverse coded. Responses across all ten items were averaged to calculate a final measure of social presence with Ashe.

A CFA revealed that one item for social presence loaded poorly and was thus removed (italicized in Appendix B; $\alpha = .69$).

Experience of Parasocial Interaction

Experience of parasocial interaction was assessed using the Experience of Parasocial Interaction Scale (ePSI; Hartmann & Goldhoorn, 2011). This six-item scale has participants rate how much they perceive mutual attention (items 1-4) and mutual adjustment (items 5-6) between themselves and a media persona on a seven-point Likert-scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). Example items include "I had the feeling that Ashe was aware of me" and

"I had the feeling that Ashe knew I reacted to her" (α = .91). Responses across all six items were averaged to calculate a final measure of ePSI with Ashe.

Liking

Character liking was measured using four items developed by Cohen, Myrick, and Hoffner (2021). These items have participants rate agreement with statements on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). An example item is "I like Ashe" (α = .71). Some items were reverse coded. Responses across all six items were averaged to calculate a final measure of liking of Ashe.

Prejudice towards Transgender Women

Prejudice towards transgender people was measured using the Attitudes Towards Transgender Women subscale (ATTW) from the Attitudes Towards Transgender Men and Women scale (ATTMW; Billard, 2018). This 12-item subscale has participants report their agreement with statements that indicate their attitudes and stereotypic associations towards transgender women on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*; α = .96). An example item is "Transgender women will never really be women." Responses across all twelve items were averaged to calculate a final measure of prejudice towards transgender women.

Discriminatory Behavioral Intent Towards Transgender People

As an exploratory measure participants completed the Negative Intentions and Positive Intentions subscales of a measure of transgender prejudice compiled by Barbir and colleagues (2017). These subscales had 21 items in total, and had participants report their agreement with statements that indicate their behavioral intentions towards transgender people on a seven-point Likert scale ranging from 1 (s*trongly disagree*) to 7 (s*trongly agree*). The positive intention

towards transgender people subscale had ten items, an example being "I would stick up for a trans person being bullied" (α = .92). The negative intentions towards transgender people subscale had eleven items, one example being "I would refuse to engage in conversation with a trans person" (α = .96). To compile this measure, the positive intention subscale was reverse coded. Then, responses across all twenty-one items were averaged, with higher scores indicating more discriminatory behavioral intentions (α = .94).

Results

Table 3
Correlation Matrix for Main Study

	1	2	3	4	5	6
1. P. Contingency	X					
2. P. Personalization	.66***	X				
3. Social Presence	.06	.14*	X			
4. PSI	.71***	.75***	.09	X		
5. Liking	.02	.01	.67***	.09	X	
6. Prej. Attitudes	.13**	.16***	-.37***	.22***	-.29***	X
7. Behav. Intent	.16**	.17**	-.53***	.24*	-.52***	.78***

*$p < .05$. **$p < .01$. ***$p < .001$.

Data Cleaning

After data for the main study was collected, data were cleaned in SPSS. The first step of data cleaning was to eliminate participants who did not complete the study to satisfaction, as noted above. First, the attention check items were compiled into an attention check counter; each successful attention check added one to the counter, and participants whose attention counter was below two were eliminated from the dataset. Data were next checked using a descriptive statistics report to ensure participants reported their sex and gender. Participants who failed to report either were eliminated. Next, data were manually checked to see if participants failed to complete any scales used in analyses; any who did were eliminated. Finally, a manual combing of data was conducted to eliminate any outliers or participants whose data could not be trusted

for self-reported reasons (e.g., technical issues). The full breakdown of eliminated participants is in Appendix G.

Next, experimental manipulations were dummy coded so they could be used as independent variables in hypothesis testing. If an affordance manipulation was present, it was coded as a "1." If it was not present, it was coded as a "0." For example, the condition where addressing was present but adjustment was not would be coded as "1" for addressing and a "0" for adjustment. Next, all reverse coded items were inverted, and scales were compiled to test for reliability. Any scale that had a reliability below .70 was checked to see if eliminating any items resulted in higher reliability. This only applied to the social presence scale after eliminating an item that did not contribute to factor loading. Eliminating more items from that scale did not improve reliability. Given how close social presence was to the .70 threshold, the scale was left alone.

Data were also checked for outlier responses across all scales using the explore data procedure in SPSS. Some outliers appeared whereby a small number of participants reported extremely low PSI with and liking of Ashe after she revealed her transgender social identity. This is not surprising, as some participants may have reacted negatively to her transgender identity. Recently, statisticians have criticized the removal of outliers in cases where it is feasible that outlier responses are accurate data (e.g., Bakker & Wicherts, 2014). Given that these outlier participants are plausibly answering honestly about their severe dislike of Ashe, they were left in the final dataset. No other variables contained outlier responses.

There was concern that PSI and social presence would covary. Additionally, some scales had unusually high correlations (Table 3). For both of these reasons, a confirmatory factor analysis was run to ensure that items generally mapped to the intended scales. This CFA

included the perceived contingency, perceived personalization, PSI, social presence, and liking measures. Overall, it was found that the model had acceptable, but not good, fit (RMSEA = .10; COMIN/DF = 4.06, $p < .001$). Scholars disagree on the ideal RMSEA, but consensus puts the value between .06, and .10 (Awang, 2012; Browne & Cudeck, 1992; Sage, 2019).

Looking more closely at the items, it appears that reverse coded items (e.g., "I dislike Ashe") generally loaded poorly, explaining the marginal overall fit. It is possible this is due to acquiescence bias, which occurs because participants have a tendency to indicate agreement with Likert scale items. Other potential explanations for the observed pattern are inattentiveness, bots, or straightlining: all of which have been noted as potential problems in Mturk samples (Fleischer et al., 2015). However, data featured multiple attention checks that should have eliminated most bots or straightlining participants. The data were also manually examined for straightlining and outliers, which resulted in the manual elimination of three more participants. This makes inattentiveness, botting, and straightlining unlikely explanations for the observed patterns

Acquiescence bias has been noted to distort factor loadings with scales that include reverse-coded items (e.g., Savalei & Falk, 2014; Suarez-Alvarez et al., 2018; Woods, 2006). Yet, scholars disagree about how to address this issue. Some argue against using scales with reverse-coded items to avoid this issue (e.g., Suarez-Alvarez et al., 2018). In this study, removing reverse coded items improved model fit (RMSEA = .07; CMIN/DF = 2.28), but exacerbated concerns about covariance between items. Yet, others have found that leaving reverse-coded items in validated scales does not necessarily harm data quality if the scales are reliable (e.g., Dueber et al., 2021; Savalei & Falk, 2014), even with marginal factor loading. Beyond factor loading, others have noted that removing reverse-coded items from scales exacerbates data quality issues

arising from acquiescence bias such as floor effects or overestimating descriptive statistics (Plieninger, 2017).

Savalei and Falk (2014) recommend a new method of CFA where one adds an orthogonal factor to represent acquiescence bias, giving it a loading of one with all items in each reverse coded scale before using items before they are reverse coded. This can mitigate the effect of acquiescence bias on factor loading. Using the method proposed by Savalei and Falk (2014), the CFA was run again. Using their method, the factor loading was improved (RMSEA = 0.08; CMIN/DF = 2.72, $p < .001$; Table 4). Although the chi square indicates a poor fitting model, data scientists have judged it to be too stringent a measure for model fit (Sage, 2019). Other tests generally indicate good model fit. Awang (2012) recommends that CMIN/DF values be below five, and RMSEAs should be below 0.08. The only measure of model fit that was not ideal was CFI (Sage, 2019). Given that the scales used herein were validated using reverse-coded items, achieved high overall reliability, and that the CFA using Savalei & Falk's (2014) acquiescence bias-correcting method yielded improved results, the reverse coded items were included in the compiled scales. This decision was made to minimize the impact of acquiescence bias through inflated means on the social presence and liking scales. See Appendix E for more tables showing results of the CFA.

Table 4

Model Fit for Measures using Savalei & Falk's Method

NPAR	CMIN	DF	CMIN/DF	P Value	RMSEA	CFI
123	1680.82	617	2.72	< .001	.08	.84

There were concerns that some measures, particularly PSI and social presence, would covary to an extent that they would result in multicollinearity when both were entered into the same model. Multicollinearity refers to a statistical phenomenon where analyses become less

reliable when two predictor variables that correlate strongly are both entered as independent variables. According to Allison (1999), a collinearity tolerance below .40 is worrying, and a collinearity tolerance below .25 is unacceptable. Others posit that a tolerance as low as .1 is acceptable (e.g., Tabachnick & Fidell, 2001). For some analyses, namely regressions, social presence and PSI were both independent variables. Additionally, the decision to leave reverse-coded items in their respective scales may exacerbate multicollinearity issues (Suarez-Alvarez et al., 2014). Thus, all regressions will be run to assess collinearity tolerance to ensure it does not go below .40 (Allison, 1999).

Even with these precautions, correlations between some variables indicate that covariance, and thus multicollinearity, may be a concern (Table 3). Correlations between .70 and .90 have been noted to violate norms of discriminant validity and result in multicollinearity concerns (Fornell & Lacker, 1981). The CFA also revealed high covariance between some variables. In particular, the perceived contingency measure covaried strongly with the perceived personalization measure and the PSI measure. The PSI measure also covaried strongly with the perceived personalization measure (Table 5). It appears that this high covariance between the three scales is at least partially responsible for the subpar CFI. To test this, perceived personalization and PSI, the two scales with the highest covariance, were removed and the CFA was run again. This time, the CFI was better (CFI = .87). There was also some weaker covariance between social presence and liking.

Covariance among the perceived affordance items and PSI is unfortunate but unsurprising, given the conceptual similarity between many constructs in this study. Analyzing data with such high covariance is potentially problematic (Fornell & Larcker, 1981). In other circumstances, it would be prudent to remove two of the problematic measures from the final

paper. Yet, some hypotheses require these variables. Analyses with the perceived contingency, perceived personalization, and PSI variables are presented here, but they should be interpreted with high caution given the multicollinearity concerns. Social presence and liking also covaried, but not as strongly as the other three variables. To ensure that including both variables as predictors does not result in multicollinearity, all tests with both variables will be examined for collinearity tolerance (Allison, 1999) and condition index (IBM, n.d.).

Table 5

Covariances for All Items in the Final CFA

Variable Pair	Estimate	S.E.	C.R.	P Value
1. ePSI + S. Presence	0.34	0.05	0.66	.509
2. ePSI + Liking	0.02	0.08	.295	.768
3. ePSI + P. Contingency	1.76	0.21	8.08	< . 001
4. ePSI + P. Personalization	1.86	0.22	8.49	< . 001
5. S. Presence + Liking	0.28	0.07	4.07	< .001
6. S. Presence + P. Contin.	-0.01	0.11	-0.78	.891
7. S. Presence + P. Personal.	0.05	0.05	0.92	.359
8. Liking + P. Contin.	-0.06	0.08	-.78	.435
9. Liking + P. Personal.	0.07	0.08	0.87	.381
10. P. Contin. + P. Personal.	1.63	0.21	7.81	< . 001

Hypothesis Tests

Hypotheses 1a, 2a, and 3a predicted that the addressing condition (H1a), adjustment condition (H2a), or both (H3a) would lead to greater social presence compared to the no adjustment or no addressing conditions. These hypotheses were tested using a two-way ANOVA, with social presence as the dependent variable and the experimental conditions of addressing and adjustment as fixed factors. There was no main effect for the addressing manipulation, $F(1, 258) = 0.09$, $p = .761$, $\eta^2 = 0.00$. There was a main effect for the adjustment manipulation whereby those in the adjustment condition experienced more social presence ($M = 4.79$, $SD = 0.93$) than those in the no adjustment condition ($M = 4.57$, $SD = 0.81$), $F(1, 258) = 4.10$, $p = .044$, $\eta^2 = 0.02$. The interaction between adjustment and addressing was not significant, $F(1, 258) = 0.34$, $p =$

.563, $\eta^2 = 0.00$. Thus, H2a was supported and H1a and H3a were both unsupported; the adjustment manipulation influenced social presence, but the addressing manipulation did not.

Hypotheses 1b, 2b, and 3b predicted that the addressing condition (H1b), adjustment condition (H2b), or both (H3b) would lead to greater PSI compared to the no adjustment or no addressing conditions. These hypotheses were tested using a two-way ANOVA, with PSI as the dependent variable and the experimental conditions of addressing and adjustment as fixed factors. The adjustment condition had a main effect on PSI, whereby those in the adjustment condition ($M = 4.85$, $SD = 1.35$) experienced more PSI than those in the no adjustment condition ($M = 4.11$, $SD = 1.66$), $F(1, 258) = 15.46$, $p < .001$, $\eta^2 = 0.06$. There was no main effect for the addressing condition, $F(1, 258) = 0.34$, $p = .552$, $\eta^2 = 0.00$. The interaction between adjustment and addressing was also not significant, $F(1, 258) = 0.11$, $p = .742$, $\eta^2 = 0.00$. Thus, H2b was supported but H1b and H3b were not supported. The adjustment manipulation influenced PSI, but the addressing manipulation did not.

Hypothesis 4 predicted that participants in the addressing condition would perceive more personalization than those in the no addressing condition, and Research Question 1a asked if any interaction effect would emerge whereby those in the addressing and adjustment condition would perceive more personalization than participants in any other condition. This hypothesis and research question were tested using a two-way ANOVA, with perceived personalization as the dependent variable and the experimental conditions of addressing and adjustment as fixed factors. There was a main effect for the adjustment manipulation, where people in the adjustment condition ($M = 4.51$, $SD = 1.45$) perceived more personalization than those in the no adjustment condition ($M = 3.89$, $SD = 1.66$), $F(1, 258) = 5.42$, $p = .021$, $\eta^2 = 0.02$. Yet, there was no main effect for the addressing condition on perceived personalization, $F(1, 258) = 0.34$, $p = .562$, $\eta^2 =$

0.00. The interaction effect between conditions did not reach significance, $F(1, 258) = 1.96$, $p = .162$, $\eta^2 = 0.01$. Thus, H4 was unsupported and the data revealed no interaction effects (thus answering RQ1a), but it was discovered that the adjustment condition led to higher perceptions of personalization than the no adjustment condition.

Hypothesis 5 predicted that participants in the adjustment condition would perceive more contingency than those in the no adjustment condition, and Research Question 1b asked if any interaction effect would emerge whereby those in the addressing and adjustment condition would perceive more contingency than participants in any other condition. This hypothesis and research question were tested using a two-way ANOVA, with perceived contingency as the dependent variable and the experimental conditions of addressing and adjustment as fixed factors. Condition (i.e., the addressing and adjustment conditions) were entered as fixed factors. There was a main effect for the adjustment manipulation, where people in the adjustment condition ($M = 5.04$, $SD = 1.07$) perceived more contingency than those in the no adjustment condition ($M = 3.84$, $SD = 1.55$), $F(1, 258) = 47.72$, $p < .001$, $\eta^2 = 0.16$. There was no main effect of addressing on perceptions of contingency, $F(1, 258) = 0.00$, $p = .985$, $\eta^2 = 0.00$. There was also no interaction effect, $F(1, 258) = 0.69$, $p = .408$, $\eta^2 = 0.00$. Thus, H5 was supported, and the data revealed no interaction effects (thus answering RQ1b),

Research question 2a asked if perceived personalization mediated the relationship between the addressing condition and social presence. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals ($n = 10{,}000$). The predictor variable for the analysis was the addressing condition. The mediating variable was perceived personalization. The dependent variable was social presence. There was no indirect effect of the

addressing condition on social presence through perceived personalization, $b = 0.01$, 95% C.I. (-.03, .04; Table 6).

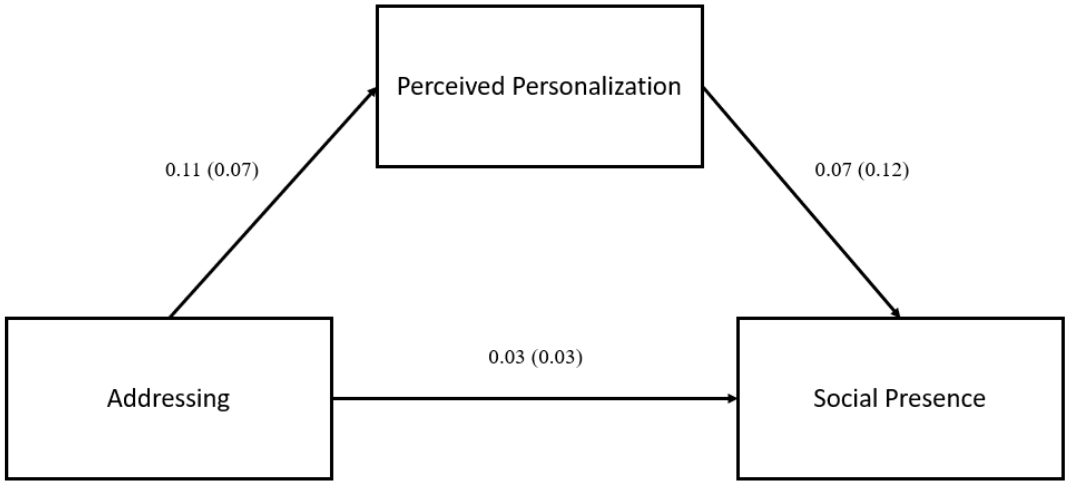
Table 6

Full Mediation Model for Addressing, Perceived Personalization, and Social Presence

		Consequent						
		M (P. Personalization)				*Y* (Social Presence)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Address)	*a*	0.11	0.19	.573	*c'*	0.03	0.11	.814
M (P. Pers.)	--	--	--	--	*b*	0.07	0.04	.063
Constant	I_M	4.14	0.30	< .001	i_y	4.34	0.23	< .001
			$R^2 = .00$				$R^2 = .02$	
		$F(1, 260) = 0.32$, $p = .573$				$F(2, 259) = 2.42$, $p = .091$		

Figure 3

Mediation Model of Addressing, Perceived Personalization, and Social Presence



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Research question 2b asked if perceived personalization mediated the relationship between the addressing condition and PSI. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals ($n = 10{,}000$). The predictor variable for the analysis was the addressing condition. The mediating variable was perceived personalization.

The dependent variable was social presence. There was no indirect effect of the addressing condition on PSI through perceived personalization, $b = 0.08$, 95% C.I. (-.20, .37). There was no indirect effect of addressing on PSI (Table 7).

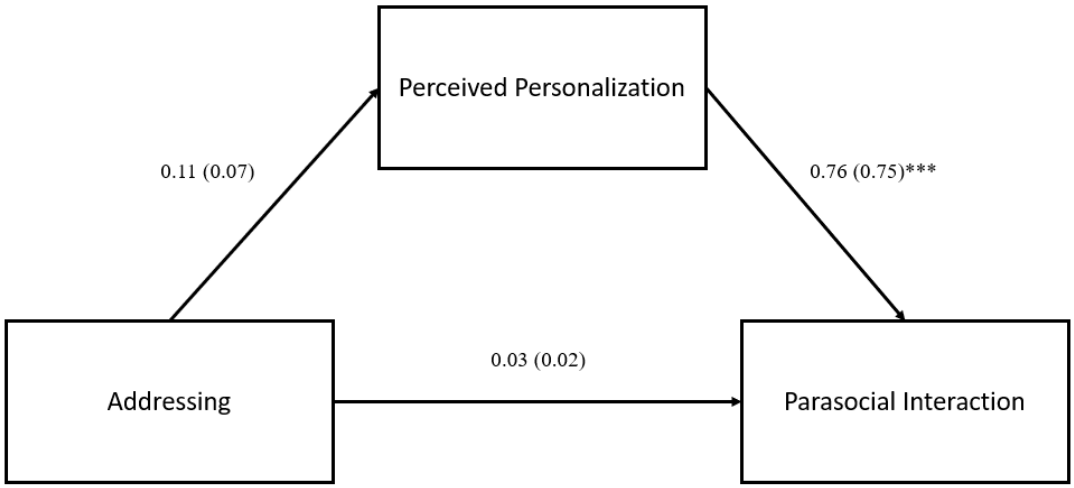
Table 7

Full Mediation Model for Addressing, Perceived Personalization, and PSI

		Consequent						
		M (P. Personalization)				*Y* (PSI)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Address)	*a*	0.11	0.18	.573	*c'*	0.03	0.13	.814
M (P. Pers.)	--	--	--	--	*b*	0.76	0.04	< .001
Constant	I_M	4.14	0.30	< .001	i_y	1.13	0.27	< .001
			$R^2 = .00$				$R^2 = .56$	
		$F(1, 260) = 0.32$, $p = .573$				$F(2, 259) = 110.84$, $p < .001$		

Figure 4

Mediation Model of Addressing, Perceived Personalization, and PSI



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Research question 3a asked if perceived contingency mediated the relationship between the adjustment condition and social presence. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals ($n = 10000$). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived contingency. The dependent variable was social presence. There was no indirect effect of the adjustment condition

on social presence as mediated by perceived contingency, $b = 0.00$, 95% C.I. (-.10, .09). There was no indirect effect of adjustment on social presence (Table 8).

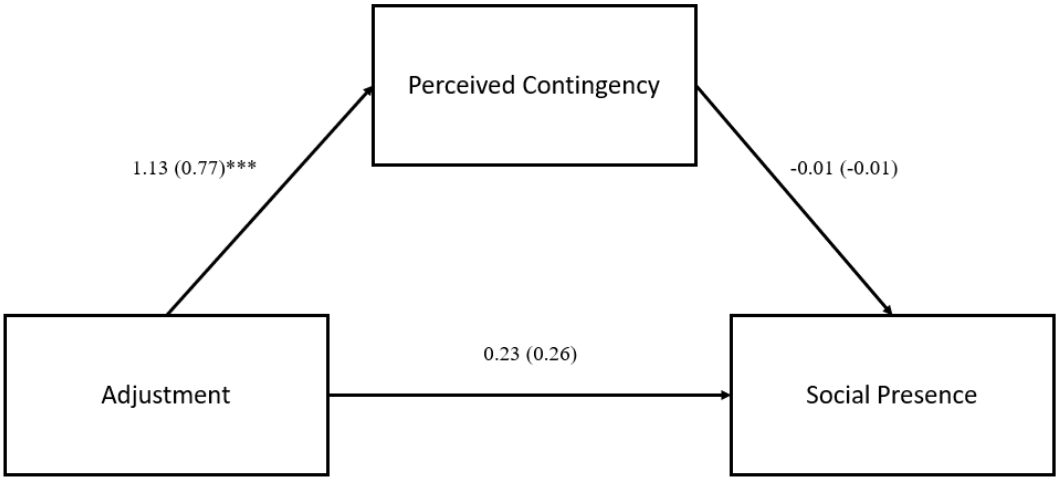
Table 8

Full Mediation Model for Adjustment, Perceived Contingency, and Social Presence

		Consequent						
		M (P. Contingency)				*Y* (Social Presence)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	1.13	0.16	< .001	*c'*	0.23	0.12	.054
M (P. Cont.)	--	--	--	--	*b*	-0.01	0.04	.843
Constant	I_M	2.78	0.26	< .001	i_y	4.37	0.21	< .001
			$R^2 = .16$				$R^2 = .02$	
		$F(1, 260) = 47.80$, $p < .001$				$F(2, 259) = 2.06$, $p = .13$		

Figure 5

Mediation Model of Adjustment, Perceived Contingency, and Social Presence



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Research question 3b asked if perceived contingency mediated the relationship between the adjustment condition and PSI. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals ($n = 10000$). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived contingency. The dependent variable was PSI. There was an indirect effect of the adjustment condition on PSI mediated by perceived contingency, $b = 0.89$, 95% C.I. (0.62, 1.17; Table 9).

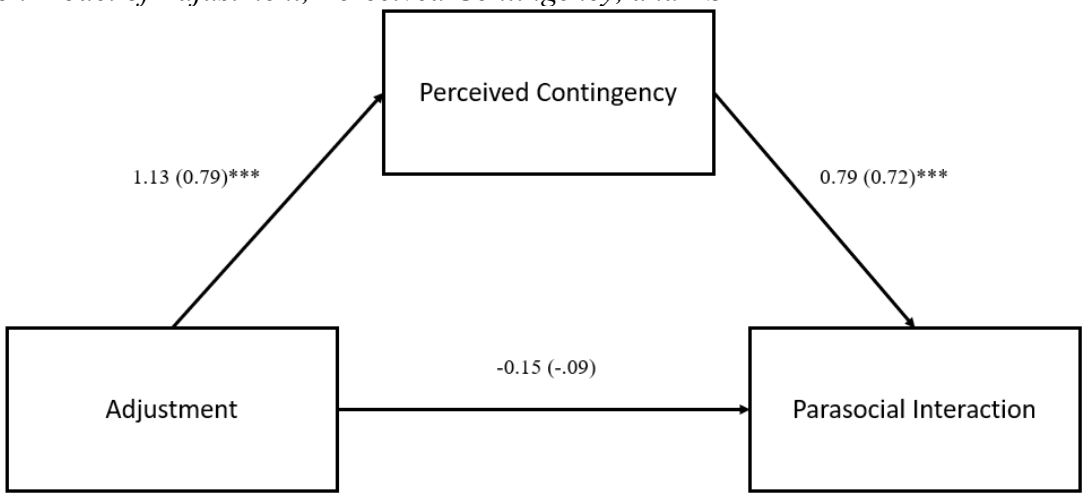
Table 9

Full Mediation Model for Adjustment, Perceived Contingency, and PSI

		Consequent						
		M (P. Contingency)				*Y* (PSI)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	1.13	.16	< .001	*c'*	-0.15	0.15	.314
M (P. Cont.)	--	--	--	--	*b*	0.79	0.05	< .001
Constant	I_M	2.78	0.26	< .001	i_y	1.19	0.26	< .001
			R^2 = .16				R^2 = .50	
		$F(1, 260) = 47.80$, $p < .001$				$F(2, 259) = 129.27$, $p < .001$		

Figure 6

Mediation Model of Adjustment, Perceived Contingency, and PSI



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Hypothesis 6 predicted that social presence and PSI would be positively correlated, which was tested using a bivariate correlation. The results were not significant, $r(260) = .10$, $p = .126$. Thus, H6 was not supported.

Hypothesis 7a and 7b predicted that social presence (H7a) and PSI (H7b) would predict greater liking of Ashe. These hypotheses were tested using a multiple regression with PSI and social presence as predictors and liking as the dependent variable. Overall, the results of this test were significant, $R^2 = .42$, $F(2, 259) = 94.13$, $p < .001$. Social presence was a significant

predictor of liking of Ashe, $b = 0.77$, $t(259) = 13.60$, $p < .001$. PSI did not predict liking of Ashe, $b = 0.02$, $t(259) = 0.55$, $p = .585$. Thus, H7a was supported, but H7b was not.

Given the conceptual similarity between social presence and PSI, there was concern that including both in the same model may result in multicollinearity. As a post hoc test, multicollinearity diagnostics were run. The results showed a collinearity tolerance of 1.00 between the predictors PSI and social presence. This indicates high collinearity tolerance (Allison, 1999), meaning that multicollinearity is not a concern.

Hypothesis 8 and Hypothesis 9 predicted that the presence of addressing (H8a), adjustment, (H8b), or an interaction of the two (H9) would elicit greater liking of Ashe. These hypotheses were tested using a two-way ANOVA, with liking of Ashe as the dependent variable and the experimental conditions of addressing and adjustment as fixed factors. There was no main effect for the addressing manipulation, $F(1, 258) = .02$, $p = .880$, $\eta^2 = 0.00$. There was also no main effect for the adjustment manipulation, $F(1, 258) = .38$, $p = .538$, $\eta^2 = 0.0$. Similarly, there was no interaction effect, $F(1, 258) = 0.01$, $p = .931$. $\eta^2 = 0.00$. Thus, H8 and H9 were unsupported.

Research question 4 asked if perceived personalization mediated the relationship between the addressing condition and liking. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals ($n = 10{,}000$). The predictor variable for the analysis was the addressing condition. The mediating variable was perceived personalization. The dependent variable was liking. There was no indirect effect of the adjustment condition on liking through perceived contingency, $b = 0.01$, 95% C.I. (-0.02, 0.05; Table 10).

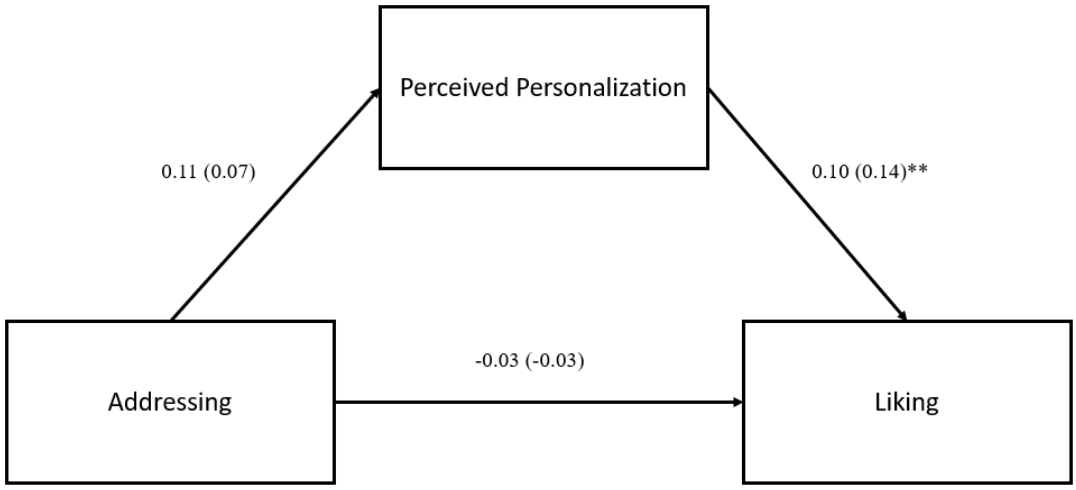
Table 10

Full Mediation Model for Addressing, Perceived Personalization, and Liking

		Consequent						
		M (P. Personalization)				*Y* (Liking)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Address)	*a*	0.11	0.19	.573	*c'*	-0.03	0.13	.814
M (P. Pers.)	--	--	--	--	*b*	0.10	0.04	.020
Constant	I_M	4.14	0.30	< .001	i_y	4.43	0.27	< .001
			R^2 = .00				R^2 = .00	
		$F(1, 260) = 0.32$, $p = .573$				$F(2, 259) = 0.12$, $p = .886$		

Figure 7

Mediation Model of Addressing, Perceived Personalization, and Liking



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Research question 5 asked if perceived contingency mediated the relationship between the adjustment condition and liking. This research question was tested with PROCESS model 4 with bias-corrected 95% confidence intervals (n = 10000). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived contingency. The dependent variable was liking. There was no indirect effect of the adjustment condition on liking through perceived contingency, b = 0.03, 95% C.I. (-0.09, 0.15; Table 11).

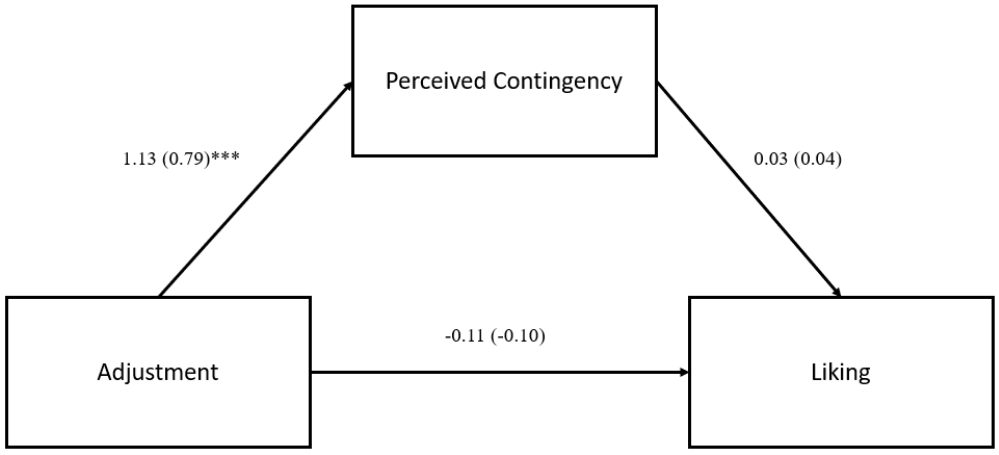
Table 11

Full Mediation Model for Adjustment, Perceived Contingency, and Liking

		Consequent						
		M (P. Contingency)				*Y* (Liking)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	1.13	0.16	< .001	*c'*	-0.11	0.14	.432
M (P. Cont.)	--	--	--	--	*b*	0.03	0.05	.582
Constant	I_M	2.78	0.26	< .001	i_y	4.87	0.25	< .001
			R^2 = .16				R^2 = .00	
		$F(1, 260) = 47.80$, $p < .001$				$F(2, 259) = 0.34$, $p = .710$		

Figure 8

Mediation Model of Adjustment, Perceived Contingency, and Liking



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Hypothesis 10 predicted that greater social presence (H10a), PSI (H10b), and liking (H10c) would predict lower prejudicial attitudes towards transgender women. Research question 6 asked if social presence (RQ6a) or PSI (RQ6b) would predict lower prejudicial attitudes towards transgender women when controlling for liking. To test this hypothesis and answer the research question, a hierarchical regression was run with prejudicial attitudes towards transgender women as the dependent variable. For the first block, social presence and PSI were entered as predictors of prejudice. This model was significant, $R^2 = .21$, $F(2, 259) = 35.23$, $p <$

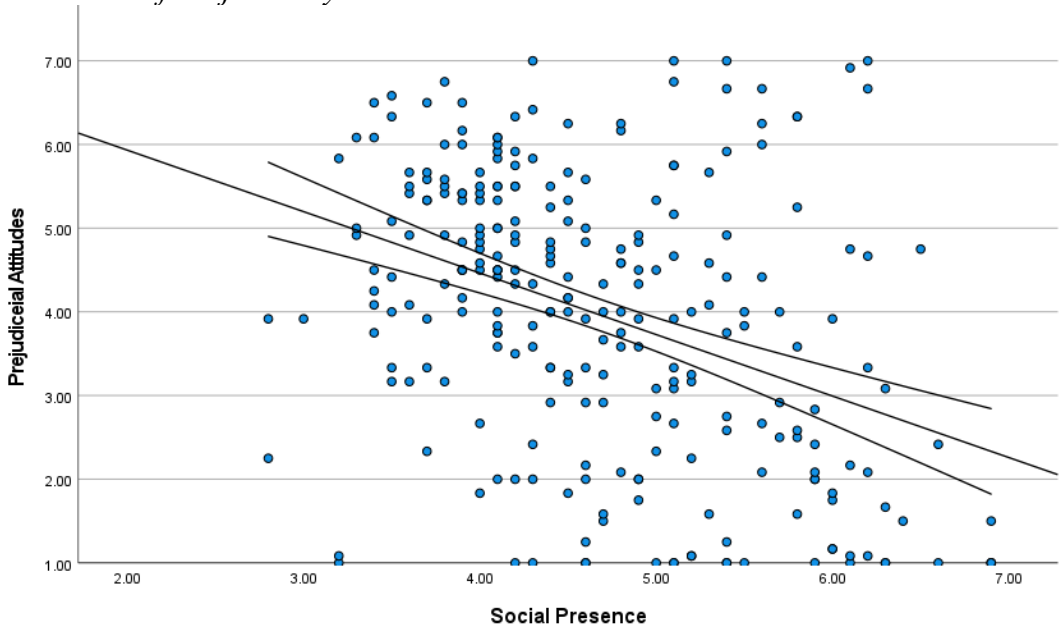
.001. PSI *positively* predicted prejudice, $b = .27$, $t(259) = 4.58$, $p < .001$ whereas social presence predicted lower prejudice, $b = -.78$, $t(259) = -7.44$, $p < .001$.

For the second block, liking was added in as a predictor alongside PSI and social presence. The addition did not lead to a significant change in the model, $\Delta R^2 = 0.00$, $F(3, 258) = 1.06$, $p = .304$. PSI again positively predicted prejudice in this model, $b = 0.24$, $t(258) = 3.67$, $p < .001$. Social presence again negatively predicted prejudice, $b = -.31$, $t(258) = -2.67$, $p < .001$. Liking of Ashe did not predict prejudice, $b = -.12$, $t(258) = -1.03$, $p < .304$. Thus, H10b and was supported, but H10a and H10c were not supported by the hierarchical regression. Similarly, the analysis indicates that social presence predicted lower prejudice towards transgender women even when accounting for liking.

Social presence and liking correlated strongly (Table 3), and there were concerns that entering social presence, PSI, and liking into the same model would be invalid due to multicollinearity. As a post-hoc test, the three variables entered into the hierarchical regression were assessed for multicollinearity to ensure entering all three as predictors was acceptable. Liking had a collinearity tolerance of .58 with social presence and PSI. It also had a condition index of 13.36, below both the cutoff of 15, indicating worrying covariance, and 30, indicating unacceptable covariance (IBM, n.d.). Thus, although liking and social presence covary to an extent, they did not result in a problematic multicollinearity when entered into the model as predictors together (Allison, 1999).

Figure 9

Scatter Plot of Prejudice by Social Presence



As a follow-up analysis, a hierarchical regression was run with discriminatory behavioral intent as the dependent variable. For the first block, social presence and PSI were entered as predictors of discriminatory behavioral intent. This model was significant, $R^2 = .35$, $F(2, 259) = 69.93$, $p < .001$. PSI *positively* predicted discriminatory behavioral intent, $b = .25$, $t(259) = 5.75$, $p < .001$. Social presence predicted lower discriminatory behavioral intent, $b = -.81$, $t(259) = -10.83$, $p < .001$.

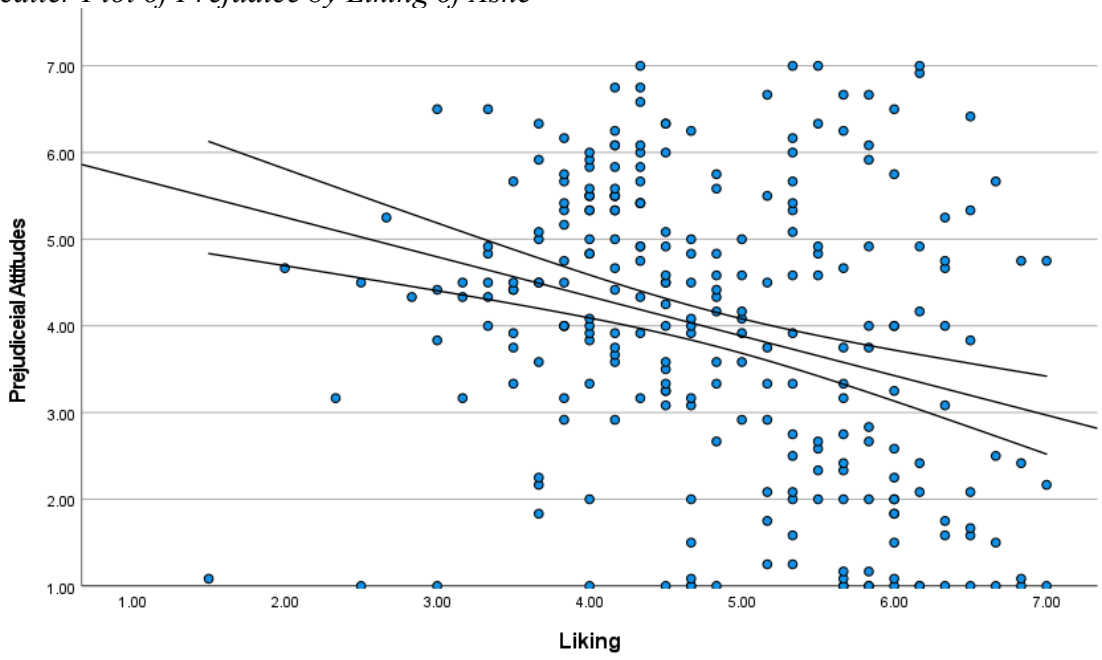
For the second and final block, liking was added in as a predictor alongside PSI and social presence. The addition led to a significant change in the model, $\Delta R^2 = .06$, $F(3, 258) = 26.42$, $p < .001$. PSI again positively predicted discriminatory behavioral intent in this model, $b = 0.25$, $t(258) = 6.20$, $p < .001$. Social presence again negatively predicted discriminatory behavioral intent, $b = -.50$, $t(258) = -5.36$, $p < .001$. Liking of Ashe negatively predicted discriminatory behavioral intent, $b = -.40$, $t(258) = -5.14$, $p < .001$. Thus, H10b and H10c were supported, but H10a was not supported by the hierarchical regression. Similarly, the analysis of

RQ6 indicates that social presence predicted lower prejudice towards transgender women even when accounting for liking.

Social presence and liking correlated strongly (Table 3), and the CFA revealed potential covariance concerns. As a post-hoc test, the three variables entered into the hierarchical regression were assessed for multicollinearity to ensure entering all three as predictors was acceptable. Liking had a collinearity tolerance of .58 with social presence and PSI and a condition index of 13.36. Thus, although liking and social presence correlate strongly, they did not result in a problematic multicollinearity when entered into the model as predictors together (Allison, 1999).

Figure 10

Scatter Plot of Prejudice by Liking of Ashe



Exploratory Analyses

Adjustment, Perceived Personalization, and Outcomes

It was found that the adjustment condition led to increased perceptions of personalization. An exploratory mediation analysis was run to see if perceived personalization mediated the relationship between the adjustment condition and social presence. This was tested with PROCESS model 4 with bias-corrected 95% confidence intervals (n = 10,000). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived personalization. The dependent variable was social presence. There was no indirect effect of the adjustment condition on social presence through perceived personalization, b = .03, 95% C.I. (0.00, 0.07). Overall, there was no indirect effect of the adjustment condition on social presence (Table 12).

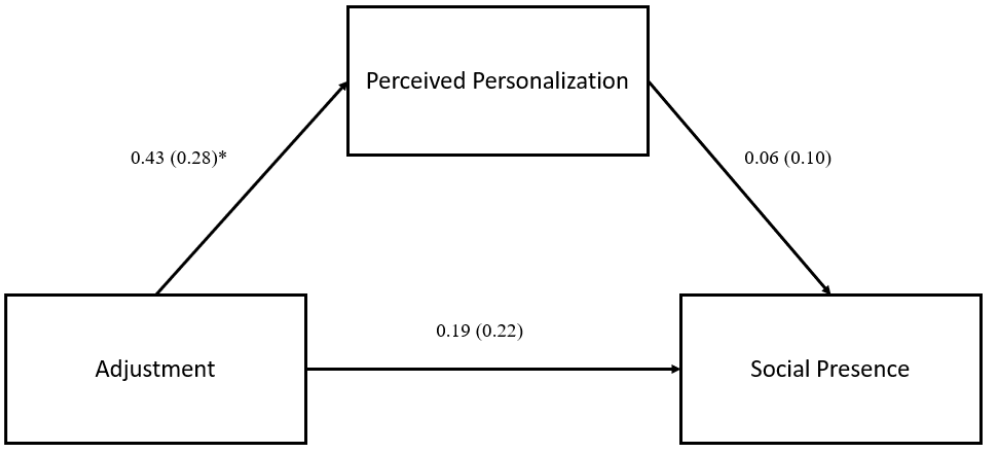
Table 12

Full Mediation Model for Adjustment, Perceived Personalization, and Social Presence

		Consequent						
		M (P. Personalization)				*Y* (Social Presence)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	0.42	0.19	.022	*c′*	0.20	0.11	.076
M (P. Pers.)	--	--	--	--	*b*	0.06	0.04	.107
Constant	I_M	3.65	0.29	< .001	i_y	4.13	0.22	< .001
			R^2 = .02				R^2 = .03	
		$F(1, 260) = 5.32$, p = .022				$F(2, 259) = 3.36$, p = .04		

Figure 11

Mediation Model of Adjustment, Perceived Personalization, and Social Presence



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Another exploratory mediation analysis was run to see if perceived personalization mediated the relationship between the adjustment condition and PSI. This was tested with PROCESS model 4 with bias-corrected 95% confidence intervals (n = 10,000). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived personalization. The dependent variable was PSI. There was an indirect effect of the adjustment condition on social presence through perceived personalization, b = 0.32, 95% C.I. (0.05, 0.60). Overall, there was a mediation effect of perceived personalization on the effect of adjustment on PSI (Table 13).

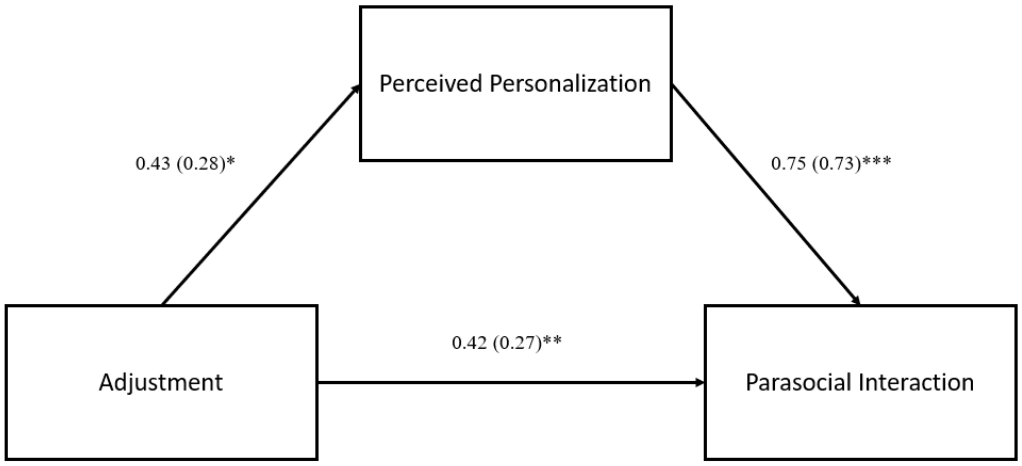
Table 13

Full Mediation Model for Adjustment, Perceived Personalization, and PSI

		Consequent						
		M (P. Personalization)				*Y* (PSI)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X(Adjustment)	*a*	0.42	0.19	.022	*c′*	0.42	0.13	.001
M (P. Pers.)	--	--	--	--	*b*	0.75	0.04	< .001
Constant	I_M	3.65	0.29	< .001	i_y	0.63	0.25	.012
			R^2 = .02				R^2 = .02	
		$F(1, 260) = 5.32$, $p = .022$				$F(1, 259) = 174.86$, $p < .001$		

Figure 12

Mediation Model of Adjustment, Perceived Personalization, and PSI



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

A third exploratory mediation analysis was run to see if perceived personalization mediated the relationship between the adjustment condition and liking. This was tested with PROCESS model 4 with bias-corrected 95% confidence intervals (n = 10000). The predictor variable for the analysis was the adjustment condition. The mediating variable was perceived personalization. The dependent variable was liking. There was an indirect effect of the adjustment condition on liking through perceived personalization, b = 0.04, 95% C.I. (0.00, 0.09; Table 14).

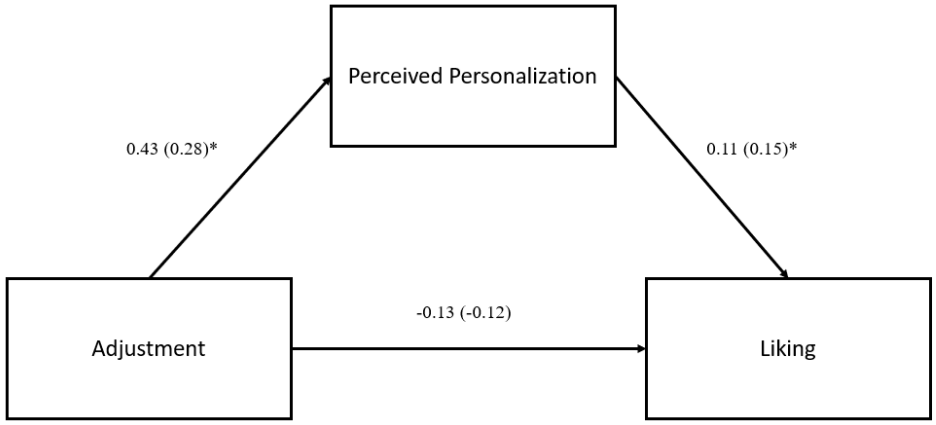
Table 14

Full Mediation Model for Adjustment, Perceived Personalization, and Liking

		Consequent						
		M (P. Personalization)				*Y* (Liking)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	0.42	0.19	.022	*c′*	-0.13	0.13	.334
M (P. Pers.)	--	--	--	--	*b*	0.11	0.04	.015
Constant	I_M	3.65	0.29	< .001	i_y	4.55	0.26	< .001
			R^2 = .43				R^2 = .02	
		$F(1, 260) = 197.26$, $p < .001$				$F(1, 259) = 3.20$, $p = .042$		

Figure 13

Mediation Model of Adjustment, Perceived Personalization, and Liking



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Because the adjustment condition led to more social presence and social presence predicted liking of Ashe, an exploratory mediation analysis was run to see if adjustment had an indirect effect on liking of Ashe. This was tested with PROCESS model 4 with bias-corrected 95% confidence intervals (n = 10000). The predictor variable for the analysis was the adjustment condition. The mediating variable was social presence. The dependent variable was liking. There was an indirect effect of the adjustment condition on liking through social presence, $b = 0.17$, 95% C.I. (0.01, 0.32; Table 15).

Some scholars have noted that PSIs with unliked characters can result in resistance to later persuasive messaging (Tukachinsky & Sangalang, 2016). To test this idea, an exploratory moderation analysis was run with PSI as the independent variable, liking of Ashe as the moderator, and prejudicial attitudes towards transgender women as the dependent variable using PROCESS model 1 with bias-corrected 95% confidence intervals (n = 10000). Results showed that for those who low liking, PSI predicted higher prejudice, $b = .47$, $t(258) = 5.22$, $p < .001$.

For those with average liking, PSI again predicted higher prejudice, $b = .33$, $t(258) = 5.05$, $p < .001$. For those with high liking, PSI did not predict prejudice, $b = .10$, $t(258) = 1.28$, $p = .258$.

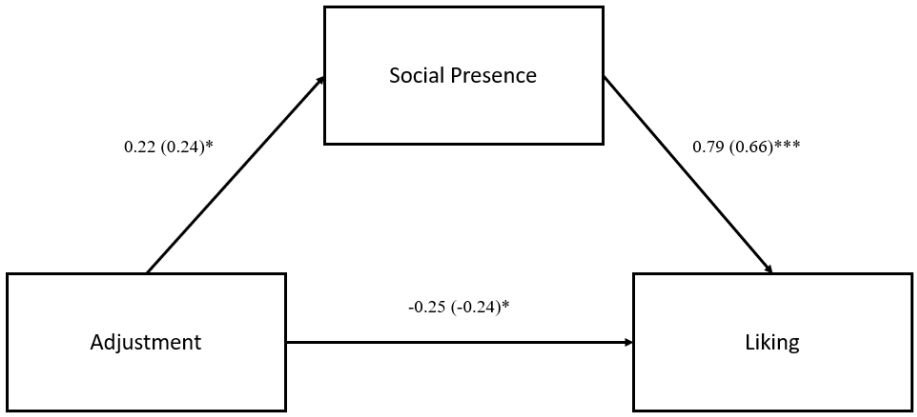
Table 15

Full Mediation Model for Adjustment, Social Presence, and Liking

		Consequent						
		M (Social Presence)				*Y* (Liking)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Adjustment)	*a*	0.22	0.11	.044	*c′*	-.26	0.10	.011
M (S. Presence)	--	--	--	--	*b*	0.79	0.06	< .001
Constant	I_M	4.35	0.17	< .001	i_y	1.50	0.29	< .001
			$R^2 = .02$				$R^2 = .43$	
		$F(1, 260) = 4.09$, $p = .044$				$F(1, 259) = 99.57$, $p < .001$		

Figure 14

Mediation Model of Adjustment, Social Presence, and Liking



Note. Standardized coefficients are in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

This study had a large gender skew, with most participants being men. Because gender is an important element of this study, some exploratory analyses were conducted to see if women and men engaged with Ashe differently. First, independent samples t-tests were conducted to see if women and men experienced different levels of social presence or PSI with Ashe. The first revealed that women ($M = 4.87$, $SD = 0.90$) and men ($M = 4.62$, $SD = 0.87$) did not significantly differ in levels of social presence experienced, $t(260) = -1.91$, $p = .058$. The second revealed that

women (M = 4.22, SD = 1.7) and men (M = 4.56, SD = 1.50) did not significantly differ in levels of PSI experienced, $t(260) = 1.52$, $p = .130$.

Next, an independent samples t-test was conducted to see if women and men liked Ashe differently. The results showed that women (M = 5.09, SD = 1.04) liked Ashe more than men (M = 4.74, SD = 1.05), $t(260) = -2.30$, $p = .022$. Finally, an independent samples t-test was conducted to see if women and men differed in self-reported prejudicial attitudes towards transgender women. This test revealed that women (M = 3.59, SD = 2.00) self-reported significantly lower prejudicial attitudes than men (M = 4.08, SD = 1.56; $t(260) = 2.00$, $p = .047$).

Chapter 11: Discussion

This study aimed to examine how manipulating affordances would influence audience experience with media that featured an outgroup character. Intergroup contact theory has led to robust studies that show contact with outgroup members reduces prejudice towards those outgroups (Pettigrew & Tropp, 2006). The parasocial contact hypothesis builds off this theorizing by predicting that media characters can serve as contact points in lieu of real outgroup members (Schiappa et al., 2005). Research on intergroup contact argues that the more contact with an outgroup member resembles face-to-face social interaction, the more effective that contact would be at reducing prejudice (Harwood, 2010). In line with this, this dissertation predicted that by increasing contingency and personalization of a media stimulus (manipulated through adjustment and addressing respectively), audiences would feel more social presence and parasocial interaction with an outgroup media character. In turn, this higher level of engagement would lead audiences to like the media character more. Because liking outgroup members is one mechanism through which prejudice towards outgroups can be reduced (Pettigrew, 1998), liking a transgender media character was predicted to lead to lower prejudice.

Results were mixed. The manipulation of personalization via addressing, where the media character faced the camera (and thus the audience) directly, was ineffective at eliciting any of the predicted outcomes. The contingency manipulation via adjustment, where audiences had the opportunity to send messages that changed their media experiences, was more effective. The adjustment manipulation led to more PSI and social presence. In turn, social presence predicted both liking of the outgroup media character and more positive attitudes towards transgender individuals. This provides a demonstration of how the affordance of contingency can

potentially indirectly improve attitudes towards outgroups through the mechanisms outlined by intergroup contact theory (Pettigrew, 1998; Pettigrew, 2021).

Overview of Results

Addressing and Adjustment

In more detail, the manipulation of addressing was ineffective at causing participants to perceive more personalization, experience PSI, or experience social presence. This was also true in the pretest. In an ideal scenario, the stimuli would have been redone to bolster the manipulation of addressing, but that was not possible given budgetary and time constraints. It is possible that that with a stronger manipulation, participants would notice personalization and experience social presence and PSI as hypothesized. For example, in the video game *Fallout 4*, one of the main characters has been programmed to learn and address the player by their first name (Sykes, 2018). That would be a much stronger manipulation of addressing (particularly verbal addressing), which may have elicited the desired results. Unfortunately, such a robust manipulation was not possible given the constraints of this study. One way to make the distinction between addressing conditions stronger that would not have increased costs would have been to make Ashe turn away more in the no addressing condition. In the current no addressing stimuli, Ashe faces away at ~ 60 degree angle. If Ashe was fully perpendicular to the camera, this may have made the lack of addressing more noticeable and differentiated the conditions more, although it would not improve perceived personalization in the addressing condition.

Other work that manipulated addressing found that addressing elicited stronger PSIs (Hartmann & Goldhoorn 2011), as has work that has more broadly studied breaking the fourth wall (Auter, 1992). Thus, in some cases addressing can effectively elicit PSIs and potentially

perceived personalization or social presence. It is worth considering how the stimuli from those studies differed from the one used here. For example, this study featured an animated character, whereas Hartmann and Goldhoorn (2011) used a live action performer. Tsay-Vogel and Schwartz (2014) theorized that animated characters would be viewed as less authentic, thus inhibiting the experience of PSI compared to live-action performers. Tangentially related, a lack of authenticity may make audiences perceive characters as less typical, which would hamper the ability for contact – parasocial or otherwise – to influence intergroup attitudes. (Hewstone & Brown, 1984). Does animation versus live action also influence how audiences perceive addressing? It is worth exploring.

It is also possible that the nature of the stimuli inhibited the addressing manipulation from eliciting perceptions of personalization. At times during our stimulus, there would be segments that did not feature Ashe's body onscreen, which may have diluted the addressing manipulation enough to be ineffective. Many media that break the fourth wall, such as documentaries, similarly will cut away from media personae from time to time. In this way, the stimuli here may better mimic real media. Yet, this contrasts with other work that directly manipulated addressing, where the media persona was on camera the entire time (e.g., Hartmann & Goldhoorn, 2011). Their stimuli more closely mimicked social interactions, which are defined in part by maintained mutual attention (Goffman, 1963). It would be interesting to explore how much a media persona needs to be present and onscreen for an audience member to feel addressed.

The manipulation of adjustment was seemingly successful. Participants in the adjustment conditions perceived more contingency and personalization. Additionally, participants in the adjustment condition experienced more PSI. Adjustment did not directly cause social presence overall, although it did trend in that direction. Instead, adjustment indirectly influenced social

presence through perceived personalization. Overall, these results are encouraging, and suggest that media that afford contingency may replicate face-to-face social interaction better than media that do not afford contingency (Harwood, 2010).

The media stimuli used in this study were a relatively weak manipulation. Both videos together only totaled around three minutes of content, and they featured an animated protagonist without smooth transitions between animation frames. Additionally, the adjustment manipulation only allowed participants to select from one of three response choices, which does not mirror real interpersonal conversations. Given that Harwood (2010) claims that intergroup contact is more effective the closer it resembles face-to-face social interaction, this could be seen as a factor that limits the intervention's effectiveness. Despite these potential constraints, the stimulus that featured adjustment was still mostly successful at eliciting the desired states of PSI, social presence, and liking.

It is also possible to view the lower fidelity and lower richness as strengths of this study, particularly given the significant effects observed. For example, this study demonstrates that even more rudimentary media can elicit desired effects such as PSI. This has practical implications for those interested in designing persuasive interventions because it demonstrates that high-budget media may not be necessary to reap desired effects such as prejudice reduction. This opens more opportunities for prejudice-reducing interventions, as it demonstrates that high-budget productions are not the only ones that can be effective. The lower production value media used in this study allowed for full control over the script and visuals, which would be prohibitively expensive with full animation or longer stimuli. This control is a major advantage of this study compared to true face-to-face social interactions or other types of indirect contact, such as imagined contact, where researchers do not have the same level of control.

Given the limited nature of the adjustment stimuli used in this study, it is exciting to consider how contingency can influence users in more robust media. For example, modern video games now feature lifelike, computer-controlled characters that players can converse with in seemingly social interactions to the extent it can be argued that such media demonstrate robust contingency (Rafaelli, 1998). In addition, video games are much longer than the stimuli used in this study, with players potentially engaging with a media character multiple times over many hours. This may improve interventions: both intergroup contact theory (Pettigrew, 1998) and the parasocial contact hypothesis (Schiappa et al., 2005) laud the benefits of repeated, sustained contact. If the adjustment media stimuli used in this study could induce perceptions of contingency, personalization, PSI, and indirectly induce social presence, it is likely that more realistic and longform media would have more pronounced effects. Although adjustment did not directly elicit social presence, it is possible that it would in higher production value media, given the trends observed here.

Another finding was that the experimental conditions of addressing and adjustment did not elicit different levels of liking Ashe. This makes sense for addressing, as that manipulation seemingly failed in general, but the adjustment manipulation was more powerful and influenced other variables. There are a few explanations for why this manipulation did not work. For example, it is possible to have contingent social encounters with individuals one finds unpleasant. In these cases, even if adjustment was present, it is unlikely to lead to positive attitudes towards an individual. Another explanation is that the media stimuli were too short for the manipulations to directly influence liking. Perhaps with longer stimuli, the affordances would be more observable and elicit more consistent liking. A third explanation is that the affordances do not directly influence liking of a character at all, and instead observed effects would be

indirect. An exploratory analysis supports this notion, showing that adjustment has an indirect effect on liking of Ashe through social presence. This exploratory analysis is not sufficient to reach conclusions with confidence; more work should examine how social presence may mediate the relationship between affordances in media and liking characters.

Perceived Affordances

One of the manipulations, namely the adjustment manipulation, successfully elicited perceptions of contingency and personalization. Perceived personalization and perceived contingency both correlated strongly with PSI, and perceived contingency mediated the relationship between the adjustment condition and PSI. This is not surprising in retrospect because of their conceptual similarity of perceived contingency and perceived personalization and the scale used for PSI. The CFA revealed multicollinearity concerns between those three measures, and although previous work (Dibble et al., 2016) espoused the value of the PSI scale created by Hartmann & Goldhoorn (2011), there is some overlap with their PSI scale and other concepts like perceived affordances. For example, one of the PSI items is "I had the feeling that Ashe reacted to what I said or did" (Hartmann & Goldhoorn, 2011). This is essentially contingency (Sundar et al., 2016). As such, it is difficult to draw any conclusions with confidence regarding how perceived affordances relate to PSI.

In terms of social presence, it was interesting to see that participants in the adjustment condition perceived more personalization than in the no adjustment condition. The goal of the adjustment condition was to elicit perceptions of perceived contingency more so than perceived personalization. The adjustment condition did succeed at eliciting perceived contingency, but elicited perceptions of personalization as well. This may be because adjustment requires some elements of personalization. According to Rafaelli (1998), third-order dependency (which is

essentially adjustment) requires interactants to send messages back and forth while contextualizing communication based on previous messages within a social encounter. For this to occur, interactants need to be able to target each other with messages. In other words, contingent media may need to also afford some personalization. This is in line with how affordances are discussed more broadly, as some affordances relate to or are embedded within other affordances (e.g., synchronicity relating to interactivity; Kiousis, 2002). In this case, it appears that perceptions of contingency may be contextually dependent on at least some perceptions of personalization as well, which may be worth exploring further.

This is not the first study to consider contingency and personalization in conjunction. Some studies have examined how interactivity and personalization elicit different outcomes such as political discourse (e.g., Kruikemeier et al., 2013) and purchasing behavior (e.g., Blasco-Arcas et al., 2014). Yet, these studies do not deeply consider how inherent affordances can bring about perceptions of another affordance (e.g., contingent media eliciting perceptions of personalization), nor how interactivity and personalization relate to each other. In fairness, most of the findings relating to adjustment and perceived personalization in this dissertation only emerged in exploratory analyses. Yet, these findings highlight the need to better understand the interconnectedness of affordances. If scholars have broad interest in understanding how affordances elicit different outcomes, a precursor step is to learn how different affordances relate to each other. By better mapping how affordances interconnect it may be easier to understand how some affordances or combinations of affordances can change audience perceptions and produce outcomes of interest, be those improved intergroup relations (Harwood, 2010) or successful business practices (Blasco-Arcas et al., 2014).

In terms of connecting perceived affordances to the outcomes of interest, few mediation analyses with social presence and liking worked. Perceived personalization mediated the relationship between the adjustment condition and liking, but neither perceived affordance mediated the relationship between the adjustment condition and social presence. It makes sense that people would like media that they perceive to be tailored to them, and indeed this is one reason why personalization and synthetic personalization are of interest to communication scholars and marketers (Fairclough, 1987). The null findings are also interesting, in that they indicate that audiences need not notice an affordance in media for it to influence them, somewhat contrasting with the findings of other affordance scholars (e.g., Wu, 2005).

PSI

As predicted, PSI and social presence were positively associated. Despite this, the relationship between these concepts was relatively weak. This was surprising given their conceptual similarity. It was also observed that PSI and social presence led to different outcomes for participants. For example, PSI did not predict liking of Ashe, but social presence did. More surprisingly, PSI predicted *higher* prejudicial attitudes towards transgender women.

The surprising findings regarding PSI and prejudice have some potential explanations. For one, experiencing an interaction does not mean that interaction is inherently positive. Indeed, the contact hypothesis originally argued for the optimal contact conditions to ensure intergroup contact happened in a constructive and pleasant context (Allport, 1954; Pettigrew, 2021). Unpleasant intergroup contact does not reduce prejudice, and can in fact reinforce prejudicial attitudes (e.g., Vanman et al., 1999). Thus, if audiences did not enjoy the parasocial interaction or found the parasocial interaction unpleasant, it should not facilitate liking or prejudice reduction. Research demonstrates that audiences can experience PSIs with characters they dislike

or feel neutrally towards (Tian & Hoffner, 2010), although such PSIs are understudied (Hoffner & Bond, 2022). One study found that PSIs with liked or neutral characters resulted in an effort to emulate said character, although PSIs with disliked characters did not (Tian & Hoffner, 2010). This study presented here found similar, but less encouraging, results. The differences in findings between this study and the study by Tian and Hoffner (2010) may be because their study asked audiences to report about characters they already had established attitudes about and had been exposed to for some time. In contrast, this study exposed participants to a completely new character for only around three minutes total.

Additionally, PSI did not relate to liking of Ashe, further indicating that the perception of interaction was not inherently pleasant. Indeed, work on PSIs has found that audiences can have PSIs with disliked characters (Dibble & Rosaen, 2011). These negative PSIs can facilitate deleterious outcomes such as adopting harmful attitudes or beliefs (Hoffner & Bond, 2022). Other work has found that interactive media, which may better elicit PSIs, did not lead to stronger affective ties with media characters compared to uninteractive media (Tukachinsky et al., 2020). This mirrors the results of this study, where media with contingency elicited more PSIs, but did not elicit more liking of Ashe. Future work should consider how to ensure PSIs are pleasant and should use longer media stimuli if possible. This would give audiences more time to get to know outgroup media personae and hopefully come to like them through experiencing parasocial interaction.

When interventions like the one used here fail, existing prejudices can be reinforced (i.e., a boomerang effect; Byrne & Hart, 2009). This could explain why PSI positively predicted prejudice. After participants experienced a PSI with a character they later came to dislike, their prejudicial attitudes were strengthened as they discarded any positive affect they had toward

Ashe. Even if audiences did not dislike Ashe, neutral evaluations may be similarly counterproductive: PSIs have been found to increase resistance to persuasive messages in the absence of strong positive affect (Tukachinsky & Sangalang, 2016). Ashe's appeal to audiences asking them to discard prejudices towards transgender people may have been similarly resisted among participants who felt neutrally towards her. Any of these reasons could explain why PSIs predicted more prejudice. Regardless, it is important to keep in mind that failed interventions are not deleterious just because they fail to reduce prejudice.

The ability to form positive PSIs may have also been hampered by the sample selection and study procedure. Although many participants reported experiencing PSIs with Ashe, not all did. Mturk users often rely on the platform as a source of income (Fleischer et al., 2015), and as such can be implicitly encouraged to move through studies as efficiently as possible to maximize pay per hour. If participants were trying to get through the study as quickly as possible and were viewing the opportunity to watch the stimulus as a business transaction, that may have hampered the ability to engage with Ashe parasocially. It could cause audiences to be less invested in her story and more invested in the earning potential. Additionally, audiences were forced to watch this particular character, which does not mirror most media consumption. In most cases, audiences are free to choose what content they want to enjoy, which increases the likelihood of having experiences like PSIs (Gregg, 2018).

Some may argue that the reason PSIs did not influence outcomes as predicted is because the media exposure, particularly in the addressing condition, was not actually *para*social. Because the character responds to the audience's messages, this could be seen as a true social interaction. Yet, this is not actually the case. According to Goffman (1963), both unfocused and focused social interactions require mutual awareness, meaning interactants are mindful of each

other's presence. Focused social interactions also require mutual attention, whereby interactants are both paying attention to the same conversation. Ashe can feign mutual awareness and mutual attention by seeming to respond to audience messaging via adjustment. If the addressing manipulation were more successful, differences may have emerged across those conditions as well as addressing also gives an illusion of awareness and attention (Fairclough, 1987; Hartmann & Goldhoorn, 2011). Yet, Ashe is an unagentic fictional character she cannot exhibit awareness or mindfulness. Thus, any perceived interactions with Ashe are inherently parasocial because she cannot actually be aware or attentive. This is more similar to a PSI, conceptualized as the illusion of social interaction (Horton and Wohl, 1956) rather than an actual focused social interaction.

Social Presence

The findings regarding social presence are more in line with what was predicted, although it is again surprising that social presence predicted liking and lower prejudice yet PSI did not. Given the conceptual similarity, it was expected that these two experiences would lead to similar outcomes. This difference may have emerged because of the individuating nature of experiencing social presence. Social presence involves making an individual's social characteristics salient to those in social encounters (Biocca, 1997). If an outgroup member's social aspects are salient, this means that their social identity is less likely to be salient. In other words, social presence can help avoid categorization that would activate stereotyping and prejudices (Macrae & Bodenhausen, 2000). This is especially relevant to intergroup contact theory because encouraging a more interpersonal view of an outgroup member would facilitate the decategorization that is necessary for Pettigrew's (1998) affective mechanism. According to intergroup contact theory (Pettigrew, 1998) decategorization is necessary to develop liking for an outgroup member, as it ensures prejudicial attitudes are not immediately applied to outgroup

members. Because social presence makes individual characteristics salient instead of group characteristics, this would encourage decategorization.

Given how social presence connects to liking of Ashe and prejudice reduction, it seems eliciting social presence is a potential way to strengthen intergroup interventions. This naturally begs the question: how can media creators elicit this psychological experience? Research indicates that social presence is more easily elicited when a character is visible (Corritore et al., 2003), gives cues about their personal identity such as biographical information (de Vries, 2006), and gives the audience and persona a shared group identity (Nass & Moon, 2000). Of particular note, Nass and Moon (2000) accomplished this sense of shared identity and social presence with a machine (i.e., not even a character) using a minimal group paradigm, so the shared identity need not be robust. These findings give ideas on traits characters should have to encourage social presence: media that afford visibility like television or video games will likely elicit more social presence compared to lower bandwidth media like radio. Providing personal information (i.e., individuation, which also facilitates decategorization) and giving the audience and character a shared group identity of some kind should also help, although the latter may be harder given that these interventions are supposed to provide *intergroup* contact. These characters should also be designed keeping intergroup theory in mind. They should not reinforce stereotypes about an outgroup (e.g., Macrae & Bodenhausen, 2000) and the media experience should be pleasant (Allport, 1954; Pettigrew, 1998).

There have been previous concerns that social presence is a psychological process that is best elicited through more immersive experiences, such as virtual reality (Cummings & Bailenson, 2016; Oh, Bailenson, & Welch, 2018). This may be why the study presented here, which did not feature immersive media, was not consistently successful at eliciting social

presence via addressing or adjustment. Immersive media can better mimic the characteristics of face-to-face social interactions, such as a higher number of social cues (Walther & Parks, 2002). Given that face-to-face communication is argued to be the best elicitor of social presence (Biocca, Harms & Gregg, 2001), it makes sense that immersive media would lead to higher social presence.

Despite this, few studies have directly compared immersive media and non-immersive media's ability to elicit social presence, and results of these studies are mixed (Oh et al., 2018). For example, Slater and colleagues (2000) found that immersive media stimuli were not more effective at eliciting social presence than a computer program, although they note that the rudimentary avatars in their stimulus may have been a limitation. In contrast, another study found that solving a Rubik's Cube with others in immersive virtual environments and real-life interaction led to higher social presence than the same task done over a computer (Schroeder et al., 2001). Either way, more work is needed to understand how more immersive environments may facilitate social presence, and if less immersive media (e.g., television, video games) can accomplish similar outcomes.

Contributions to Theory

This dissertation makes numerous contributions to theory. Primarily, this work attempts to align the parasocial contact hypothesis (Schiappa et al., 2005; Schiappa et al., 2006) with its parent theory, intergroup contact theory (Pettigrew, 1998). One major contribution is demonstrating how decategorization, a mechanism that drives positive affect towards outgroup members and therefore prejudice reduction, can be replicated in media contexts. Many studies using the parasocial contact hypothesis do not consider whether the media content they present to participants individuates outgroup members or depersonalizes them, making their outgroup

status salient (e.g., Abrams et al., 2018; Breves, 2020; Gries et al., 2015; Hu, Chen, Li, & Yin, 2019; Joyce & Harwood, 2014). This study addresses that gap by instead exposing participants to two different videos. The first was individuating, to help decategorize the transgender media persona, Ashe. According to intergroup contact theory, this should help audiences like her. Next, her outgroup transgender identity was made salient in a second video. It was found that positive affect (i.e., liking) of Ashe after the first video – even before knowing she was transgender – predicted reduced prejudice towards transgender women after the group-salient video. This design can serve as a paradigm for future work examining the parasocial contact hypothesis. An advancement of this framework would be to use multiple media stimuli and consider how those stimuli may individuate or depersonalize outgroup characters.

Another contribution to the parasocial contact hypothesis is highlighting how affordances can change the way audiences engage with content in ways that lead to the prejudice reduction that researchers seek. Media that afforded contingency led to social presence, and indirectly led to liking of an outgroup character via perceived personalization. Social presence and liking, in turn, predicted lower prejudice and lower discriminatory behavioral intent towards transgender people. In their initial paper, Schiappa and colleagues (2005) bound their discussion of parasocial contact to television, in line with some explications that similarly limit PSIs and PSRs to television (e.g., Hartmann & Goldhoorn, 2011; Rubin & McHugh, 1987). This study demonstrates that considering media with affordances that differ from those common to television, such as more contingent media like video games (e.g., Breves, 2020) may elicit different outcomes than studies that only examine television.

A third contribution is clarifying whether PSIs are necessary for parasocial contact to reduce prejudice. This study provides some evidence that they may not be. The goal of

parasocial contact is to make audiences develop positive affect directed at an outgroup media character (e.g., liking, PSRs). Yet, experiencing a PSI is not necessary for these outcomes (Dibble et al., 2016; Schiappa et al., 2005; Tukachinsky & Stever, 2019). Previous work has found that experiencing PSIs correlates with liking and the formation of positive bonds such as PSRs (e.g., Tukachinsky & Stever, 2019), yet that is not what was observed here. In fact, PSIs were not associated with liking at all, and in fact predicted higher prejudice. Perhaps this would be different in a more robust narrative. Either way, this demonstrates that PSIs are not strictly necessary to reap benefits from exposure to intergroup characters. It seems contact is enough: an endorsement for the appropriateness of the name "parasocial *contact* hypothesis."

This study also may help clarify the distinction between how *contact* versus *interaction* influences liking of outgroup members and thus reduces prejudice more broadly. As others have noted, there has been debate over whether intergroup contact is best served by social interaction or if other, weaker types of contact (e.g., proximity) can be equally effective (e.g., Harwood, 2010; MacInnes & Page-Gould, 2015). Harwood (2010) argued that face-to-face social interaction was the gold standard for prejudice reducing interventions, and the closer intergroup contact is to this gold standard, the more effective it will be. Thus, it stands to reason that experiencing an intergroup PSI with a media character should be more effective than mere contact with an outgroup media character.

Yet, this study instead found that experiencing a PSI did not improve the effectiveness of intergroup contact compared to not experiencing a PSI. If PSIs are more similar to face-to-face social interaction than mere parasocial contact, then perhaps more involved intergroup contact is not always the most effective prejudice-reducing intervention. In fact, face-to-face intergroup contact may have the potential to backfire even under favorable conditions, although this needs

more study (Pettigrew, 2008). The findings here instead lend credence to the effectiveness of less involved types of intergroup contact, such as vicarious contact (e.g., Wright et al., 1997) or parasocial contact (Schiappa et al., 2005).

Limitations

This study has some limitations that can be remedied or ameliorated in future studies. Primarily, the media stimulus in this study was short, contrived, and was not fully animated, which limits its ecological validity. Compared to other studies on parasocial contact, which often feature stimuli like full episodes of television shows (e.g., Massey, Wong, & Barbati, 2021) or a full season of television episodes (e.g., Bond, 2021), these stimuli were lacking in length, production value, and potentially entertainment. This choice was made in favor of high experimental validity, as it was possible to fully manipulate the script and affordances to best test the hypotheses and help decategorization occur during the first video. Attempts were made to ameliorate these limitations by pretesting the stimulus to ensure it was somewhat engaging, but it is probably less so than a fully produced media stimulus would be.

If researchers have the resources, producing stimuli like the one featured here with higher production values (e.g., longer, more seamless animation) may prove fruitful. Yet, it is understandable that some researchers are interested in studying media that afford contingency (e.g., video games) but do not wish to design their own stimulus. In this vein, more work studying parasocial contact with premade video game characters could fill that gap. Some games allow for positive, potentially decategorizing contact experiences with diverse groups (e.g., the transgender character Lev in *The Last of Us Two*). Although some video games portray minoritized characters without stereotypes, content analyses show that some video games portray minority groups in media stereotypically (e.g., race; Burgess et al., 2011). Instead of reducing

prejudice, theory would suggest that exposure to stereotype-reinforcing content would confirm existing knowledge structures and prime negative evaluations of minoritized characters (e.g., Macrae & Bodenhausen, 2000; Pettigrew, 1998). Macrae and Bodenhausen (2000) also point out that prejudices arise from stereotypes, so if content reinforces stereotypes, it will also encourage stereotypic beliefs. Thus, intergroup scholars should pick video game stimuli carefully to avoid perpetuating stereotypes.

Another limitation of this study is the social identity chosen for the stimulus. The media personae in this study, Ashe, was a transgender woman. This offered some advantages. First, a transgender identity is not necessarily immediately visible. Visual cues are some of the main ways in which individuals categorize others and therefore apply stereotypes and prejudices (Allport, 1954; Macrae & Bodenhausen, 2000; Sanders, 2010). Because Ashe's identity as a transgender woman was not immediately apparent, this means it was easier for audiences to view her as an individual instead of viewing her based on her social identity. In other words, decategorization was essentially done already, assuming audiences were paying close enough attention (i.e., they were not unfocused; Goffman, 1963). It is less clear how a stimulus with a more immediately apparent outgroup identity, such as one based on race, would fare in terms of decategorizing the outgroup media persona using the paradigm of this study (Allport, 1954; Macrae & Bodenhausen, 2000).

Given the importance of initial categorization for impression formation and stereotype or prejudice application (Macrae & Bodenhausen, 2000), it is also worth noting that some transgender women are more readily categorized as women by neutral observers (i.e., *passing*; Billard, 2019). This matters because oftentimes transgender women who do not pass are disliked, and marginalized (Billard, 2019). The character used in this stimulus was designed to pass in

order to more easily decategorize her during the first video. By designing a media stimulus with a character who passed as cisgender, this dissertation discouraged categorization of Ashe as transgender during the first video. Future work should examine how well a similar research paradigm works with a more readily apparent outgroup identity.

On a related note, Ashe was designed to look traditionally feminine, which made it easy for viewers to place her into a social category (even if they incorrectly judged her to be cisgender). Some work has found that more androgynous transgender individuals are not easy to categorize (e.g., Read, 2021). Oftentimes, people have negative attitudes towards those who are hard to categorize into social groups (e.g., Stern & Rule, 2018). Thus, future work should further consider how and if contact with hard-to-categorize individuals influences prejudice (for some work in on hard-to-categorize individuals, see Read, 2021).

A second advantage of using a transgender woman as the outgroup character is that transgender people are only around 0.4 - 0.6% of the US population (Meerwijk & Sevelius, 2017). This means it is more likely that many participants did not have much exposure to transgender women in their everyday lives. Previous work suggests that parasocial contact is more effective at reducing prejudice against outgroups when audiences have little contact with those outgroups in face-to-face contexts (Bond & Compton, 2015). As such, choosing a relatively uncommon social identity made it more likely that media exposure would reduce prejudice. This study attempted to measure participants' contact with transgender individuals, but the measure seemingly failed and was not used. Future work should study how similar studies can reduce prejudice towards more common social identities.

One the subject of the stimulus and transgender women, it is important to acknowledge that the author of this manuscript is a cisgender man, and as such does not have the experiences

of being transgender. This could present issues whereby Ashe did not authentically represent transgender womens' experiences. To ameliorate these concerns, storyboarding for the stimuli was guided through watching publicly available interviews with transgender women as they discussed their hobbies, friends, and experiences. Using this rough storyboard created by the author, the script was approved and finalized by a nonbinary individual.

A third limitation is the poor factor loading of the ePSI, social presence, and liking measures during the initial CFA. It was clear that the reverse coded items distorted factor loadings (Dueber et al., 2021; Woods, 2006). The decision to include or exclude those items both had benefits or drawbacks. In excluding reverse coded items, factor loading improved but acquiescence bias may have distorted findings (Plieninger, 2017) and covariance across items increased. Alternatively, the reverse coded items could remain, which limited the effect of acquiescence bias on data quality (Plieninger, 2017) but left a substandard CFI. Ultimately, this decision came down to judging which limitation was least harmful. Some statisticians recommend leaving reverse coded items in (e.g., Savalei & Falk, 2014) and other measures of model fit were acceptable when reverse coded items were included (Awang, 2012). The scales also proved reliable and were validated with the reverse coded items, and there were alternative ways to check for validity issues such as multicollinearity. Thus, it was decided to leave reverse coded items in. Ideally, such a tradeoff would not need to be made.

The gender skew of this study also presents a limitation, especially because gender was such an important aspect and women and men significantly differed across some dependent variables. It is not immediately clear why this study has such a large gender skew, as researchers who study the Mturk platform report that it closely mirrors the general US population (e.g.,

Burnham, Le, & Piedmont, 2018) or a gender skew in the opposite direction (e.g., Kosara & Ziemkiewicz, 2010). Regardless of the reason, future work should strive for a more even split.

Relatedly, research indicates that Mturk samples provide data quality equivalent to other common samples, such as student samples (Fliecher, 2015). Yet, it would be ideal to collect data from a higher quality source. Future work could collect data from more thoroughly screened nationally representative panels for validity.

Finally, this study did not measure some variables that may be of interest to intergroup contact scholars. For example, some work has argued that parasocial contact reduces explicit prejudices, which are more overt biases and negative attitudes, but fails to change implicit prejudices, which are more subconscious (Breves, 2020; Karpinski & Hilton, 2001). Alternative measures can assess implicit bias. For example, the implicit association test has been found to measure implicit bias independently of explicit biases (Karpinski & Hilton, 2001), and may be less susceptible to data issues such as desirability bias or demand characteristics (Kim, 2003). Future work should examine how parasocial contact impacts implicit biases as well.

Another measure that may be of interest to intergroup scholars is knowledge of the outgroup. Longform studies have demonstrated that audiences may learn plenty about outgroups via media, particularly when they have little exposure to that outgroup in their face-to-face social interactions (Bond, 2021; Bond & Compton, 2015). This study did measure participants' contact with transgender people, but contact is not the same as knowledge.

This paper also did not deeply theorize on the role of anxiety during intergroup contact. One advantage of interventions such as parasocial contact or vicarious contact is that such contact does not involve directly talking to an outgroup member (Schiappa et al., 2005). Talking to outgroup members, particularly those against which one holds prejudices, can be anxiety-

inducing and thus make the contact scenario unpleasant (Stephan & Stephan, 1984). If the contact is unpleasant, it is unlikely to reduce prejudice (Allport, 1954). Media exposure is less likely to induce such anxiety overall (e.g., Ortiz & Harwood, 2007), but it is possible that affordances similarly inhibit or exacerbate anxiety. For example, interactive media may lead to more anxiety than uninteractive media, as such media place demands on the audience to provide input and respond to outgroup characters. Thus, work that directly manipulates affordances may benefit from considering how anxiety may arise differently based on the action potentials (or perceived action potentials) of different channels.

Another variable that would have proven fruitful to measure is perceived typicality of Ashe. According to intergroup scholars (e.g., Hewstone & Brown, 1984; Pettigrew, 1998), intergroup contact is most effective at prejudice reduction is the contacted outgroup member is perceived as somewhat typical of their social group. It is not completely clear how typical an outgroup member must be (Hewstone & Brown, 1984), and if an outgroup member is perceived as too typical, then there is risk of reinforcing stereotypes (Macrae & Bodenhausen, 2000). Although there is little reason to believe that Ashe was perceived as an atypical transgender woman, it would have been prudent to ask participants directly. This is a gap future work can address.

Other Future Directions

Aside from addressing the limitations of this study, there are other avenues researchers using the parasocial contact hypothesis can pursue. First, this study focused on only one of four mechanisms outlined in intergroup contact theory. The goal of this study was to align the parasocial contact hypothesis more with the affective mechanism for reducing prejudice outlined by intergroup contact theory (Pettigrew, 1998). This affective mechanism was an intuitive way to

bring the two theories closer together. Yet, Pettigrew (1998; 2021) also notes that all four mechanisms of intergroup contact theory are interconnected. This means the other three mechanisms may also be mimicable in mediated contexts.

For example, in this study the media persona gave information about transgender women to audiences, yet this study did not deeply consider how this information may reduce prejudice through learning about outgroups (i.e., the cognitive mechanism; Pettigrew, 1998). Through repeated or prolonged exposure to outgroup members that are perceived as typical of their social group yet defy stereotypes, prejudice can be reduced. This study featured a character who defied stereotypes about transgender women. For example, Howansky and colleagues (2021) identified that transgender women are stereotyped by cisgender people as masculine, sexual, gay, and confused. With guidance from the dissertation author's advisor, the author and the artist hired for this project advanced the portrayal of Ashe aiming to avoid characterizing Ashe in ways that resembled these stereotypic traits. Yet, it is difficult to prove that prejudice was reduced via the mechanism presented above because data on neither knowledge of the outgroup nor perceptions of Ashe's typicality were collected. The short total duration of the stimuli may not constitute repeated or prolonged exposure. A test of the cognitive mechanism would also be better suited to a longer study, where audiences could make more sustained contact with an outgroup media character. If the mechanisms of intergroup contact theory are interconnected as Pettigrew (1998) posits, future work could also examine if the cognitive and affective mechanisms can interact to allow for more robust prejudice reduction than either mechanism in isolation. Finally, future work can consider how the cognitive mechanism can be ported to parasocial contact work more robustly.

This study used a stimulus with a testimonial-style presentation, where a single character talked about herself and her experiences. This is representative of media content that exists (e.g., interviews, reality TV, YouTube videos, vlogs), but differs from other types of media commonly consumed, such as sitcoms or other television shows that do not break the fourth wall (Auter, 1992; Schiappa et al., 2005). It is possible that in a more complex stimulus that featured multiple characters and overarching plotlines the individuating details about Ashe would stand out less, thus diluting the effectiveness of the stimulus at decategorizing her. Some scholars (e.g., Schiappa et al., 2006) have studied how watching sitcoms that feature outgroup characters can reduce prejudice, but like many other studies on parasocial contact these studies did not consider the role of decategorization. Future work could study the ideas presented here using media with more characters, less forth wall breaking, and more complicated plotlines.

Finally, this work has primarily focused on PSIs and social presence, yet there are other ways in which media exposure can reduce prejudice. For example, work on vicarious contact via media has found that identifying with an ingroup media character who has friendships with outgroup characters reduces prejudice (e.g., Ortiz & Harwood, 2007). As discussed earlier, the mechanisms that underlie parasocial contact and vicarious contact differ. Yet, it is possible that considering affordances could be fruitful for designing more effective interventions using vicarious contact as well. Future work on vicarious contact should test media affordances to see how they elicit or inhibit identification. For example, affording audiences control over a media character's actions elicits a monadic relationship (i.e., a merging of identities) instead of a dyadic one (i.e., character and audience remain separate; e.g., Klimmt et al., 2009). Affording direct control over a character should make identifying with said character (a monadic relationship) easier compared to media that do not afford this level of control.

Conclusion

Media are ubiquitous in contemporary culture. Although some have raised concerns over the potential deleterious outcomes of media, it also has prosocial potential. The parasocial contact hypothesis is one theory that describes how media can reduce prejudice towards outgroups. Through my work here, I sincerely hope to continue that line of work of exploring how media can make the world better.

References

Abrams, J. R., McGaughey, K. J., & Haghighat, H. (2018). Attitudes toward Muslims: A test of the parasocial contact hypothesis and contact theory. *Journal of Intercultural Communication Research*, *47*(4), 276-292. https://doi.org/10.1080/17475759.2018.1443968

Allport, F. H. (1920). The influence of the group upon association and thought. *Journal of Experimental Psychology*, *3*(3), 159-182. https://doi.org/10.1037/h0067891

Allport, G. (1954) *The nature of prejudice*. New York: Addison-Wesley.

Ata, A., Bastian, B., & Lusher, D. (2009). Intergroup contact in context: The mediating role of social norms and group-based perceptions on the contact–prejudice link. *International Journal of Intercultural Relations*, *33*(6), 498-506. https://doi.org/10.1016/j.ijintrel.2009.05.001

Auter, P. J. (1992). Psychometric: TV that talks back: An experimental validation of a parasocial interaction scale. *Journal of Broadcasting & Electronic Media*, *36*(2), 173-181. https://doi.org/10.1080/08838159209364165

Bakker, M., & Wicherts, J. M. (2014). Outlier removal and the relation with reporting errors and quality of psychological research. *PLoS ONE, 9*(7), Article e103360. https://doi.org/10.1371/journal.pone.0103360

Ball, D., Coelho, P. S., & Vilares, M. J. (2006). Service personalization and loyalty. *Journal of Services Marketing, 20*(6), 391- 403. https://doi.org/10.1108/08876040610691284

Banas, J. A., Bessarabova, E., & Massey, Z. B. (2020). Meta-analysis on mediated contact and prejudice. *Human Communication Research, 46*(2-3), 120-160. https://doi.org/10.1093/hcr/hqaa004

Bente, G., Rüggenberg, S., Krämer, N. C., and Eschenburg, F. (2008). Avatar-mediated networking: increasing social presence and interpersonal trust in net-based collaborations. *Human Communication Research,* 34, 287–318. https://doi.org/10.1111/j.1468-2958.2008.00322.x

Bernhold, Q. S. (2019). Parasocial relationships with disliked television characters, depressive symptoms, and loneliness among older adults. *Journal of Applied Communication Research*, *47*(5), 548-570. https://doi.org/10.1080/00909882.2019.1679384

Billard, T. J. (2018). Attitudes toward transgender men and women: Development and validation of a new measure. *Frontiers in Psychology*, *9*, 1-11. https://doi.org/10.3389/fpsyg.2018.00387

Billard, T. J. (2019). "Passing" and the politics of deception: transgender bodies, cisgender aesthetics, and the policing of inconspicuous marginal identities. In *The Palgrave handbook of deceptive communication* (pp. 463-477). Palgrave Macmillan, Cham.

Biocca, F. (1997). The cyborg's dilemma: Progressive embodiment in virtual environments. *Journal of Computer-Mediated Communication*, *3*(2), JCMC324. https://doi.org/10.1111/j.1083-6101.1997.tb00070.x

Biocca, F., Harms, C., & Burgoon, J. K. (2003). Toward a more robust theory and measure of social presence: Review and suggested criteria. *Presence: Teleoperators & Cirtual Environments*, *12*(5), 456-480. https://doi.org/10.1162/105474603322761270

Biocca, F., Harms, C., and Gregg, J. (2001). "The networked minds measure of social presence: pilot test of the factor structure and concurrent validity," in *Proceedings of the 4th Annual International Workshop on Presence* (Philadelphia, PA)

Birchmore, A., & Kettrey, H. H. (2021). Exploring the boundaries of the parasocial contact hypothesis: an experimental analysis of the effects of the "bury your gays" media trope on homophobic and sexist attitudes. *Feminist Media Studies*, https://doi.org/10.1080/14680777.2021.1887919

Bond, B. J. (2021). The development and influence of parasocial relationships with television characters: A longitudinal experimental test of prejudice reduction through parasocial contact. *Communication Research*, *48*(4), 573-593. https://doi.org/10.1177/0093650219900632

Bond, B. J., & Compton, B. L. (2015). Gay on-screen: The relationship between exposure to gay characters on television and heterosexual audiences' endorsement of gay equality. Journal of Broadcasting & Electronic Media, 59, 717-732. https://doi.org/10.1080/08838151.2015.1093485

Braddock, J. H. (1980). The perpetuation of segregation across levels of education: A behavioral assessment of the contact-hypothesis. *Sociology of Education*, 178-186. https://doi.org/10.2307/2112412

Branch, S. E., Wilson, K. M., & Agnew, C. R. (2013). Committed to Oprah, Homer, or House: Using the investment model to understand parasocial relationships. *Psychology of Popular Media Culture*, *2*(2), 96-109. https://doi.org/10.1037/a0030938

Breves, P. (2020). Reducing Outgroup Bias through Intergroup Contact with Non-Playable Video Game Characters in VR. *Presence*, *27*(3), 257-273. https://doi.org/10.1162/pres_a_00330

Brown, R., Eller, A., Leeds, S., & Stace, K. (2007). Intergroup contact and intergroup attitudes: A longitudinal study. *European Journal of Social Psychology,* 37(4), 692-703. https://doi.org/10.1002/ejsp.384

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods and Research*, 21, 230–258. https://doi.org/10.1177/0049124192021002005

Bucy, E. P. (2004). Interactivity in society: Locating an elusive concept. *The Information Society*, *20*(5), 373-383. https://doi.org/10.1080/01972240490508063

Burgess, M. C., Dill, K. E., Stermer, S. P., Burgess, S. R., & Brown, B. P. (2011). Playing with prejudice: The prevalence and consequences of racial stereotypes in video games. *Media Psychology*, *14*(3), 289-311. https://doi.org/10.1080/15213269.2011.596467

Burnham, M. J., Le, Y. K., & Piedmont, R. L. (2018). Who is Mturk? Personal characteristics and sample consistency of these online workers. *Mental Health, Religion & Culture*, *21*(9-10), 934-944. https://doi.org/10.1080/13674676.2018.1486394

Byrne, S., & Hart, P. S. (2009). The boomerang effect a synthesis of findings and a preliminary theoretical framework. *Annals of the International Communication Association*, *33*(1), 3-37.

Byron, K., & Baldridge, D. C. (2007). E-mail recipients' impressions of senders' likability: The interactive effect of nonverbal cues and recipients' personality. *The Journal of Business Communication (1973)*, *44*(2), 137-160. https://doi.org/10.1177/0021943606297902

Claypool, H. M., & Bernstein, M. J. (2014). Social exclusion and stereotyping: Why and when exclusion fosters individuation of others. *Journal of Personality and Social Psychology, 106*(4), 571-589. https://doi.org/10.1037/a0035621

Cohen, E. L., Myrick, J. G., & Hoffner, C. A. (2021). The effects of celebrity silence breakers: Liking and parasocial relationship strength interact to predict the social influence of celebrities' sexual harassment allegations. *Mass Communication and Society*, *24*(2), 288-313. https://doi.org/10.1080/15205436.2020.1839102

Cohen, J. (1999). Favorite characters of teenage viewers of Israeli serials. *Journal of Broadcasting and Electronic Media*, *43*, 327–345. https://doi.org/10.1080/08838159909364495

Cohen, J. (2004). Parasocial break-up from favorite television characters: The role of attachment styles and relationship intensity. *Journal of Social and Personal Relationships*, *21*(2), 187-202. https://doi.org/10.1177/0265407504041374

Cohen, J. (2014) Mediated relationships and social life: Current research on fandom, parasocial relationships, and identification. In M. B. Oliver & A. A. Raney (Eds.), *Media and social life* (pp. 142–155). New York, NY: Routledge

Cummings, J. J., and Bailenson, J. N. (2016). How immersive is enough? A meta-analysis of the effect of immersive technology on user presence. *Media Psychol.* 19, 272–309. Doi: 10.1080/15213269.2015.1015740

Corritore, C. L., Kracher, B., & Wiedenbeck, S. (2003). On-line trust: concepts, evolving themes, a model. *International Journal of Human-Computer Studies*, *58*(6), 737-758. https://doi.org/10.1016/S1071-5819(03)00041-7

Daniel Jr, E. S., & Westerman, D. K. (2017). Valar Morghulis (all parasocial men must die): Having nonfictional responses to a fictional character. *Communication Research Reports*, *34*(2), 143-152. https://doi.org/10.1080/08824096.2017.1285757

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *15*(4), 332-351. https://doi.org/10.1177/1088868311411103

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*(1), 5-18. https://doi.org/10.1037/0022-3514.56.1.5

de Vries, P (2006) Social presence as a conduit to the social dimensions of online trust. In (Ijsselstein W, de Kort Y, Midden C, Eggen B and Van Den Hoven E (Eds), *Persuasive Technology* (pp 55–59), Springer, Berlin: Heidelberg.

Dibble, J. L., Hartmann, T., & Rosaen, S. F. (2016). Parasocial interaction and parasocial relationship: Conceptual clarification and a critical assessment of measures. *Human Communication Research*, *42*(1), 21-44. https://doi.org/10.1111/hcre.12063

Dibble, J. L., & Rosaen, S. F. (2011). Parasocial interaction as more than friendship: Evidence for parasocial interactions with disliked media figures. *Journal of Media Psychology: Theories, Methods, and Applications, 23*(3), 122–132. https://doi.org/10.1027/1864-1105/a000044

Dixon, J., Durrheim, K., & Tredoux, C. (2007). Intergroup contact and attitudes toward the principle and practice of racial equality. *Psychological Science*, *18*(10), 867-872. https://doi.org/10.1111/j.1467-9280.2007.01993.x

Dixon, J., Durrheim, K., Tredoux, C. G., Tropp, L. R., Clack, B., Eaton, L., & Quayle, M. (2010). Challenging the stubborn core of opposition to equality: Racial contact and policy attitudes. *Political Psychology*, *31*(6), 831-855. https://doi.org/10.1111/j.1467-9221.2010.00792.x

Dovidio, J. F., Eller, A., & Hewstone, M. (2011). Improving intergroup relations through direct, extended and other forms of indirect contact. *Group Processes & Intergroup Relations*, *14*(2), 147-160. https://doi.org/10.1177/1368430210390555

Dovidio, J. F., Hewstone, M., Glick, P., & Esses, V. M. (2010). Prejudice, stereotyping and discrimination: Theoretical and empirical overview. In J. F. Dovidio, M. Hewstone, P. Glick, & V. M. Esses (Eds.), *The SAGE handbook of prejudice, stereotyping and discrimination* (pp. 3–28). London: Sage.

Dowd, J. J. (1980). Prejudice and proximity: An analysis of age differences. *Research on Aging,* 2(1), 23-48. https://doi.org/10.1177/016402758021002

Duck, S. (1991). *Understanding relationships*. Guilford Press.

Duck S and Montgomery BM (1991) The interdependence among interaction substance, theory, and methods. In: Montgomery BM and Duck S (eds). *Studying Interpersonal Interaction* (pp. 3–15). New York: Guilford Press,

Dueber, D. M., Toland, M. D., Lingat, J. E., Love, A. M., Qiu, C., Wu, R., & Brown, A. V. (2021). To Reverse Item Orientation or Not to Reverse Item Orientation, That Is the Question. *Assessment*, https://doi.org/10.1177/10731911211017635

Eagly, A. H. (2004). Prejudice: Toward a More Inclusive Understanding. In A. H. Eagly, R. M. Baron, & V. L. Hamilton (Eds.), *The social psychology of group identity and social conflict: Theory, application, and practice* (pp. 45–64). American Psychological Association. https://doi.org/10.1037/10683-003

Eagly, A. H., & Mladinic, A. (1994). Are people prejudiced against women? Some answers from research on attitudes, gender stereotypes, and judgments of competence. *European Review of Social Psychology*, *5*(1), 1-35. https://doi.org/10.1080/14792779543000002

Eller, A., & Abrams, D. (2003). 'Gringos' in Mexico: Cross-sectional and longitudinal effects of language school-promoted contact on intergroup bias. *Group Processes & Intergroup Relations*, *6*(1), 55-75. https://doi.org/10.1177/1368430203006001012

Fairclough, N. (1987). *Language and power.* Longman, London.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191

Festinger, L. (1962). Cognitive dissonance. *Scientific American*, *207*(4), 93-106.

Fleischer, A., Mead, A. D., & Huang, J. (2015). Inattentive responding in MTurk and other online samples. *Industrial and Organizational Psychology*, *8*(2), 196-202. https://doi.org/10.1017/iop.2015.25

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50

Fox, J., & McEwan, B. (2017). Distinguishing technologies for social interaction: The perceived social affordances of communication channels scale. *Communication Monographs*, *84*(3), 298-318. https://doi.org/10.1080/03637751.2017.1332418

Freedman, D., Pisani, R., & Purves, R. (2007). Statistics (international student edition). *Pisani, R. Purves, 4th Edn. WW Norton & Company, New York*

Gaertner, S. L., Dovidio, J. F., & Bachman, B. A. (1996). Revisiting the contact hypothesis: The induction of a common ingroup identity. *International Journal of Intercultural Relations*, *20*(3-4), 271-290. https://doi.org/10.1016/0147-1767(96)00019-3

Gaines Jr, S. O., & Reed, E. S. (1995). Prejudice: From Allport to DuBois. *American Psychologist*, *50*(2), 96-103. https://doi.org/10.1037/0003-066X.50.2.96

Gaver, W. W. (1991). Technology affordances. *Proceedings of the SIGCHI Conference on Human Factors*, 79 –54. https://doi.org/10.1145/108844.108856

Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston, MA: Houghlin Mifflin.

Giles, D. C. (2002). Parasocial interaction: A review of the literature and a model for future research. *Media Psychology*, *4*(3), 279-305. https://doi.org/10.1207/S1532785XMEP0403_04

Goffman, E. (1963). *Behaviour in Public Places: Notes on the Social Organization of Gatherings*. New York: Free Press.

Gonzales, A. L., Finley, T., & Duncan, S. P. (2009, April). (Perceived) interactivity: does interactivity increase enjoyment and creative identity in artistic spaces?. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 415-418).

Gordon, A. R., & Meyer, I. H. (2007). Gender nonconformity as a target of prejudice, discrimination, and violence against LGB individuals. *Journal of LGBT health research*, *3*(3), 55-71. https://doi.org/10.1080/15574090802093562

Gregg, P. B. (2018). Parasocial breakup and twitter: The firing of barb abney. *Journal of Broadcasting & Electronic Media*, *62*(1), 38-50. https://doi.org/10.1080/08838151.2017.1402900

Gries, P., Sanders, M. A., Stroup, D. R., & Cai, H. (2015). Hollywood in China: how American popular culture shapes Chinese views of the "beautiful imperialist"–An experimental analysis. *The China Quarterly*, *224*, 1070-1082. https://doi.org/10.1017/S0305741015000831

Hall, J. A. (2018). When is social media use social interaction? Defining mediated social interaction. *New Media & Society*, *20*(1), 162-179. https://doi.org/10.1177/1461444816660782

Halualani, R. T., Chitgopekar, A. S., Morrison, J. H. T. A., & Dodge, P. S. W. (2004). Diverse in name only? Intercultural interaction at a multicultural university. *Journal of Communication*, *54*(2), 270-286. https://doi.org/10.1111/j.1460-2466.2004.tb02628.x

Hargreaves, D. A., & Tiggemann, M. (2009). Muscular ideal media images and men's body image: Social comparison processing and individual vulnerability. *Psychology of Men & Masculinity*, *10*(2), 109-119. https://doi.org/10.1037/a0014691

Hartmann, T., & Goldhoorn, C. (2011). Horton and Wohl revisited: Exploring viewers' experience of parasocial interaction. *Journal of Communication*, *61*(6), 1104-1121. https://doi.org/10.1111/j.1460-2466.2011.01595.x

Harwood, J. & Joyce, N. (2012). Intergroup contact and communication. In H. Giles (Ed.). *The handbook of intergroup communication*. Routledge.

Harwood, J. (2010). The contact space: A novel framework for intergroup contact research. *Journal of Language and Social Psychology*, *29*(2), 147-177. https://doi.org/10.1177/0261927X09359520

Harwood, J. (2021). Modes of intergroup contact: If and how to interact with the outgroup. *Journal of Social Issues*, *77*(1), 154-170. https://doi.org/10.1111/josi.12421

Hegarty, P., & Rutherford, A. (2019). Histories of psychology after Stonewall: Introduction to the special issue. *American Psychologist*, *74*(8), 857-867. http://dx.doi.org/10.1037/amp0000571

Hellman, D. (2008). *When is discrimination wrong?*. Cambridge, MA: Harvard University Press.

Hewstone, M. & Brown, R. (1986) *Contact & conflict in intergroup encounters*. Oxford: Basil Blackwell

Hewstone, M., Lolliot, S., Swart, H., Myers, E., Voci, A., Al Ramiah, A., & Cairns, E. (2014). Intergroup contact and intergroup conflict. Peace and Conflict: *Journal of Peace Psychology*, *20*(1), 39-53. https://doi.org/10.1037/a0035582

Hodson, G & Hewston, M. (2013) *Advances in intergroup contact.* Psychology Press.

Hodson, G. (2008). Interracial prison contact: The pros for (socially dominant) cons. *British Journal of Social Psychology, 47*(2), 325-351. https://doi.org/10.1348/014466607X231109

Hoffman, L. W. (1984). Foreward. In N. Miller & M. B. Brewer (Eds.) *Groups in contact: The psychology of desegregation*. New York: Academic Press.

Hoffner, C. A., & Bond, B. J. (2022). Parasocial relationships, social media, & well-being. *Current Opinion in Psychology*, *45*, https://doi.org/10.1016/j.copsyc.2022.101306.

Hoffner, C. A., & Cohen, E. L. (2012). Responses to obsessive compulsive disorder on Monk among series fans: Parasocial relations, presumed media influence, and behavioral outcomes. *Journal of Broadcasting & Electronic Media*, *56*(4), 650-668. https://doi.org/10.1080/08838151.2012.732136

Hogg, M. A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. *European Review of Social Psychology*, *11*(1), 223-255. https://doi.org/10.1080/14792772043000040

Horton, D., & Richard Wohl, R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry*, *19*(3), 215-229. https://doi.org/10.1080/00332747.1956.11023049

Howansky, K., Wilton, L. S., Young, D. M., Abrams, S., & Clapham, R. (2021). (Trans) gender stereotypes and the self: Content and consequences of gender identity stereotypes. *Self and Identity*, *20*(4), 478-495. https://doi.org/10.1080/15298868.2019.1617191

Hu, M., Chen, M., Li, M., & Yin, Z. (2019). Meet the media characters from another culture: Influence of ethnocentrism on parasocial interaction. *Psychology of Popular Media Culture*, *8*(2), 170-179.

Hugenberg, K., & Bodenhausen, G. V. (2004). Ambiguity in social categorization: The role of prejudice and facial affect in race categorization. *Psychological Science, 15*(5), 342-345. https://doi.org/10.1111/j.0956-7976.2004.00680.x

Ingram, J., & Luckett, Z. (2019). My friend Harry's a wizard: Predicting parasocial interaction with characters from fiction. *Psychology of Popular Media Culture*, *8*(2), 148-158. https://doi.org/10.1037/ppm0000169

Jennings, N., & Alper, M. (2016). Young children's positive and negative parasocial relationships with media characters. *Communication Research Reports*, *33*(2), 96-102. https://doi.org/10.1080/08824096.2016.1154833

Joyce, N., & Harwood, J. (2014). Improving intergroup attitudes through televised vicarious intergroup contact: Social cognitive processing of ingroup and outgroup information. *Communication Research*, *41*(5), 627-643. https://doi.org/10.1177/0093650212447944

Kalyanaraman, S., & Sundar, S. S. (2006). The psychological appeal of personalized content in web portals: Does customization affect attitudes and behavior?. *Journal of Communication*, *56*(1), 110-132. https://doi.org/10.1177/0093650202239025

Karpinski, A., & Hilton, J. L. (2001). Attitudes and the implicit association test. *Journal of personality and Social Psychology*, *81*(5), 774-778. https://doi.org/10.1037/0022-3514.81.5.774

Kay, A. C., Day, M. V., Zanna, M. P., & Nussbaum, A. D. (2013). The insidious (and ironic) effects of positive stereotypes. *Journal of Experimental Social Psychology*, *49*(2), 287-291. https://doi.org/10.1016/j.jesp.2012.11.003

Kim, C., & Harwood, J. (2020). Parasocial Contact's Effects on Relations Between Minority Groups in a Multiracial Context. *International Journal of Communication*, *14*, 364-385.

Kim, D. Y. (2003). Voluntary controllability of the implicit association test (IAT). *Social Psychology Quarterly, 66*(1), 83-96. https://doi.org/10.2307/3090143

Kiousis, S. (2002). Interactivity: a concept explication. *New Media & Society*, *4*(3), 355-383. https://doi.org/10.1177/146144480200400303

Klimmt, C., Hartmann, T., & Frey, A. (2007). Effectance and control as determinants of video game enjoyment. *Cyberpsychology & Behavior*, *10*(6), 845-848. https://doi.org/10.1089/cpb.2007.9942

Klimmt, C., Hartmann, T., & Schramm, H. (2006). Parasocial interactions and relationships. In J. Bryant & P. Vorderer (Eds.), *Psychology of entertainment* (pp. 291–313). Mahwah, NJ: Erlbaum

Kosara, R., Ziemkiewicz, C. (2010, April). Do Mechanical Turks dream of square pie charts? Paper presented at the Proceedings of the 3rd BELIV'10 Workshop: Beyond Time and Errors: Novel Evaluation Methods for Information Visualization, Atlanta, GA.

Kreissl, J., Possler, D., & Klimmt, C. (2021). Engagement With the Gurus of Gaming Culture: Parasocial Relationships to Let's Players. *Games and Culture*, *16*(8), https://doi.org/10.1177/15554120211005241

Kruikemeier, S., Van Noort, G., Vliegenthart, R., & De Vreese, C. H. (2013). Getting closer: The effects of personalized and interactive online political communication. *European Journal of Communication*, *28*(1), 53-66. https://doi.org/10.1177/0267323112464837

Kudo, K., & Simkin, K. A. (2003). Intercultural friendship formation: The case of Japanese students at an Australian university. *Journal of Intercultural Studies*, *24*(2), 91-114. https://doi.org/10.1080/0725686032000165351

Lather, J., & Moyer-Gusé, E. (2011). How do we react when our favorite characters are taken away? An examination of a temporary parasocial breakup. *Mass Communication and Society*, *14*(2), 196-215. https://doi.org/10.1080/15205431003668603

Lee, K. M. (2004). Presence, explicated. *Communication Theory*, *14*(1), 27-50. https://doi.org/10.1111/j.1468-2885.2004.tb00302.x

Lee, Se-Jin, Wei-Na Lee, Hyojin Kim, and Patricia A. Stout (2002), "A Comparison of Object ive Characteristics and User Perception of Web Sites," *Journal of Interactive Advertising*, *4*, https://doi.org/10.1080/15252019.2004.10722088

Liebers, N., & Schramm, H. (2017). Friends in books: The influence of character attributes and the reading experience on parasocial relationships and romances. *Poetics*, *65*, 12-23. https://doi.org/10.1016/j.poetic.2017.10.001

Lim, J. S., Choe, M. J., Zhang, J., & Noh, G. Y. (2020). The role of wishful identification, emotional engagement, and parasocial relationships in repeated viewing of live-streaming

games: A social cognitive theory perspective. *Computers in Human Behavior*, *108*, https://doi.org/10.1016/j.chb.2020.106327

Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, *3*(2), JCMC321. https://doi.org/10.1111/j.1083-6101.1997.tb00072.x

MacInnis, C. C., & Page-Gould, E. (2015). How can intergroup interaction be bad if intergroup contact is good? Exploring and reconciling an apparent paradox in the science of intergroup relations. *Perspectives on Psychological Science*, *10*(3), 307-327. https://doi.org/10.1177/1745691614568482

MacNab, B., Brislin, R., & Worthley, R. (2012). Experiential cultural intelligence development: Context and individual attributes. *The International Journal of Human Resource Management*, *23*(7), 1320-1341. https://doi.org/10.1080/09585192.2011.581636

Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, *51*(1), 93-120. https://doi.org/10.1146/annurev.psych.51.1.93

Mäkinen, V., Liebkind, K., Jasinskaja-Lahti, I., & Renvik, T. A. (2019). A teacher-led vicarious contact intervention in culturally mixed classrooms with in-and outgroup role models of intergroup friendship. *Journal of School Psychology*, 75, 27-40. https://doi.org/10.1016/j.jsp.2019.07.002

Mansouri, F., & Vergani, M. (2018). Intercultural contact, knowledge of Islam, and prejudice against muslims in Australia. *International Journal of Intercultural Relations*, *66*, 85-94. https://doi.org/10.1016/j.ijintrel.2018.07.001

Massey, Z. B., Wong, N. C., & Barbati, J. L. (2021). Meeting the (Trans) parent: Test of Parasocial Contact with Transgender Characters on Reducing Stigma toward Transgender People. *Communication Studies*, *72*(2), 232-250. https://doi.org/10.1080/10510974.2021.1876125

Massey, Z. B., Wong, N. C., & Barbati, J. L. (2021). Meeting the (Trans) parent: Test of Parasocial Contact with Transgender Characters on Reducing Stigma toward Transgender People. *Communication Studies*, *72*(2), 232-250. https://doi.org/10.1080/10510974.2021.1876125

Mayer, R. E. & Pilegard, C. (2014). Principles for managing essential processing in multimedia learning: Segmenting, pretraining, and modality principles. In R. E. (Ed.), *The Cambridge handbook of multimedia learning* (2nd ed; pp. 316-344). New York: Cambridge University Press

Mazziotta, A., Mummendey, A., & Wright, S. C. (2011). Vicarious intergroup contact effects: Applying social-cognitive theory to intergroup contact research. *Group Processes & Intergroup Relations*, *14*(2), 255-274. https://doi.org/10.1177/1368430210390533

Mazziotta, A., Rohmann, A., Wright, S. C., De Tezanos-Pinto, P., & Lutterbach, S. (2015). (How) does positive and negative extended cross-group contact predict direct cross-group contact and intergroup attitudes?. *European Journal of Social Psychology*, *45*(5), 653-667. https://doi.org/10.1002/ejsp.2110

McArthur, L. Z., & Baron, R. M. (1983). Toward an ecological theory of social perception. *Psychological Review*, *90*(3), 215-238. https://doi.org/10.1037/0033-295X.90.3.215

McCroskey, L. L., McCroskey, J. C., & Richmond, V. P. (2006). Analysis and improvement of the measurement of interpersonal attraction and homophily. *Communication Quarterly*, *54*(1), 1-31. https://doi.org/10.1080/01463370500270322

McKeown, S., & Dixon, J. (2017). The "contact hypothesis": Critical reflections and future directions. *Social and Personality Psychology Compass, 11*(1), e12295. https://doi.org/10.1111/spc3.12295

Meerwijk, E. L., & Sevelius, J. M. (2017). Transgender population size in the United States: a meta-regression of population-based probability samples. *American Journal of Public Health*, *107*(2), e1-e8.

Minard, R. D. (1952). Race relationships in the Pocahontas coal field. *Journal of Social Issues, 8*(1), 29-44. https://doi.org/10.1111/j.1540-4560.1952.tb01592.x

Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory, 18*(3), 407-425. https://doi.org/10.1111/j.1468-2885.2008.00328.x

Moyer-Gusé, E., Dale, K. R., & Ortiz, M. (2018). Reducing prejudice through narratives: An examination of the mechanisms of vicarious intergroup contact. *Journal of Media Psychology: Theories, Methods, and Applications, 31*, 185-195. https://doi.org/10.1027/1864-1105/a000249

Murrar, S., & Brauer, M. (2018). Entertainment-education effectively reduces prejudice. *Group Processes & Intergroup Relations*, *21*(7), 1053-1077. https://doi.org/10.1177/1368430216682350

Murrar, S., Gavac, S., & Brauer, M. (2017) Reducing prejudice. In: Summers R (Ed.) *Social Psychology: How Other People Influence Our Thoughts and Actions*. Santa Barbara, CA: ABC-CLIO

Nass, C., & Moon, Y. (2000). Machines and mindlessness: Social responses to computers. *Journal of Social Issues*, *56*(1), 81-103. https://doi.org/10.1111/0022-4537.00153

Norman, D. A. (1990). The design of everyday things. New York, NY: Doubleday

Nowak, K. L., & Biocca, F. (2003). The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. *Presence: Teleoperators & Virtual Environments*, *12*(5), 481-494. https://doi.org/10.1162/105474603322761289

Oh, C. S., Bailenson, J. N., & Welch, G. F. (2018). A systematic review of social presence: Definition, antecedents, and implications. *Frontiers in Robotics and AI*, 114. https://doi.org/10.3389/frobt.2018.00114

Oliver, M. B., Bilandzic, H., Cohen, J., Ferchaud, A., Shade, D. D., Bailey, E. J., & Yang, C. (2019). A penchant for the immoral: Implications of parasocial interaction, perceived complicity, and identification on liking of anti-heroes. *Human Communication Research*, *45*(2), 169-201. https://doi.org/10.1093/hcr/hqy019

Ortiz, M., & Harwood, J. (2007). A social cognitive theory approach to the effects of mediated intergroup contact on intergroup attitudes. *Journal of Broadcasting & Electronic Media, 51*, 615-631. https://doi.org/10.1080/08838150701626487

Paluck, E. L., Green, S. A., & Green, D. P. (2019). The contact hypothesis re-evaluated. *Behavioural Public Policy, 3*(2), 129-158. https://doi.org/10.1017/bpp.2018.25

Paolini, S., Hewstone, M., & Cairns, E. (2007). Direct and indirect intergroup friendship effects: Testing the moderating role of the affective-cognitive bases of prejudice. Personality and Social *Psychology Bulletin*, 33(10), 1406-1420. https://doi.org/10.1177/0146167207304788

Park, S. Y. (2012). Mediated intergroup contact: concept explication, synthesis, and application. *Mass Communication and Society*, *15*(1), 136-159. https://doi.org/10.1080/15205436.2011.558804

Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. Personality and *Social Psychology Bulletin, 23*, 173-185. https://doi.org/10.1177/0146167297232006

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, *49*(1), 65-85. https://doi.org/10.1146/annurev.psych.49.1.65

Pettigrew, T. F. (2021). Advancing intergroup contact theory: Comments on the issue's articles. *Journal of Social Issues*, *77*(1), 258-273. https://doi.org/10.1111/josi.12423

Pettigrew, T. F., & Tropp, L. R. (2005). Allport's intergroup contact hypothesis: Its history and influence. *On the nature of prejudice: Fifty years after Allport*, 262-277.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751-783. https://doi.org/10.1037/0022-3514.90.5.751

Pettigrew, T. F., & Tropp, L. R. (2011). Does intergroup contact reduce prejudice? Recent meta-analytic findings. In *Reducing prejudice and discrimination* (pp. 103-124). Psychology Press.

Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2006). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations, 31*(4), 411-425. https://doi.org/10.1016/j.ijintrel.2006.11.003

Pettigrew, T. F., Tropp, L. R., Wagner, U., & Christ, O. (2011). Recent advances in intergroup contact theory. *International Journal of Intercultural Relations, 35*(3), 271-280. https://doi.org/10.1016/j.ijintrel.2011.03.001

Plieninger, H. (2017). Mountain or molehill? A simulation study on the impact of response styles. *Educational and Psychological Measurement*, *77*(1), 32-53. https://doi.org/10.1177/0013164416636655

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wieman, & S. Pingree (Eds.), *Advancing communication science: Merging mass and interpersonal processes* (pp. 110-134). Newbury Park, CA: Sage

Rafaeli, S. (2019). *Interacting with media: Para-social interaction and real interaction* (pp. 125-181). Routledge.

Rafaeli, S., & Ariel, Y. (2008). Online motivational factors: Incentives for participation and contribution in Wikipedia. In A. Barak (Ed.), *Psychological aspects of cyberspace: Theory, research, applications*. Cambridge University Press

Rafaeli, S., & Sudweeks, F. (1997). Networked interactivity. *Journal of Computer-Mediated Communication*, *2*(4), JCMC243. https://doi.org/10.1111/j.1083-6101.1997.tb00201.x

Ramirez Jr, A. (2007). The effect of anticipated future interaction and initial impression valence on relational communication in computer-mediated interaction. *Communication Studies*, *58*(1), 53-70. https://doi.org/10.1080/10510970601168699

Read, G. L. (2020). Processing Ambiguous Social Identity: Disclosure of Identity and Phenotypic Prototypicality Affect Processing and Evaluation of Persuasive Messages. *Journal of Communication*, *70*(5), 693-720. https://doi.org/10.1093/joc/jqaa024

Reed, E. S., & Gaines Jr, S. O. (1997). Not everybody is" different-from-me": Toward a historico-cultural account of prejudice. *Journal of Black Psychology*, *23*(3), 245-274. https://doi.org/10.1177/00957984970233008

Richter, A. W., West, M. A., Van Dick, R., & Dawson, J. F. (2006). Boundary spanners' identification, intergroup contact, and effective intergroup relations. *Academy of Management Journal*, 49(6), 1252-1269. https://doi.org/10.5465/amj.2006.23478720

Rios, K., & Wynn, A. N. (2016). Engaging with diversity: Framing multiculturalism as a learning opportunity reduces prejudice among high White American identifiers. *European Journal of Social Psychology*, *46* (7), 854-865. https://doi.org/10.1002/ejsp.2196

Robinson Jr, J. W., & Preston, J. D. (1976). Equal-status contact and modification of racial prejudice: A reexamination of the contact hypothesis. *Social Forces*, *54*(4), 911-924. https://doi.org/10.1093/sf/54.4.911

Robinson, J. L. (1980). Physical distance and racial attitudes: A further examination of the contact hypothesis. *Phylon (1960-), 41*(4), 325-332. https://doi.org/10.2307/274857

Roets, A., & Van Hiel, A. (2011). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *British Journal of Social Psychology*, *50*(1), 52-73. https://doi.org/10.1348/014466610X491567

Rosengren, K. E., & Windahl, S. (1972). Mass media consumption as a functional alternative. In D. McQuail (Ed.), *Sociology of mass communications: Selected readings* (pp. 119–134). Harmondsworth: Penguin.

Rosengren, K. E., Windahl, S., Hakansson, P. A., & Johnsson-Smaragdi, U. (1976). Adolescents' TV relations: Three scales. *Communication Research*, *3*(4), 347-366. https://doi.org/10.1177/009365027600300401

Rubin, A. M., Perse, E. M., & Powell, R. A. (1985). Loneliness, parasocial interaction, and local television news viewing. *Human Communication Research, 12*, 155–180. https://doi.org/10.1111/j.1468-2958.1985.tb00071.x

Rubin, R. B., & McHugh, M. P. (1987). Development of parasocial interaction relationships. *Journal of Broadcasting & Electronic Media, 31*(3), 279-292. https://doi.org/10.1080/08838158709386664

Rubin, R. B., Palmgreen, P., & Sypher, H. E. (2020). Parasocial interaction scale. In *Communication Research Measures* (pp. 273-277). Routledge.

Sanders, M. S. (2010). Making a good (bad) impression: Examining the cognitive processes of disposition theory to form a synthesized model of media character impression formation. *Communication Theory, 20*(2), 147-168. https://doi.org/10.1111/j.1468-2885.2010.01358.x

Savage, M. E., & Spence, P. R. (2014). Will you listen? An examination of parasocial interaction and credibility in radio. *Journal of Radio & Audio Media*, *21*(1), 3-19. https://doi.org/10.1080/19376529.2014.891214

Schemer, C., & Meltzer, C. E. (2020). The impact of negative parasocial and vicarious contact with refugees in the media on attitudes toward refugees. *Mass Communication and Society*, *23*(2), 230-248. https://doi.org/10.1080/15205436.2019.1692037

Schiappa, E., Gregg, P. B., & Hewes, D. E. (2005). The parasocial contact hypothesis. *Communication Monographs, 72*, 92-115. https://doi.org/10.1080/0363775052000342544

Schiappa, E., Gregg, P. B., & Hewes, D. E. (2006) Can one TV show make a difference? Will & Grace and the parasocial contact hypothesis. *Journal of Homosexuality, 51(*4), 15-37. https://doi.org/10.1300/J082v51n04_02

Schmid, H., & Klimmt, C. (2011). A magically nice guy: Parasocial relationships with Harry Potter across different cultures. *International Communication Gazette*, *73*(3), 252-269. https://doi.org/10.1177/1748048510393658

Schroeder, R., Steed, A., Axelsson, A. S., Heldal, I., Abelin, Å., Wideström, J., Nilsson, A., & Slater, M. (2001). Collaborating in networked immersive spaces: as good as being there together?. *Computers & Graphics*, *25*(5), 781-788. https://doi.org/10.1016/S0097-8493(01)00120-0

Schroeder, R., Steed, A., Axelsson, A. S., Heldal, I., Abelin, Å., Wideström, J., Nillson, A., & Slater, M. (2001). Collaborating in networked immersive spaces: as good as being there together?. *Computers & Graphics*, *25*(5), 781-788. https://doi.org/10.1016/S0097-8493(01)00120-0

Sherif, M. (1961). *Intergroup conflict and cooperation: The Robbers Cave experiment* (Vol. 10, pp. 150-198). Norman, OK: University Book Exchange.

Sigelman, L., & Welch, S. (1993). The contact hypothesis revisited: Black-white interaction and positive racial attitudes. *Social Forces*, *71*(3), 781-795. https://doi.org/10.1093/sf/71.3.781

Sinclair, L., & Kunda, Z. (1999). Reactions to a black professional: motivated inhibition and activation of conflicting stereotypes. *Journal of Personality and Social Psychology*, *77*(5), 885-904. https://doi.org/10.1037/0022-3514.77.5.885

Slater, M., Sadagic, A., Usoh, M., & Schroeder, R. (2000). Small-group behavior in a virtual and real environment: A comparative study. *Presence*, *9*(1), 37-51. https://doi.org/10.1162/105474600566600

Slater, M., Sadagic, A., Usoh, M., & Schroeder, R. (2000). Small-group behavior in a virtual and real environment: A comparative study. *Presence*, *9*(1), 37-51. https://doi.org/10.1162/105474600566600.

Song, W., & Fox, J. (2016). Playing for love in a romantic video game: Avatar identification, parasocial relationships, and Chinese women's romantic beliefs. *Mass Communication and Society, 19*(2), 197-215. https://doi.org/10.1080/15205436.2015.1077972

Stephan, W. G., & Stephan, C. W. (1984). The role of ignorance in intergroup relations. In N. Miller & M. B. Brewer (Eds.), *Groups in contact: The Psychology of Desegregation*, 229-255. New York: Academic Press.

Stern, C., & Rule, N. O. (2018). Physical androgyny and categorization difficulty shape political conservatives' attitudes toward transgender people. *Social Psychological and Personality Science*, *9*(1), 24-31. https://doi.org/10.1177/1948550617703172

Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of Communication*, *42*(4), 73-93. https://doi.org/10.1111/j.1460-2466.1992.tb00812.x

Stever, G. S., & Lawson, K. (2013). Twitter as a way for celebrities to communicate with fans: Implications for the study of parasocial interaction. *North American Journal of Psychology*, *15*(2), 339-354.

Sundar, S. S., Bellur, S., Oh, J., Jia, H., & Kim, H. S. (2016). Theoretical importance of contingency in human-computer interaction: effects of message interactivity on user engagement. *Communication Research, 43*(5), 595-625. https://doi.org/10.1177/0093650214534962

Skyes, T. (2018). Does Fallout 4's Codsworth know your name? Check this list. *PC Gamer*.

Swart, H., Hewstone, M., Christ, O., & Voci, A. (2011). Affective Mediators of Intergroup Contact: A Three-Wave Longitudinal Study in South Africa. *Journal of Personality and Social Psychology*, 101(6), 1221-1238. https://doi.org/10.1037/a0024450

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics (4th ed.).* Boston, MA: Allyn and Bacon

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Brooks/Cole Publishing Company

Tamborini, R., & Skalski, P. (2006). The role of presence in the experience of electronic games. In P. Vorderer, J. Bryant (Eds.), *Playing video games: Motives, responses and consequences* (pp. 225-240) Erlbaum.

Tanaka, A. (2010). Mapping out instruments, affordances, and mobiles. In *New Interfaces for Musical Expression*. Sydney, Australia

Thornicroft, G., Rose, D., Kassam, A., & Sartorius, N. (2007). Stigma: ignorance, prejudice or discrimination?. *The British Journal of Psychiatry*, *190*(3), 192-193. https://doi.org/10.1192/bjp.bp.106.025791

Tian, Q., & Hoffner, C. A. (2010). Parasocial interaction with liked, neutral, and disliked characters on a popular TV series. *Mass Communication and Society*, *13*(3), 250-269. https://doi.org/10.1080/15205430903296051

Titzmann, P. F., Brenick, A., & Silbereisen, R. K. (2015). Friendships fighting prejudice: A longitudinal perspective on adolescents' cross-group friendships with immigrants. *Journal of Youth and Adolescence*, *44*(6), 1318-1331. https://doi.org/10.1007/s10964-015-0256-6

Tsay-Vogel, M., & Schwartz, M. L. (2014). Theorizing parasocial interactions based on authenticity: The development of a media figure classification scheme. *Psychology of Popular Media Culture, 3(*2), 66-78. http://dx.doi.org/10.1037/a0034615

Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education*, 16(3), 131-150. https://doi.org/10.1207/S15389286AJDE1603_2

Tukachinsky, R., & Sangalang, A. (2016). The effect of relational and interactive aspects of parasocial experiences on attitudes and message resistance. *Communication Reports*, *29*(3), 175-188. https://doi.org/10.1080/08934215.2016.1148750

Tukachinsky, R., & Stever, G. (2019). Theorizing development of parasocial engagement. *Communication Theory*, *29*(3), 297-318. https://doi.org/10.1093/ct/qty032

Tukachinsky, R., & Tokunaga, R. S. (2013). 10 The effects of engagement with entertainment. *Annals of the International Communication Association*, *37*(1), 287-322. https://doi.org/10.1080/23808985.2013.11679153

Tukachinsky, R., Walter, N., & Saucier, C. J. (2020). Antecedents and effects of parasocial relationships: A meta-analysis. *Journal of Communication*, *70*(6), 868-894. https://doi.org/10.1093/joc/jqaa034

Tulk, S., Cumings, R., Zafar, T., & Wiese, E. (2018). Better know who you are starving with: Judging humanness in a multiplayer videogame. In *Proceedings of the Technology, Mind, and Society,* 44, 1-6. https://doi.org/10.1145/3183654.3183710

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Basil Blackwell

Turner, J. R. (1993). Interpersonal and psychological predictors of parasocial interaction with different television performers. *Communication Quarterly*, *41*(4), 443-453. https://doi.org/10.1080/01463379309369904

Velez, J. A., Mahood, C., Ewoldsen, D. R., & Moyer-Gusé, E. (2014). Ingroup versus outgroup conflict in the context of violent video game play: The effect of cooperation on increased helping and decreased aggression. *Communication Research*, *41*(5), 607-626. https://doi.org/10.1177/0093650212456202

Verkuyten, M., Thijs, J., & Bekhuis, H. (2010). Intergroup contact and ingroup reappraisal: Examining the deprovincialization thesis. *Social Psychology Quarterly*, *73*(4), 398-416. https://doi.org/10.1177/0190272510389015

Vezzali, L., Di Bernardo, G. A., Stathi, S., Visintin, E. P., & Hewstone, M. (2019). Using intercultural videos of direct contact to implement vicarious contact: A school-based

intervention that improves intergroup attitudes. *Group Processes & Intergroup Relations*, 22(7), 1059-1076. https://doi.org/10.1177/1368430218809885

Vezzali, L., Hewstone, M., Capozza, D., Giovannini, D., & Wölfer, R. (2014). Improving intergroup relations with extended and vicarious forms of indirect contact. *European Review of Social Psychology*, *25*(1), 314-389. https://doi.org/10.1080/10463283.2014.982948

Vezzali, L., Turner, R., Capozza, D., & Trifiletti, E. (2018). Does intergroup contact affect personality? A longitudinal study on the bidirectional relationship between intergroup contact and personality traits. *European Journal of Social Psychology*, *48*(2), 159-173. https://doi.org/10.1002/ejsp.2313

Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes & Intergroup Relations, 6*(1), 37-54. https://doi.org/10.1177/1368430203006001011

Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In M. L. Knapp & J. A. Daly (Eds.), Handbook of Interpersonal Communication (3rd ed., pp. 529–563). Thousand Oaks, CA: Sage

Wilder, D. A., & Thompson, J. E. (1980). Intergroup contact with independent manipulations on in-group and out-group interaction. *Journal of Personality and Social Psychology*, *38*(4), 589-603. https://doi.org/10.1037/0022-3514.38.4.589

Wittenbrink, B., Judd, C. M., & Park, B. (1997). Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology, 72(*2), 262-274. https://doi.org/10.1037/0022-3514.72.2.262

Wong, N. C., Lookadoo, K. L., & Nisbett, G. S. (2017). "I'm Demi and I have bipolar disorder": Effect of parasocial contact on reducing stigma toward people with bipolar disorder. *Communication Studies*, *68*(3), 314-333. https://doi.org/10.1080/10510974.2017.1331928

Woods, C. M. (2006). Careless responding to reverse-worded items: Implications for confirmatory factor analysis. *Journal of Psychopathology and Behavioral Assessment*, *28*(3), 186-191. https://doi.org/10.1007/s10862-005-9004-7

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, *73*(1), 73-90. https://doi.org/10.1037/0022-3514.73.1.73

Wu, G. (2005). The mediating role of perceived interactivity in the effect of actual interactivity on attitude toward the website. *Journal of Interactive advertising*, *5*(2), 29-39. https://doi.org/10.1080/15252019.2005.10722099

Wu, G., & Wu, G. (2006). Conceptualizing and measuring the perceived interactivity of websites. *Journal of Current Issues & Research in Advertising*, *28*, 87-104. https://doi.org/10.1080/10641734.2006.10505193

Zhou, S., Page-Gould, E., Aron, A., Moyer, A., & Hewstone, M. (2019). The extended contact hypothesis: A meta-analysis on 20 years of research. *Personality and Social Psychology Review*, *23*(2), 132-160. https://doi.org/10.1177/1088868318762647

Appendix A

Measures in the Pilot Study

Liking (Cohen, Myrick, & Hoffner, 2021) 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

Rate your agreement with the following statements

1. I like Ashe
2. I dislike Ashe (RC)

Addressing: Adapted fromHartmann & Goldhoorn (2011) 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

1. I felt addressed by Ashe
2. I felt Ashe was talking to me
3. Ashe was speaking to me, specifically

Adjustment: 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

1. I felt the main character adjusted their messaging based on my response.
2. Ashe chose her responses based on what I said
3. Ashe responded to me

Group Salience: Voci & Hewstone (2003), 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

1. How aware were you of differences between you and Ashe?
2. How much did gender matter when watching the video with Ashe?

Physical Attraction (McCroskey & McCroskey, 2006), 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Ashe is pretty

2. I don't like the way Ashe looks (RC)

3. Ashe is ugly (RC)

4. Ashe is nice looking

5. Ashe has an attractive face

6. Ashe is good looking

Realism: 7-point Likert, (*1 = Strongly disagree*; *7 = Strongly agree*)

1. This person seemed real

2. This person seemed fictional

Enjoyment & Appreciation (Oliver & Bartsch 2010): 7-point Likert, (*1 = Strongly disagree*;

***7 = Strongly agree*)**

Next, we want to know more about what you thought about the animated story. Please rate the following using a 1 (strongly disagree) to 7 (strongly agree) scale.

1. The animated story was fun to watch
2. I had a good time watching the animated story
3. The animated story was entertaining

Open-ended feedback

1. Do you have any other comments or feedback on the presentation of Ashe for the

   research team?

Appendix B
Measures After the Individuating Video (t1)

Psychological experience of Interactivity & Covariates: Contingency Subscale (Sundar et al., 2016), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Ashe's responses were dependent on my input.
2. Ashe took into account my messages.
3. Ashe's responses recounted the relatedness of my earlier inputs.
4. I felt that Ashe carefully registered my responses can gave feedback based on the information I entered.
5. I felt as if Ashe gave an exclusive response to my actions.
6. My interaction with Ashe felt like a continuous thread or loop.
7. Ashe's responses seemed interconnected with each other.
8. I felt as if the information Ashe gave me was well connected to my actions.
9. The messages I received from Ashe were based on my previous inputs.
10. The choice of messages sent by Ashe was meant to suit my preferences.
11. I felt Ashe considered my unique requests while presenting information.

Perceived Personalization: Inspired by Kalyanaraman & Sundar (2006), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Ashe's messages seemed to be designed for me specifically.

1. Ashe's messages targeted me as a unique individual.
2. Ashe's messages seemed to be designed for me specifically.
3. I felt like Ashe was talking to me.
4. It felt like Ashe was speaking to me, specifically.

Perceived other's copresence scale (Nowak & Biocca, 2003), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Ashe was intensely involved in our interaction
2. Ashe seemed to find our interaction stimulating
3. Ashe communicated coldness rather than warmth (RC)
4. Ashe created a sense of distance between us (RC)
5. Ashe seemed detached during our interaction (RC)
6. Ashe was unwilling to share personal information with me (RC)
7. Ashe made our conversation seem intimate
8. Ashe created a sense of closeness between us
9. Ashe seemed bored by our conversation (RC)
10. Ashe was interested in talking to me
11. Ashe showed enthusiasm when talking to me.

ePSI: (Hartmann & Goldhoorn, 2011), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

While watching the clip, I had the feeling that Ashe...

1. Was aware of me.
2. Knew I was there.
3. Knew I was aware of her.
4. Knew I paid attention to her.
5. Knew that I reacted to her.
6. Reacted to what I said or did.

Liking: (Cohen, Myrick, & Hoffner, 2021), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Rate your agreement with the following statements

1. I like Ashe.
2. I dislike Ashe.
3. I thought Ashe seems appealing as a person.
4. I thought Ashe seemed unappealing as a person.
5. I had a lot of affinity with Ashe.
6. I did not have much affinity with Ashe.

Optimal Contact Conditions (Macnab et al., 2012), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Equal Status

1. Ashe did not force demands on me during the experience.
2. Ashe demonstrated mutual respect during the experience.
3. Generally I felt appreciated during the experience.
4. Ashe was respectful during the experience.

Common Ground (Cooperation towards a common goal)

1. For both myself and the person I interacted with, there were common goals.
2. I was able to identify some common interest with the other person.
3. There was some common purpose we could both relate to.
4. There was an inter-dependence towards a common purpose.

Attention Checks

1. Select “Agree”

2. Select “Disagree”

Animal Care (Part of Distractor Task), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Animal welfare is important to me
2. I feel I can help improve animal welfare
3. I care about cats and dogs
4. I do not see why humans should care about animals (RC)
5. I would be willing to volunteer to help improve the lives of animals
6. There is no reason for people to care about animals (RC)

Appendix C

Measures After the Group Salient Video (t2)

Assessment of prejudice towards transgender women (ATTW; Billard, 2018), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Transgender women will never really be women.
2. Transgender women are not really women.
3. Transgender women are only able to look like men, but not be women.
4. Transgender women are unable to accept who they really are.
5. Transgender women are trying to be something they're not.
6. Transgender women are denying their DNA.
7. Transgender women cannot just "identify" as women.
8. Transgender women are unnatural.
9. Transgender women don't really understand waht it means to be a woman.
10. Transgender women are defying nature.
11. Transgender women only think they are women.
12. There is something unique about being a woman that transgender women can never experience.

Behavioral Intentions Towards Transgender People (Barbir, Vandervender & Cohn, 2017), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Negative Intent Subscale

1. I would not live in the same neighborhood as a trans person
2. I would stop talking to a friend if they were trans
3. I would excuse self if a trans person entered the room

4. I would refuse to engage in conversation with a trans person
5. I would not want to join a sports team with a member who identifies as trans
6. I would not sit next to a trans person on the bus
7. I would not take a class with a trans professor
8. I would stop hanging out with a friend if I found out they were trans
9. I would not use a locker room with someone who was trans
10. I would refuse to befriend a trans person
11. I would change topic if trans lifestyle came up

Positive Intent Subscale

12. Families should show support for children if they identify as trans
13. People should have the right to love whomever regardless of gender identity status
14. Important to teach children and students positive attitudes towards trans people
15. I would stick up for a trans person being bullied
16. I would vote for officials supporting marriage equality for trans people
17. I would vote for a trans politician
18. I would consider myself accepting of trans people
19. I would be comfortable being supervised by a trans person
20. I am comfortable being identified as an ally to trans people
21. I would hug someone who identifies as trans.

Perceived other's copresence scale (Nowak & Biocca, 2003), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Ashe was intensely involved in our itneraction
2. Ashe seemed to find our interaction stimulating

3. Ashe communicated coldness rather than warmth (RC)
4. Ashe created a sense of distance between us (RC)
5. Ashe seemed detached during our interaction (RC)
6. Ashe was unwilling to share personal information with me (RC)
7. Ashe made our conversation seem intimate
8. Ashe created a sense of closeness between us
9. Ashe seemed bored by our conversation (RC)
10. Ashe was interested in talking to me
11. *Ashe showed enthusiasm when talking to me.*

ePSI: (Hartmann & Goldhoorn, 2011), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

While watching the clip, I had the feeling that Ashe...

7. Was aware of me.
8. Knew I was there.
9. Knew I was aware of her.
10. Knew I paid attention to her.
11. Knew that I reacted to her.
12. Reacted to what I said or did.

Liking: (Cohen, Myrick, & Hoffner, 2021), 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Rate your agreement with the following statements

7. I like Ashe.
8. I dislike Ashe.

9. I thought Ashe seems appealing as a person.
10. I thought Ashe seemed unappealing as a person.
11. I had a lot of affinity with Ashe.
12. I did not have much affinity with Ashe.

Realism: 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

1. Ashe seemed real
2. Ashe seemed fictional

Enjoyment & Appreciation (Oliver & Bartsch 2010): 7-point Likert (*1 = Strongly disagree*; *7 = Strongly agree*)

Next, we want to know more about what you thought about the animated story. Please rate the following using a 1 (strongly disagree) to 7 (strongly agree) scale.

4. The animated story was fun to watch
5. I had a good time watching the animated story
6. The animated story was entertaining

Intergroup Contact with Transgender people (adapted from Bond & Compton, 2015), semantic differential, 5 points (*1 = None*, *5 = Many*)

How many family members, friends, or colleagues do you have in your life who identify as transgender?

Intergroup Anxiety (Stephan & Stephan, 1985): 7-point Likert (*1 = Not at all*; *7 = Very Likely*)

If you were the only cisgender (meaning non-transgender) individual and were interacting with transgender people, how would you feel compared with occasions when you are interacting with people who are not transgender?

1. More awkward
2. Less Awkward

3. Self-conscious
4. Happy
5. Accepted
6. Confident
7. Irritated
8. Impatient
9. Defensive
10. Suspicious
11. Careful
12. Certain

Perceived Outgroup Variability (Islam & Hewstone, 1993): 7-point Semantic Differential

Transgender people are…

1. Completely different from one another - - - - - Pretty much alike

Manipulation check

What was Ashe's gender identity?

1. Straight
2. Transgender
3. Bisexual

Attention Check

1. Select "Disagree"

Demographic Questions

What is your sex?

Male
Female
Other

What is your gender?

_____

What is your age?

_____

How do you identify your race (select one):

Asian (Eastern)
Asian (Southern)
Black/African descent
Hispanic/Latino
Indigenous/Native American
Middle Eastern (Arab)
Middle Eastern (Non-Arab)
Multiple Races
Pacific Islander
White/European descent
Other (please describe) _____

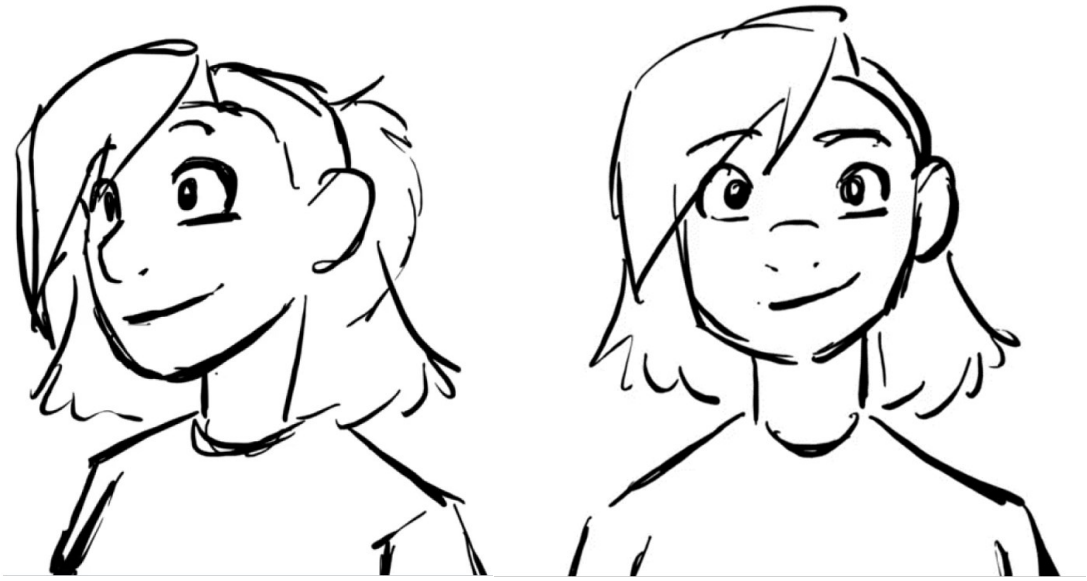
Open-ended feedback

1. Do you have any other comments or feedback on this study for the research team?

Appendix D

Example of Media Stimuli Appearance

Figure 15
Pictures of Ashe in the No Addressing and Addressing Conditions



Appendix E: CFA Table Results

Table 16

Chi Square for Final CFA

Model	NPAR	CMIN	DF	P	CMIN/DF
Default	123	1680.82	617	.000	2.72
Saturated	740	.000	0		
Independence	74	7102.20	666	.000	10.66

Table 17

RMSEA for Final CFA

Model	RMSEA	Lo 90	Hi 90	PClose
Default	.08	.08	.09	.000
Independence	.19	.19	.20	.000

Table 18

Baseline Comparisons for Final CFA

Model	NFI 1	RFI 1	IFI 2	TLI 2	CFI
Default	.76	.75	.84	.82	.84
Saturated	1.00		1.00		1.00
Independence	.00	.00	.00	.00	.00

Appendix F: SPSS Outputs for Hypotheses

Table 19

Two Way ANOVA Testing H1a, H2a, and H3a

Tests of Between-Subjects Effects

Dependent Variable: Presence1CFA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3.508[a]	3	1.169	1.498	.216	.017
Intercept	5726.957	1	5726.957	7336.609	<.001	.966
Contingency	3.203	1	3.203	4.104	.044	.016
Personalization	.073	1	.073	.093	.761	.000
Contingency * Personalization	.261	1	.261	.335	.563	.001
Error	201.395	258	.781			
Total	5936.220	262				
Corrected Total	204.903	261				

a. R Squared = .017 (Adjusted R Squared = .006)

Table 20

Two Way ANOVA Testing H1b, H2b, and H3b

Tests of Between-Subjects Effects

Dependent Variable: ePSI t1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	36.636[a]	3	12.212	5.294	.001	.058
Intercept	5248.958	1	5248.958	2275.336	<.001	.898
Contingency	35.658	1	35.658	15.457	<.001	.057
Personalization	.820	1	.820	.355	.552	.001
Contingency * Personalization	.250	1	.250	.108	.742	.000
Error	595.178	258	2.307			
Total	5890.917	262				
Corrected Total	631.815	261				

a. R Squared = .058 (Adjusted R Squared = .047)

Table 21

Two Way ANOVA Testing H4 and RQ1a

Tests of Between-Subjects Effects

Dependent Variable: Perceived Personalization

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	17.063[a]	3	5.688	2.537	.057	.029
Intercept	4827.970	1	4827.970	2153.604	<.001	.893
Contingency	12.151	1	12.151	5.420	.021	.021
Personalization	.757	1	.757	.338	.562	.001
Contingency * Personalization	4.403	1	4.403	1.964	.162	.008
Error	578.387	258	2.242			
Total	5430.375	262				
Corrected Total	595.450	261				

a. R Squared = .029 (Adjusted R Squared = .017)

Table 22

Two Way ANOVA Testing H5 and RQ1b

Tests of Between-Subjects Effects

Dependent Variable: Perceived Contingency

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	84.860[a]	3	28.287	16.083	<.001	.158
Intercept	5251.421	1	5251.421	2985.747	<.001	.920
Contingency	83.937	1	83.937	47.723	<.001	.156
Personalization	.001	1	.001	.000	.985	.000
Contingency * Personalization	1.210	1	1.210	.688	.408	.003
Error	453.778	258	1.759			
Total	5801.678	262				
Corrected Total	538.638	261				

a. R Squared = .158 (Adjusted R Squared = .148)

Table 23

Linear Regression Testing H7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.649[a]	.421	.416	.80908

a. Predictors: (Constant), Presence1CFA, ePSI t1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.239	2	61.620	94.133	<.001[b]
	Residual	169.543	259	.655		
	Total	292.782	261			

a. Dependent Variable: Liking t1

b. Predictors: (Constant), Presence1CFA, ePSI t1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.129	.294		3.836	<.001
	ePSI t1	.018	.032	.026	.547	.585
	Presence1CFA	.772	.057	.646	13.596	<.001

a. Dependent Variable: Liking t1

Table 24

Two Way ANOVA testing H8 and H9

Tests of Between-Subjects Effects

Dependent Variable: Liking t1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.466[a]	3	.155	.137	.938	.002
Intercept	6084.608	1	6084.608	5370.323	<.001	.954
Contingency	.430	1	.430	.380	.538	.001
Personalization	.026	1	.026	.023	.880	.000
Contingency * Personalization	.008	1	.008	.007	.931	.000
Error	292.316	258	1.133			
Total	6378.000	262				
Corrected Total	292.782	261				

a. R Squared = .002 (Adjusted R Squared = -.010)

Table 25

Hierarchical Regression testing H10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Presence1CFA, ePSI t1[b]	.	Enter
2	Liking t1[b]	.	Enter

a. Dependent Variable: Prejudicial Attitudes

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.462[a]	.214	.208	1.49562	.214	35.227	<.001
2	.466[b]	.217	.208	1.49545	.003	1.059	.304

a. Predictors: (Constant), Presence1CFA, ePSI t1

b. Predictors: (Constant), Presence1CFA, ePSI t1, Liking t1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.388	.544		11.736	<.001
	ePSI t1	.274	.060	.254	4.583	<.001
	Presence1CFA	-.780	.105	-.411	-7.435	<.001
2	(Constant)	6.522	.560		11.656	<.001
	ePSI t1	.276	.060	.256	4.616	<.001
	Presence1CFA	-.689	.137	-.363	-5.016	<.001
	Liking t1	-.118	.115	-.075	-1.029	.304

a. Dependent Variable: Prejudiceial Attitudes

Appendix G: Participant Screening Procedure

Figure 16

Participants Removed During Data Cleaning