Cisgenderism in Gender Attributions: The Ways in Which Social, Cognitive, and Individual Factors Predict Misgendering

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CISGENDERISM IN GENDER ATTRIBUTUIONS: THE WAYS IN WHICH SOCIAL, COGNITIVE, AND INDIVIDUAL FACTORS PREDICT MISGENDERING

by

ERICA JAYNE FRIEDMAN

A dissertation submitted to the Graduate Faculty in Social-Personality Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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Abstract

CISGENDERISM IN GENDER ATTRIBUTIONS: THE WAYS IN WHICH SOCIAL, COGNITIVE, AND INDIVIDUAL FACTORS PREDICT MISGENDERING

by

Erica Jayne Friedman

Advisor: Dr. Sarit A. Golub

The current program of research investigated the ways in which social representations of gender, cognitive processes, and individual factors can be integrated to predict "misgendering," an example of cisgenderism in which people are categorized as a gender with which they do not identify. I proposed an (In)consistency Processing Model of Gender Attribution in which perceivers make a gender attribution by interpreting the stereotype-(in)consistencies of a target's gender characteristics through either a biology- or identity-based schema. Five studies were conducted to test different aspects of this model, the first of which was a secondary data analysis on a sample of students from Hunter College who participated in the lab. Participants from the remaining studies participated online and were recruited from Amazon's Mechanical Turk.

Participants were more likely to reject a target's gender identity when the target's genitals and chromosomes were stereotype-inconsistent with the target's gender identity. Gender judgments were made quickly overall, but slower when target characteristics were stereotype-inconsistent. In other words, people processed gender consciously, rather than automatically, when characteristics were unexpected. Participants who knew transgender people were less likely to misgender and faster at making gender judgments, but only when targets had stereotype-inconsistent chromosomes suggesting limitations to the knowledge they gained from their contact with transgender people. Allies to transgender people and people with less gender essentialist beliefs were less likely to misgender people and did so with similar response times to
the rest of participants, suggesting they spent time consciously attempting to affirm targets
gender identity. People who were initially found to be less likely to misgender ("adjusters") were
more likely to misgender when their efforts to affirm target identity were constrained by a
distraction or by added stereotype-inconsistent information about the target.

Study findings imply that cisgenderism operates implicitly on the gender attribution
process. While some people may be able to temporarily focus their efforts on affirming people's
genders, these efforts are conditional and easily destabilized. These findings have important
practical implications for researchers, activists, service organizations, and governments invested
in the ethical recognition of people's own gender self-designations.
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Chapter 1:

Introduction

How is asking if someone is transgender or a man poking fun? She has the body of a women [sic] and the facial characteristics of a man. This is honestly the first fucking time I have heard/seen a woman with that amount of facial hair, but it would not be the first time I've seen a transgendered individual. I'm a fucking asshole because I relate things to what I know. --Kayoh44, 2012 (emphasis added)

This quote is one of many comments posted in September 2012 to an online forum called “Reddit” (reddit.com). An individual had posted a photo categorized under Reddit’s “funny” section with the title “I’m not sure what to conclude from this.” The photo was of a Sikh woman (information that was learned later) who was glancing at her iPhone while waiting in line. She wore a t-shirt and sweatpants, a Dastar,1 and she appeared to have breasts and facial hair. At first, some of the Reddit users commented on the photo in an attempt at explaining her gender. Some pondered if she was a woman or a man, while others wondered if she might be a person who is transgender. Additionally, a myriad of gender-based jokes were quipped and commenter's reactions suggested an overall “gender panic” (Cavanagh, 2010; Lorber, 2012, p. 598).

The woman pictured in the photo, Balpreet Kaur, found out from friends that her photo had been posted on Reddit. In response, she commented on the post and gave her own explanation of her gender presentation. In her explanation, she acknowledged that her facial hair made her gender appear “confusing,” but that her gender presentation was dictated through her baptized Sikh faith—not through her gender as a woman. She explained:

Yes, I'm a baptized Sikh woman with facial hair. Yes, I realize that my gender is often confused and I look different than most women. However, baptized Sikhs believe in the sacredness of this body - it is a gift that has been given to us by the Divine Being [which is genderless, actually] and, must keep it intact as a submission to the divine will. Just as a child doesn't reject the gift of his/her parents, Sikhs do not reject the body that has been given to us. (balpreetkaur, 2012; bracketed text are balpreetkaur’s remarks)

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1A turban traditionally worn by Sikh men.
Statement of the problem

Kaur’s experience helps illustrate the kinds of gender judgments that people make, the fact that these judgments can result in misgendering others, and the ways in which perceptions of gender can shift depending on perceivers’ interpretation of the stereotyped characteristics of the individual being judged. Misgendering has been posited as an example of cisgenderism; “the ideology that delegitimizes people's own designations of their genders and bodies” (Ansara, 2013) in favor of externally assigned designations of their genders and bodies. Misgendering occurs when people describe or refer to others as a gender different from the gender with which they have identified or designated for themselves. Whether people misgender deliberately or unintentionally, the effect is just the same: A gender has been designated for the person rather than allowing the person to designate it for themselves. Kaur identifies as a woman. She does not detail her own gender history, i.e., whether or not she has a gender independent from the one assigned to her at birth. But she does acknowledge, in her own words, that people may misgender her because her appearance contrasts with normative expectations of women in society.

Kaur’s public defense of her gender parallels some of the experiences of seeking gender affirmation for people who self-designate their genders independent from the gender assigned to them at birth. Both Kaur and many people (e.g., some transgender people) tell others their gender identity, or personal experience of their gender, in order to have their self-designated gender affirmed. Kaur corrects people’s confusion about her gender by stating that she is a woman. Similarly, people who self-designate their genders sometimes ask the people in their lives to

---

2 See Namaste (2000) for background supporting this concept and Ansara & Hegarty (2012) for another published description.
refer to them by their self-designated gender (e.g. woman) rather than the one they were given (e.g. male).

One intention of seeking gender affirmation is to motivate people to *adjust* their initial or previously held gender attribution (or lack thereof) to affirm a person’s self-designated gender. Gender acceptance and affirmation is argued by psychologists and activists to be necessary in an effort to promote the well-being of people with self-designated genders (Ansara & Hegarty, 2012; Hegarty, 2009; Menvielle & Tuerk, 2002; Mullen & Moane, 2013; Wilchins, 2004). For example, the American Psychological Association (APA, 2008) created guidelines encouraging the “legal and social recognition of transgender individuals consistent with their gender identity and expression” in an effort to resolve the “detrimental” effects of such discrimination on people’s “psychological, physical, social, and economic well-being” (APA, 2008). Nevertheless, social psychologists have found evidence that misgendering and other forms of cisgenderism continue to be enabled at multiple levels of society. Studies have shown specific evidence of cisgenderism at the institutional level, e.g., in scientific journals and medical settings (Ansara, 2010; 2012; Ansara & Hegarty, 2012; 2013) and interpersonal level, e.g. between lay individuals (Boenke, 2003; Cooper, 2000; Gamson, 1998; Israel, 2005; Namaste, 2000; Schilt & Westbrook, 2009; Serano, 2007).

In a review of peer-reviewed psychology journal articles, Ansara and Hegarty (2012) found cisgenderism in the form of pathologizing (e.g. suggesting that a child’s gender self-designation is abnormal or invalid) and misgendering (e.g. referring to a child as a boy when she has self-designated her gender as a girl). Ansara (2010; 2012) also found through patient testimonies that people who seek basic healthcare or gender affirmative hormone therapies and surgeries regularly experience cisgenderism in their interactions with health professionals. For
example, therapists and endocrinologists often turn patients down, in spite of their psychological “fitness,” for gender affirmative care, especially when patients were perceived by their doctors as not "adequately" demonstrating or presenting themselves as the gender in which they wanted to be affirmed (Ansara, 2010; 2012; Meyerowitz, 2002). In other words, people are denied basic care because doctors interpret their gender presentations in cisgenderist ways—in this case, as inconsistent with their gender self-designations. Patients seeking gender affirmative hormones and surgeries have many reasons for presenting their genders as they do, ranging from personal aesthetic or grooming preferences to the need to feel safe in a world that tends to be hostile toward those who do not pass as women or as men (Ansara, 2010; 2012).

Efforts to affirm a person’s self-designated gender are not always easily achieved even if a strong effort is made to adjust (Boenke, 2003; Cooper, 2000). Some psychologists have suggested that social knowledge about gender that is interpreted as irrefutable common sense (e.g., that men have penises and women have vaginas) makes it difficult to accept a person’s gender if they do not “pass” or are perceived to have characteristics that conflict with such knowledge (Garfinkel, 1967; Kessler & McKenna, 1978). Other psychologists have suggested that the difficulties around affirming another person’s self-designated gender may have to do with the cognitive effort it takes to revise the mental profile that someone has already created about another person (Bessenoff & Sherman, 2000; Devine, 1989; Israel, 2005). Still other psychologists suggest that individual differences, e.g., people’s beliefs about gender, are a reliable predictor of whether or not a person will outright reject the gender that people have designated for themselves (e.g. King, Winter, & Webster, 2009; Tee & Hegarty, 2006).

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3 Passing occurs when others make a judgment about a person’s gender that accords acceptance of that person’s self-designated gender. Passing is considered a privilege “…often taken for granted by people whose gender identities match their assigned genders, while being considered ‘deception’” for those who self-designate their genders (Ansara, 2010, footnote 7).
Research has not yet empirically examined the links between these social, cognitive, and individual factors and their mutual or combined potential as predictors of cisgenderist responses to people’s self-designated gender identities and expressions. Thus, the central question that motivated the current research was: *What is the role of social representations, cognitive processes, and individual traits, knowledge, motivations, and beliefs in lay people’s judgments about other people’s gender?* Augoustinos and Walker’s (1995) integration of social representations theory with various cognitive theories and constructs provides a useful framework for this area of empirical inquiry. First, I present an overview of this theoretical lens and then integrate its integration with social cognition. Later, I outline the program of research studies conducted, the results found, and the conclusions drawn.
Chapter 2:

Review of the Literature – Applying a Social representations Lens

For an instance of cisgenderism to occur, there first must be an ideological system of knowledge about gender in place that impacts our gender attributions. While social cognitive concepts and constructs (e.g., stereotypes) provide a basis for measuring the gender attribution process, social representations theory provides the lens through which a prerequisite, ideological system of knowledge can initially be identified and then interpreted. Social representations theory defines social cognitive constructs as "...the visible tip of an iceberg whose submerged portion comprises the very structures which enable the subject to construct meaningful attitudes and attributions" (Duveen & Lloyd, 2013, p. 175). These submerged structures in social representations theory resemble what ethnomethodologists refer to as our taken-for-granted or "common sense" understandings about the world (Garfinkel, 1967; Kessler & McKenna, 1978; Medin & Ortony, 1989; Speer, 2005). The common sense understandings are what people trust in, usually without question, to help them interpret the world around them. Thus, the current research refocuses cisgenderism as the delegitimization of people’s designations of their own genders by relying on social representations to make that designation for them.

Researchers have suggested that social representations theory can be used by social psychologists to reposition our interpretation of various social cognitive processes within the context of macro social systems (Augoustinos & Walker, 1995; Duveen & Lloyd, 2013; Rateau, Moliner, Guimelli, & Abric, 2012). Below, I build toward an analysis of cisgenderism as a knowledge system that can be measured through manipulating the variables that determine people's gender attributions. First, I provide an overview of Serge Moscovici’s (1981) social
representations theory and then I integrate his theory with relevant cognitive concepts and constructs in the sections that follow.

Overview

Social representations (Moscovici, 1981) are a useful concept for any study of people’s perceptions because they help define how people interpret or judge objects, events, and other people in their social and personal world. People gather information about their abstract surroundings through their senses (e.g., sight, hearing, etc.) and then give it meaning or a “representation” (Moscovici, 1981). Social representations are not the result of a passive process, according to Moscovici. They are the result of humans acting as agents to describe their social surroundings. The functional role they play is to enhance understanding and to communicate a complex array of social phenomena, e.g., gender. Moscovici emphasized the functional role of social representations between individuals and among cultures by explaining them as:

A system of values, ideas and practices with a twofold function; first, to establish an order which will enable individuals to orientate themselves in their material and social world and to master it; and secondly to enable communication to take place among the members of a community by providing them with a code for social exchange and a code for naming and classifying unambiguously the various aspects of their world and their individual and group history. (1973, p. xiii)

Moscovici’s description emphasizes the role of social representations in the facilitation of individual thought as well as social communication around information that would otherwise remain ambiguous and unfamiliar. Ambiguous or unfamiliar information is generated into social representations through two processes: anchoring and objectification. Anchoring represents the assimilation of unfamiliar information into existing knowledge structures and objectification represents the transformation of unfamiliar information into its own common sense reality independent of existing knowledge structures.
Anchoring

We anchor unfamiliar social phenomena in what we already know when we do not have enough information about it, or enough practice encountering it, to do otherwise. Augoustinos and Walker (1995) explain anchoring as a cognitive process by which people classify social phenomena that is unfamiliar to them by comparing them to culturally informed prototypes of different categories. Anchoring is similar to the cognitive process of "subgrouping" which explains the processes through which people sometimes mentally categorize individuals who disconfirm group stereotypes as similar to those who confirm group stereotypes (see Richards & Hewstone, 2001). For Moscovici (1984), this categorization process occurs at a group level such that all people within a culture agree, without question, that individuals are categorized in a particular way. Moscovici (1984) believed humans have a tendency toward categorizing aspects of culture—especially unfamiliar aspects—within existing categories in order to give objects shared meaning and shared understanding. Thus, anchoring has a positive role to play in facilitating the communication of social knowledge.

Simultaneously, anchoring can cause significant limitations in our interpretation of social phenomena and in our ability to communicate accurately about social phenomena. Philogène (2001) explains that anchoring occurs “through a socially created metasystem...that interferes with us beyond our control...[and] shapes what we think and how we act toward [social phenomena]” (p. 40). For example, scientists tend to explain new and unfamiliar phenomena in supposedly "objective" ways when they actually rely on metaphors or analogies anchored in old knowledge constructs to interpret their findings (see Hegarty & Pratto, 2010). When we anchor new objects in old understandings, we are shaping them in old terms that may no longer be relevant or may generalize them to the point that their unique qualities are made irrelevant. But
we discuss new information via the old because doing so facilitates order and understanding in our social interactions.

**Objectification**

The development of social representations independent of previously existing ones begins with individual acts of agency, but these representations then become established and serve functional purposes at the social level (Augoustinos & Walker, 1995). Hence, they are *social* representations and not *individual* representations. The difference is elucidated in discussions of exemplars in cognitive psychology in which people draw on their personal memories about certain objects and phenomena in order to make generalizations about new, unfamiliar stimuli (see Murphy, 2002). Exemplar theory emphasizes individual representations that are formed as a result of people's subjective experiences, while social representations theory emphasizes social representations that are formed as a result of an entire population's perpetuation of some object or phenomenon as *fact*. According to Moscovici (1981), when social representations—including ones that were once unfamiliar—become established in collective thought, they are processed as *common sense*. The transformation of certain social phenomena into common sense defines the *objectification* process. At the individual level, common sense understandings inculcate our thoughts, behaviors, and interactions. As individuals, we can actively contribute to the construction of social representations, but they simultaneously define and construct our own thinking and behaviors. This social psychological process of constructing and being constructed carries with it the risk that specific individuals’ interests and identities may be overlooked, misperceived, and underrepresented.

To further understand how the objectification process operates, Abric (2001) posited that social representations are structured around a central core of social knowledge. The central core
includes pieces of information that have already gone through objectification and are taken for

granted or considered irrefutable common sense. The core has two functions: (1) it gives

meaning and value to the representation; and (2) it helps organize links between its various

elements that help stabilize the representation across contexts. The latter function suggests that

representations have a certain amount of resistance to change. Without its stabilizing central

elements, a representation would be socially discounted or thrown out at the slightest challenge.

Indeed, Moscovici (1984) believed that social representations do eventually “die out” as their

origin becoming “forgotten” (p. 13). Abric (2001) suggested that it is easier to change peripheral

elements than the elements that make up a social representation’s central core.

Peripheral elements have adaptive qualities that allow the representation to evolve

through different socio-historical contexts. In other words, the central core of a social

representation can go unchallenged even if peripheral elements are changed by new and

unfamiliar social phenomena. Abric (2001) explained that peripheral elements can actually help

to defend the stability of the central core by (1) marginalizing the new phenomena; (2)

reinterpreting the new phenomena; or (3) rendering the new phenomena as exceptional.

Cognitive psychologists might refer to this as "subtyping" which explains instances in which the

mental categorization of people who disconfirm membership in a group category are interpreted

as exceptions to their superordinate category "rule" (see Hewstone, 1994, for a review).

Defending the stability of the central core, or supporting their membership in a superordinate

category, explains how objects, events, or people can be peripherally incorporated into a social

representation without actually changing or threatening its underlying common sense notions.
Objectification of expert knowledge

There are many authoritative sources from which social knowledge is transformed into common sense including from religion, science, and government, to name a few. To describe the effect of these authoritative sources on the objectification of knowledge, Moscovici (1981) posited how scientific knowledge is transformed (objectified) from the reified, scientific universe to the consensual, common sense universe. Scientists claim to identify and make sense of phenomena in the social world “impartially and submissively” and with “intellectual precision and empirical evidence” by “concealing [their personal] values and advantages” (Moscovici, 1984; p. 22). The view that this knowledge is objective gives people reason to accept it as fact. This knowledge is then reappropriated by the press so that it can be exposed to and understood by lay individuals (Augoustinos & Walker, 1995).

As an example, Moscovici and Hewstone (1983) posited that the theory of hemispheric specialization in the brain was made accessible to the public when neuroscience introduced the idea that the left brain is the rational side and the right brain is the emotional side (also see Fine, 2010; Jordan-Young, 2010). Lay people and the press went on to use the split brain view to make dualistic interpretations of a wide range of human and cultural behaviors, including the explanation of gender differences through the essentialist notion of a feminized or masculinized mind (Moscovici & Hewstone, 1983; Fine, 2010). Augoustinos and Walker (1995) sum up this transformative process by explaining that the “split brain view has proliferated so widely that it is now endowed with an objective reality and has become part of common-sense knowledge: a social representation” (p. 142).

Common-sense knowledge derived from science provides people with explanations of certain groups over others (e.g., woman/men) and allows differences between groups to “operate
invisibly and seem legitimate” (Hegarty & Bruckmüller, 2013, p. 178) because science is socially regarded as “objective.” The result is that people may subconsciously or consciously use expert knowledge to justify their judgments and, ultimately, their differential treatment of others.

Criticisms

Social representations are a compelling concept for understanding how social knowledge develops and is established in society, but the theory has faced criticism for its theoretical vagueness. Moscovici (1981) generally avoided specificity of sociological constructs in this theory because he believed it would undermine the complexity and diversity of the kinds of social representations that could be identified and studied. Moscovici (1981) maintained that vagueness, especially around the methods needed to study social representations, is beneficial to the discovery of the kinds of social phenomena that are central to societies. Especially when a research topic has been fairly unexplored, such as representations of gender, an approach that allows for a greater degree of discovery is particularly valuable. The social phenomena to be examined, and the specific cognitive constructs in which those social phenomena may be measured, are numerous. Researchers would need to decide which are the most beneficial to achieve the goals of their particular inquiry. Therefore, methodological flexibility is appropriate when studying collective thinking around diverse social phenomena. New ideas and methodological approaches used to uncover such phenomena should, therefore, be as varied as the societies and concepts upon which a study focuses. Inevitably, the theory has yielded a wide range of methodological approaches (Breakwell & Canter, 1993) from both positivist traditions, such as quantitative experiments (Doise, Clemence, and Lorenzi-Cioldi, 1993) and less conventionally positivist traditions, such as ethnography (Jodelet, 1991; Psaltis & Duveen, 2006).
An integrated solution

Augoustinos and Walker (1995) argue that the criticisms about the vagueness of social representations theory could be resolved through a deliberate cognitive interpretation of the theory. In turn, they suggest that criticisms about the lack of external validity of many cognitive approaches to the study of social phenomena could benefit from the sociological perspectives embedded in the social representations lens. In sum, the integration of these perspectives should help resolve some of the criticisms of both.

Moscovici’s (1963) theory easily supports the incorporation of a cognitive perspective. He saw the social and cognitive as intertwined, such as when he said that “…there is no break between the exterior universe and interior universe of the individual (or the group). The subject and the object are not fundamentally distinct” (Moscovici, 1969, p. 9). Moscovici was consistent in his view that people help to construct social representations at the societal level and are simultaneously impacted and influenced by them at the cognitive level in a mutually constitutive relationship. The measurable objects or constructs of people's individual cognitions (e.g., stereotypes) correspond to representations that are socially agreed upon and taken-for-granted by all people within social systems. Taking this a step further, Sampson (1981) argued for his fellow cognitive psychologists "...to test and challenge the structures and practices of larger society within which the various subjectivisms have developed" (p. 737) so that "...we would no longer spend our time describing what is, thereby participating in its production; our aims would be more transformative, designed to increase human welfare and freedom" (p. 741-742). Focusing on identifying the ideological structures of cisgenderism and determining how they operate at the social and individual levels may lead to conclusions that suggest the kind of transformation that Sampson suggested.
For Augoustinos and Walker (1995), this may be accomplished by integrating cognition with social representations theory. Other researchers have shared this perspective such as Rateau, Moliner, Guimelli, & Abric (2012) who reviewed the breadth of research into social representations and concluded that "...the fruit of [social cognitive] processes (categories, stereotypes, causal attributions) are to be found in the contents and the structure of social representations" (p. 492). Cognition is viewed as a defining feature of social representations theory such that social representations mediate our cognitive processes to give objects their meaning (Augoustinos & Walker, 1995). Augoustinos and Walker (1995) describe several cognitive theories and relate them to social representations. Following from their work and other's work, I propose interpretations of social schema theory and attribution theory in the next sections to help build a socio-cognitive methodological approach to studying social representations.

**Cognitive activation of social representations: Schemas**

Augoustinos and Walker (1995) defined schemas as mental constructs made up of knowledge derived from society. As in exemplar theory, schemas involve the use of our memory. We commit information that comes from our social interactions and our individual experiences to memory so that we may access it later on. Having access to schemas helps us to make interpretations about the stimuli we encounter and gain a sense of mutual understanding about our social world as we interact with others within it. Similar to anchoring processes under social representations theory, we organize stimuli into pre-existing categories for easy access and to help us encode stimuli at a later date. The categorization process is considered an integral component to social schema theory. Similar to anchoring in social representations theory,
categorization gives order to situations we encounter that are filled with a complex array of social stimuli.

Schema theory differs from social representations theory in that it has been used to posit a decontextualized, individualistic theory of information processing (Axelrod, 1973). Once outside information is incorporated into memory, cognitive constructivists—as opposed to social constructivists⁴—consider the process to be entirely cognitive and individual from that point on (Derry, 1996). A benefit of this approach is that the focus on individual cognition yields simple quantitative measurement, such as response time, confidence, and memory during categorization tasks. Measurements of these tasks provide insight into the extent to which a person has access to a schema to categorize stimuli and the content that defines the schema that gets applied. Past research has found that there is a positive relationship between shared features of stimuli and categorization confidence, and a negative relationship between shared features of stimuli and categorization response time (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003). As the features of new stimuli to a category increase in similarity, confidence increases and the time it takes to make the categorization decreases. Recall of a sequence of items will typically show content clusters in people’s categorical processing of the information from memory.

The cognitive approach to studying schemas has not yielded reliable results, however. Meta-analyses (Rojahn & Pettigrew, 1992; Stangor & McMillan, 1992) of social schema research have found inconsistencies across studies examining response time and memory. For example, experimental effects changed people's motivation to form either a complete impression of a target or a straightforward impression of a target, which altered the accuracy of people's recall of either incongruent or congruent information (see Stangor & McMillan, 1992, for a review). Augoustinos and Walker (1995) suggested that these experimentally-created

⁴ See Driver, Asoko, Leach, Mrtimer, and Scott (1994) for a review of the debate between these two groups.
inconsistencies across studies may correspond with the effects of social representations on information that is schematically processed outside the lab.

Taking this work in the direction of social representations theory through experimental manipulation would be consistent with the intellectual roots of social schema theory. Its roots are found in the work of Bartlett (1932) who emphasized social context rather than the idea that cognitive structures “originate” and “exist” in people’s heads, e.g., in their personal memories. Reflecting these roots, Murphy and Medin (1985) posited that people's cohesive categorization of objects are based in theories derived from world knowledges. Thus, schema research may benefit from going back to its roots and applying a deliberate sociological lens, such as social representations theory, to the methods and the interpretation of its study findings. The social representations lens takes the emphasis off of individuals as responsible for the schemas they have developed and, instead, emphasizes that the social environment influenced and helped to sustain those schemas. With this lens, some instances of misgendering may be interpreted as accidental products of circumstance, despite individuals' otherwise good intentions.

**Cognitive application of social representations: Attributions**

Much like schema theory, Augoustinos and Walker (1995) propose that attribution theory is another area of social-psychological study that would benefit from a social representations perspective. On the one hand, attribution theory focuses on the processes and conditions involved in assigning certain kinds of explanations to different events. On the other hand, social representations theory focuses on the social development and perpetuation of these explanations through social interactions. According to Augoustinos and Walker (1995), social representations theory can help identify the kinds of attributions people will make and under what conditions they will make them.
The study of attribution processes began with Fritz Heider (1958) who laid the groundwork for attribution theory. He states that the theory tests the individual or “…the person as the basic unit to be investigated” (p. 1). Heider posited a “common sense psychology” in which individuals are “naïve scientists” who intuitively organize objects, events, and behaviors into cause and effect relations. Similar to social representations theory, attribution theory highlights the human need to assign meanings and explanations to understand their social world. People are so inclined to organize their world that they will attribute cause and effect relations even where no causal relationship exists (Heider and Simmel, 1944). Heider (1958) theorized that causal relationships are more likely to be attributed to single causes rather than a complex array or combination of causes, they are more likely to be made when there is similarity and proximal closeness between two objects or events, and they are typically attributed to either dispositional, internal causes or situational, external causes.

Research on attributions exposed evidence that cognitive processes in the judgment of others often results in observable biases (for a full review, see Augoustinos & Walker, 1995). For example, Jones and Harris (1967) found the first empirical support for the “fundamental attribution error” in which people tend to overestimate dispositional causes and underestimate situational causes of other people’s behaviors. Biases, such as the fundamental attribution error, are conceptualized as biases because they deviate from the model that theorists, like Heider (1958), previously prescribed as the rational rules for making attributions. Traditional attribution theory proposes that people are cognitively capable of arriving at a logically formed judgment. In the case of the fundamental attribution error, people theoretically should consider dispositional and situational causes equally when judging other people’s behaviors, but this is not typically the case.
Social representations theory can help identify and interpret the cultural conditions that cause individuals to asymmetrically rely on certain cognitive interpretations of people's behaviors over other interpretations in their attributions. According to Hewstone (1989), social representations mediate the attribution process by providing the normative expectations that influence people’s cognitive judgments. For example, cross-cultural differences demonstrate that the fundamental attribution error has its roots in the individualism that defines much of American collective thought (Miller, 1984; Moscovici and Hewstone, 1983). Miller compared the attributions of Americans and Indian Hindus on various prosocial and deviant behaviors. He found that older Americans and Hindus differed significantly. Americans made more references to personality characteristics as the agent of behavior than did Hindus. Furthermore, an age analysis demonstrated that Americans become more fixated on dispositions in their causal attributions as they get older, while Hindu’s become more fixated on situations in their causal attributions as they get older. These findings suggest that such fixations in the attribution process are not innate; bias in attributions originates in the communication of widely held social and cultural meaning systems. People's fixations should, therefore, shift in correspondence with cultural shifts in attributions.

**Measuring the current state of social representations**

Despite the fact that attribution bias results from the apparent perpetuation of meaning systems in societies and the resistance of social representations’ central core elements, social representations are depicted as states, not traits, of societies. Moscovici (1988) proposed that all people have the ability to create and/or modify social representations. In other words, there is potential for misattributions or asymmetrical explanations of some people's behaviors over others to be challenged or avoided if opposing theories are realized.
Duveen and Lloyd (2013) framed social representations as a genetic or developmental theory that has a psychological impact on people at three different sociological time points: socio-genesis, onto-genesis, and micro-genesis. At each of these points, individuals have a chance to instigate modifications or adjustments to social representations. *Socio-genesis* is defined as the interactional exchange of social knowledge between social groups throughout society. *Onto-genesis* is defined as the interactional exchange of social knowledge to children and elaborated on by children. *Micro-genesis* is defined as the interactional exchange of social knowledge in everyday interactions and communications between individuals. Onto-genesis and socio-genesis develop out of the processes and experiences that take place at the micro-genetic level (Duveen & Rosa, 1992). In other words, without small interactions and influences that take place between individuals, social knowledge that is shared throughout society and communicated to children would not evolve. The exchange of new and unfamiliar knowledge challenges the current state of what we deem to be common sense.

Although an experiment conducted in a lab or lab-like setting changes the conditions of everyday environments (micro-genesis), an experiment may provide a window into everyday situations if it examines people’s individual processing of social phenomena that lead to misattributions. Opposing theories that are starting to be realized within a culture may be highlighted in people's individual processing of social phenomena. Some individuals may attempt to avoid misattributions if they can recognize it before acting. The ability to recognize misattributions and change them depends on the unique ability to hold two competing positions at a time. Multiple explanations of reality can be present and at odds with each other within the same culture or even the same person. For example, social representations theorists point to cognitive polyphasia, which is described as the capacity for individuals (and societies) to
maintain different kinds of knowledge despite their conflicting explanations of reality (Jovchelovitch, 2002; Voelklein & Howarth, 2005; Wagner, Duveen, Verma & Themel, 2000). However, the extent to which these explanations actually destabilize a social representation—i.e., the extent to which gender identity replaces biological characteristics (e.g., a beard) as a typical measure of an individual’s gender—will depend on different factors related to the context and the individual. Therefore, in the next section I describe which variables in the schema activation and attribution processes may be beneficial to measuring the current state of a social representation.

**Response time: Automaticity and control**

Earlier, I proposed response time as an example of a quantitative, cognitive measure used to discern the time it takes people to activate particular schematic knowledge in order to make a categorical attribution. People gain access to a schema through their awareness of and agreement with relevant knowledge related to a social representation. Social representations may be manipulated experimentally to determine their effects on cognitive processes such as the time it takes people to categorize certain stimuli. This would help develop an understanding about which social representations more strongly impact cognitive processes. For example, response time may only differ as a result of manipulations of stimuli that are more strongly associated with shared knowledge about those stimuli.

Awareness and agreement with that shared knowledge is established through a process that is comparable to the development of other sociological constructs in social psychology (Augoustinos & Walker, 1995). For instance, norms and stereotypes work similarly to schemas in that they are established at the cognitive level through a step-by-step social-interactive process. People gain exposure to specific categorization methods through interactions with others
in society. The perpetuation of those methods by others aids in its commitment to memory over time. Eventually, certain stimuli, individuals, or groups become viewed as more typical or representative of a particular category than others (Cherniak, 1984; Rosch, 1975; Mummebdey & Wenzel, 1999; Shafir, Smith, Osherson, 1990; Waldsuz, Mummmendey, Wenzel, & Weber, 2003). The features of new stimuli are compared to a prototype, or average of the category members, to determine if it fits that category. As a result, stimuli may be judged subconsciously as typical or atypical to their assumed category.

Kahneman and Miller (1986) posit a similar process in their theory of norms. They propose that when people judge stimuli they form a mental visualization or representation in the form of a prototype that influences their perceptions of those stimuli as typical or atypical. This visualization process is important to defining the features that people will reference as a basis for comparison to new and unfamiliar stimuli that they encounter. Kahneman and Miller (1986) suggest that visualized prototypes are informed by exemplars of stimuli and attributes that are commonly associated with the stimuli in society. If a person is making a judgment about the differences between two groups, social norms associated with each group inform people’s prototype visualizations of those groups when making intergroup judgments. Often, these visualizations produce asymmetric responses such that one group—usually the atypical group—becomes a greater focus of people’s cognitions. For example, McGill (1993) found that participants asymmetrically judged the performance of women and men on different tasks. Participants contrasted unsuccessful men with successful men, regardless of the task, and unsuccessful women with successful men on tasks typically performed by men and with

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5Augoustinos and Walker (1995) did not mention norm theory in their integrated approach probably because the majority of research on norm theory has been conducted in the last decade or so (5 years after publication of their book). They did, however describe norms and stereotypes as important constructs in the cognitive assessment of social representations.
successful women on tasks typically performed by women. In other words, the basis for comparison was asymmetric in favor of successful men, unless the task was woman-specific and women were performing it.

Through cognitive experiments like McGill's (1993), studies have demonstrated a tendency for people to be asymmetrical in their judgments of groups depending on which group was perceived as typical or atypical. When a social group has attributes that are processed as surprising or atypical, the group often becomes “the effect to be explained,” or the target person focused on that draws a greater need for explanation in comparison to groups with more typical, unsurprising features (Bruckmüller, Hegarty, & Abele, 2012; Hegarty, 2006; Hegarty & Buechel, 2006; Hegarty & Pratto, 2001; 2004; Miller, Taylor, & Buck, 1991; Pratto, Hegarty, & Korchmairos, 2007). Norm theory studies show one way of accomplishing Augoustinos and Walker's (1995) suggestion for the integration of macro-social understandings in the assessment of individualized thinking about others. They provide a cognitive interpretation for the occurrence of asymmetries in people's explanations at the micro-genetic level and tie these explanations to shared knowledge at the socio-genetic level. The results from studies based in norm theory give insight into the effect of shared knowledge on the attribution process.

When traits are perceived as typical or expected, researchers have suggested that people process this information at a fast-paced, automatic or implicit level (Bargh, 1989; Langer, 1989). The above list of studies on norms in intergroup processing supports this claim. Specifically, norm theory studies imply that people pay more attention to groups or persons with traits that are rendered atypical or that go against a person’s social schema than to groups or persons with traits that are typical or support a person’s social schema. Thus, determining which traits tend to be
relied on and seen as typical or atypical in the attribution process will be key to understanding the implicitness of certain traits as either defining or contracting people's social representations.

The processing of expected norms is so automatic that explanations for those norms simply “go without saying.” In fact, in naturalistic settings, people tend to explain situations that are perceived as unexpected or negative (Weiner, 1985). For example, people are more likely to make causal attributions for a sports team that wins a game if they do not originally expect that team to perform well (Lau & Russell, 1980). If an undefeated team wins another game, the lack of an explanation demonstrates that there is collective agreement about why an undefeated team won again. Moscovici might suggest that the social representation (expected norm) of the team is that it is a winning team. Therefore, the team’s victory is interpreted as common sense and it is processed automatically. Indeed, research in many related areas of social-psychology, e.g., schemas (Bem, 1981), causal attributions (Rumelhart, 1984), heuristics (Fiske & Taylor, 1991; Gilovich, Griffin, & Kahneman, 2002; Kahneman & Tversky, 1972) and norms (Bruckmüller, Hegarty, & Abele, 2012; Hegarty, 2006; Hegarty & Buechel, 2006; Hegarty & Pratto, 2001; 2004; Miller, Taylor, & Buck, 1991; Pratto, Hegarty, & Korchmairos, 2007), have all demonstrated that people make quick judgments when expectations related to social representations are met, but slow down to explain the unfamiliar or unexpected.

Shifts in attention can also take place simply as a result of categorical learning procedures (Kruschke, 2003). The frequency of encountering certain stimuli can cause shifts in attention when infrequent stimuli are presented. According to the inverse base-rate effect (Medin & Edelston, 1988), people tend to associate distinct features with infrequently encountered categories more often than they associate distinct features with frequently encountered categories. When we are exposed to a new target after being frequently exposed to an old target,
we focus attention on the new target and its unique features, while cognitively blocking out the features it shares with the old target (Kruschke, 2003). This occurs simply due to the frequency with which we were originally exposed to the old target; not just its unexpectedness.

**Individual differences: Outcomes and prejudice**

While some people may respond to unexpected stimuli by asymmetrically attending to them, others may not. To help explain this, Gilbert (1989) drew on past research to posit that people tend to make attributions sequentially. For example, when people favor situational explanations over dispositional explanations of other people’s behaviors, Gilbert suggests that people apply situational explanations second. People first “characterize” or apply dispositional causes to explain a person’s behaviors. Then, if they do it at all, they “correct” or apply situational causes to explain a person’s behaviors (Gilbert, 1989). For an example, recall that the default in American society is to respond by overestimating dispositional causes of behaviors (Jones and Harris, 1967). Characterization reflects the use of this default schema when analyzing other people’s behaviors. But then, some people will recognize a misattribution and make the decision to adjust their initial judgments. They actively choose to apply a different schema—one based in applying situational causes to explain people’s behaviors.

Although some researchers have contested the notion that this process is sequential by advocating for the idea that these processes occur simultaneously (see Chaiken & Trope, 1999), the point that correction occurs for some people is highlighted here. Research on stereotypes and prejudice explain how and why some people, under the right conditions, “correct” or adjust their misattributions while others do not (e.g., Bargh, 1999; Blair, Ma, & Lenton, 2001; Devine, 1989; Fiske, 1989; Gilbert & Hixon, 1991). Stereotypes have been proposed as having a life of their own as socially shared definitions or representations of certain types of persons or groups.
Stereotypes are rehearsed so much by all members of society that all people automatically associate stereotypes with their respective groups. At the same time as implicit measures demonstrating these stereotyped associations, attitude measures show that people vary with regard to their demonstration of prejudice toward certain groups (see Hoffman, Hawronski, Gschwendner, Le, & Schmitt, 2005, for a review). For example, Devine (1989) hypothesized that individual differences in levels of prejudice do not correlate with the activation of stereotypes, only with the subsequent application of them. Devine (1989) conducted several studies that supported the idea that stereotypes are separate from prejudice in cognitive processing of social representations. The primary result from these studies was that participants were similar in their explicit or implicit generation of stereotypes regardless of measures that categorized them as low in prejudice or high in prejudice.

Prejudice can be the result of an automatic response, but prejudice can also be avoided through effortful control. Research on gender stereotyping suggests that it takes more effort for people to adjust for prejudice than to simply allow automatic processes to take control of the judgments they make (Bessenoff & Sherman, 2000; Boenke, 2003; Cooper, 2000; Devine, 1989). Prejudice can result if cognitive resources taken to overcome prejudice are depleted. Research has found that low levels of prejudice correlate with making less sexist attributions, but this correlation disappears depending on the expense of cognitive resources at the time of making the attribution. One study found that cognitive busyness through a distraction task caused people to use sexist language who otherwise adjust for sexism in their attributions of women (Cralley & Ruscher, 2005). In this example, the distraction task was able to reveal the strength of social representations of women that cause people to use sexist language when describing people's gender in spite of their individual efforts to counteract it. The impact of manipulations of
attention on stereotyping has been supported in other research as well (e.g., Gilbert & Hixon, 1991; Harris & Perkins, 1995; Sherman, Macrae, Bodenhausen, 2011)

**Gender and social representations**

Up until this point, I have proposed different cognitive processes through the lens of social representations. I’ve proposed that the socio-genesis, or current state, of social knowledge can be interpreted through measuring the amount of time it takes to apply a schema (i.e., response time) and through individual differences in the actual outcomes of people’s attributions (i.e., the content of people's attributions). But in order to truly understand the benefits of these approaches, central and peripheral elements of social representations about gender need to be identified. I begin with a brief explanation of the terms that I use when discussing the topic of gender since my own perspectives and reasons for use of certain terms sometimes differ from other theorists’ perspectives and use of similar terms. Then, I consider the findings of past research to help delineate the relationship of gender-related traits and roles as well as physical and biological characteristics to social representations about gender. After that, I propose gender identity as a characteristic that is unique to current knowledge that may impact the social representations that people have about gender. The focus on new knowledge has implications that will help guide the next section on individual differences.

**Gender and sex**

Gender and sex are often viewed as distinct—gender being posited as the “psychological, social, and cultural aspects of maleness and femaleness” and sex being the “biological components of maleness and femaleness” (Kessler & McKenna, 1978, p. 7). In my own research, I assume that both gender and sex are social constructions. This configuration of gender is appropriate in keeping with a social representations lens because a widely held belief that people
take for granted is the idea that sex is biological and therefore concrete, immutable, and binary. Meanwhile, biological aspects of gender are just as diverse as the gender identities that are encountered in society (see Fausto-Sterling, 2000). This interpretation of gender aligns with the work of Kessler and McKenna (1978) who inform the direction of the studies conducted in this dissertation. Therefore, when I refer to gender in my own writing, I adopted their approach, which is the following:

We will use gender, rather than sex, even when referring to those aspects of being a woman (girl) or man (boy) that have traditionally been viewed as biological. This will serve to emphasize [my] position that the element of social construction is primary in all aspects of being female or male, particularly when the term we used seems awkward (e.g., gender chromosomes). The word ‘sex’ will be used only for references to reproductive and love-making activities and, at times, in reference to purely physical characteristics when explicating the position of someone else who uses this word. (Kessler & McKenna, 1978, p. 7)

**Peripheral elements: Traits and roles**

Bem (1981) explains that people develop a schema for categorizing their own genders through a social process called sex-typing. She defines sex-typing as “the process by which society transmutes male and female into masculine and feminine” (Bem, 1981, p. 354). According to Bem, in a mutually constitutive process, people dichotomously link women and men to traits and roles that are perceived as feminine or masculine, respectively. She developed the Bem Sex-Role Inventory (BSRI) to measure sex-typing of traits according to this dichotomy, but on a continuum in which androgyny would represent the mid-point of the scale. Spence (1981) has criticized Bem's scale for placing femininity and masculinity as endpoints that make it difficult to distinguish the midpoint as androgyny or as a refusal to type the target as masculine or feminine. She also suggested that the scale, as well as the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978), does not measure sex-typing or schematization, and instead measures gender identity as multifactorial. She found that most people identify their genders
according to traits that are gender-congruent while ignoring the fact that they do not have certain
gender-congruent traits and/or that they simultaneously possess gender-incongruent traits. But
how susceptible to change are people’s social representations of gender-related traits and roles
with regard to other people?

López-Sáez, Morales, and Lisbona (2008) measured schemas as stereotypes of others. They looked at the stereotyping of traits and roles at two different time intervals in Spain: 1993 and 2001. Classical trait-based dimensions were used which dichotomize expressive-communal traits (e.g., friendly) from instrumental-agentic traits (e.g., assertive). In 1993, these traits were assigned to women and men respectively. In 2001, they found that the content of Spanish people's schematic stereotyping were still dichotomous. However, they found that they seemed to change their perceptions of traits that are typically assigned to men such that women were assigned to instrumental-agentic traits just as often as men. López-Sáez, Morales, and Lisbona (2008) argued that this adjustment in trait-stereotyping explains the changes in role stereotyping that co-occurred in the general, worker population of Spain. During this period, gender-based stereotyping significantly decreased with regard to roles related to paid work outside the home. Thus, traits and roles were susceptible to changes over time just as peripheral elements are depicted as mutable under social representations theory.

Similar to social representations, Bem (1981) acknowledged that the application of gender schemas (sex-typing) as a universal process that has content that differentiates cross-culturally in accordance with a culture’s enforced social roles. Furthermore, Bem (1981) emphasized that gender schemas and their application to stimuli can evolve within a single culture. According to Bem (1981), sex-typing contributes to an “evolving gender schema” used “to evaluate and assimilate new information” as it is encountered throughout everyday life (p.
The evolution of social representations of gender is depicted through the changing attribution of traits and roles to certain genders in societies.

Like schema theory in general, Bem’s theory may benefit from a deliberate social representations lens. Instead, she draws from social learning theory to explain that individuals engage in sex-typing as a result of learning from adults and peers that there is a general social agreement that sex determines certain roles and behaviors are meant either for females or for males. Although social context is considered, this position neglects to account for how people come to accept the woman-man and femininity-masculinity dichotomies in the first place. Emphasizing this point is Bem’s (1981) persistence in using the term “sex-typing.” Spence's (1993) emphasis on the multiple factors that contribute to gender identity was an improvement on this. But Bem's (1981) use of the term “sex” rather than “gender” is an example of the cisgenderist characterization of “female” and “male” biology as immutable. Use of the term "sex" reproduces the social representation of a factual, essentialized, and binary gender regardless of her separate perspective on the fluidity of gender traits and roles. Use of the term sex while only questioning why people attach certain roles to sex suggests a personal acceptance of a common sense biological dichotomy between women and men. A social representations lens would question the assumption of this dichotomy as well as the ethnocentric assumption inherent in her definition of sex-typing since not all cultures treat gender as binary. For example, at least five gender categories are have been documented in Bugis society in Indonesia (Davies, 2007).

Next, I turn to research on gender attributions which takes into account the underlying importance of physical and biological characteristics in people’s cognitive processing of other people’s genders in the general population of Western/American society.

**Central elements: Physical and biological characteristics**
There have been a limited number of empirical studies that consider the social representations of gender involved in the attribution process. Gender attribution studies in social psychology that follow a traditional causal attributions model have been in the majority (see Alexander & Andersen, 1993; Deaux & Emswiller, 1974; Galper & Luck, 1980; Koch, Muller, & Sieverding, 2008; López-Sáez, Morales, and Lisbona, 2008). These studies helped reveal additional role and trait-based gender biases in the perceptions of women and men similar to Bem’s (1981) interpretation of “sex-typing.” Such studies challenge some of the peripheral, flexible elements of social representations around gender, but neglect to address the social representations that are central to forming people’s common sense notion of the woman-man dichotomy. Researchers who developed studies from the perspective of ethnomethodology were the first to ask questions that addressed the foundation upon which traits and roles are ultimately built, i.e., "essential" features such as physical and biological characteristics (Garfinkel, 1967; Kessler & McKenna, 1978; Medin & Ortony, 1989).

Garfinkel’s ethnomethodological perspective⁶ has much in common with social representations theory. Social representations theory and ethnomethodology are extremely similar in terms of how they describe the sharing of social knowledge. Both discuss communication (in various forms) as the means through which social knowledge is shared in societies (see Potter and Edwards, 1999). However, they differ in approach to doing research. Ethnomethodologists seek to identify the methods through which people make sense of their surroundings while social representations theorists seek to explain why those methods are there in the first place. Moscovici (2001) actually criticized ethnomethodology for focusing too much on identifying norms and explaining how they are used in communication practices without

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⁶Garfinkel developed his ethnomethodological perspective in critique of structuralist interpretations of people’s relationship to society (for review of this critique, see Heritage, 1984).
explaining their collective representation in social discourse. In turn, Potter and Edwards (1999) have criticized social representations theory for its disinterest in analyzing micro-interactions (e.g., through conversation analysis).

Regardless, researchers from both camps seem to similarly theorize that social knowledge transforms into common sense understandings that are then applied (and are able to be studied) at the individual level. In the opening to their gender attributions research, Kessler and McKenna (1978) propose that ethnomethodologists question taken-for-granted understandings about our world by seeking to identify the “objective facts” that people and societies create. Ethnomethodologists seek to uncover how people individually (re)produce the existence of these facts in their everyday lives in specified situations. Instead of calling them common sense understandings or the central core elements of social representations, Garfinkel called them “natural attitudes.” From this perspective, shared social knowledge about gender is viewed as a belief system. Ethnomethodologists do not suggest a wrongness or rightness to these beliefs; they are recognized as real to their believers. The motivation is to identify the methods used to perpetuate social knowledge as real to those who believe them.

Garfinkel identified gender as an example of a concept imbued with common sense notions. He mainly used case studies to derive several natural attitudes central to people’s knowledge about and (re)production of gender in Western culture (see Garfinkel, 1967). Kessler and McKenna (1978) paraphrased these into eight natural attitudes:

1. There are two, and only two, genders (female and male).
2. One’s gender is invariant. (If you are female/male, you always were female/male and you always will be female/male.)
3. Genitals are the essential sign of gender. (A female is a person with a vagina; a male is a person with a penis)
4. Any exceptions to two genders are not to be taken seriously. (They must be jokes, pathology, etc.)
5. There are no transfers from one gender to another except ceremonial ones (masquerades).
6. Everyone must be classified as a member of one gender or another. (There are no cases where gender is not attributed.)
7. The male/female dichotomy is a “natural” one. (Males and females exist independently of scientists’ criteria for male and female.)
8. Membership in one gender or another is “natural.” (Being female or male is not dependent on anyone’s deciding what you are.) (pp. 113-114, all parentheses and emphases are Kessler and McKenna’s remarks)

In line with other ethnomethodologists, Kessler and McKenna (1978) temporarily suspend a belief in the above “realities” in order to understand how those realities are constructed and reconstituted in people’s everyday lives.

Kessler and McKenna (1978) identified the process of assigning a gender to another person (“the gender attribution process”) as an everyday process that could answer the question: How do people construct their “natural attitudes” toward gender? Resembling the objectification of social representations, Kessler and McKenna suggest that social ideologies become so widely accepted and engrained in our understanding of the world that we do not even question them—they are common sense. They conceptualized the attribution process as a general process in which information is inferred and interpreted through “implicit rules” that involve “deep structure[s] of social interaction” (p. 18). In other words, attribution processes determine the central elements that form people’s social representations, and these elements act implicitly on cognitive processes to produce potentially prejudiced interpretations and judgments.

Kessler and McKenna’s (1978) studies sought to assess people’s attributions of the categories “female” and “male.” Information in the form of different characteristics about a hypothetical person was manipulated in ways that contradicted or aligned with stereotypical notions of “female” and “male.” This manipulation helped reveal which of the hypothetical person’s characteristics were relied on the most when people made a gender attribution. To
accomplish this, Kessler and McKenna (1978) conducted two major studies: The first was their “Ten Question Gender Game” and the second was their “Overlay study.”

For the Ten Question Gender Game, gender information was communicated through questions generated by the participant, which might include questions about gender role behaviors (e.g. having a 9-5 job), genitals (e.g. penis), “secondary” physical characteristics (e.g. breasts), gender expression through clothing (e.g. wearing skirts) and more. Their questions were then either confirmed or disconfirmed by the experimenter through randomized “yes” or “no” responses. The participants had to make a gender attribution and explain their answers after each time the experimenter gave a response. Based on participants' responses, Kessler and McKenna concluded that: (1) the gender attribution process involves assessing and giving meaning to information that is socially shared, and that information such as biological or physical characteristics, in particular genitals, are more important than other information (gender roles) in determining other people’s gender; (2) modifying Garfinkel’s (1967) claim that genitals are equally essential to both genders, knowledge about the presence of a penis provides more insight into a person’s gender than presence of a vagina; and (3) the first gender attribution made about someone else acts as a filter for explaining the rest of that person’s behaviors/characteristics.

The first two of these conclusions are compelling and I elaborate on them below. The last conclusion, regarding the finality in people’s decision when assigning a gender, may be the result of a limitation with the ten questions game. First, people received gender information sequentially. Second, participants were asked to make a dichotomous decision and commit to it verbally to the researcher after every answer was given to their questions. This format may have caused people to become defensive when they were then given subsequent and conflicting information. In natural settings, people may receive several pieces of information upfront or at
once. They may have the opportunity to assess several characteristics at once or pick and choose which ones to consider that they deem relevant, even if some of those characteristics must be imagined or assumed to exist (e.g., genitals beneath clothing). The next study they conducted overcame this limitation.

For the Overlay study, participants were asked to attribute “female” or “male” to 96 variations of the same line-drawing image of an individual by using overlays to create different combinations of hypothesized gender-related characteristics. Characteristics included: long/short hair, wide/narrow hips, breasts/flat chest, no visible body hair/body hair, vagina/penis, and "unisex" shirt/pants. When participants were expected to provide an even number of female attributions as male attributions to certain figures (e.g. a figure with genitals covered), they disproportionally used a male attribution. They applied a male attribution to figures more often regardless of whether the genital regions were covered or uncovered. People tended to view “female” characteristics as “male” more often than male characteristics were viewed as female. People had a tendency to perceive different figures as male regardless of other available information. For example, in figures with the genital region uncovered, the presence of a penis almost always (96 percent of the time) resulted in a male gender attribution, while presence of a vagina was not as definitive. The vagina needed the presence of two other characteristics (e.g., breasts and long hair) to come close to receiving a female attribution as often as the presence of a penis received a male attribution. Kessler and McKenna (1978) concluded, “Penis equals male but vagina does not equal female” (p. 151) in the attribution process.

Combined results from these studies revealed empirical support for Garfinkel’s (1967) suggestion that our society holds several “natural attitudes” toward gender. The findings suggest several important interpretations of the ways in which people think about, interpret, and make
judgments about other people’s genders. First, information is shared in the same sense that Moscovici described about social representations. Their findings demonstrate a collective agreement about genitals as the ultimate characteristics that constitute women and that constitute men. Social representations explains that genitals have been communicated by authorities and then perpetuated by members of society to establish them as common sense, irrefutable characteristics that define women and men. Although children early on in their development often believe that women and men have some essence that makes them women and men, children do not usually identify genitals as the essential characteristic (see McConaghy, 1979). Children eventually learn that genitals are significant through social communication over time (Gelman, 2004). Often, this communication is derived from authoritative sources, e.g., parents and doctors. When it comes to determining gender, the typical method used by authorities (e.g. doctors, scientists) in U.S. society and other Western societies is to identify and measure biological markers (e.g. genitals) to make a gender assignment in utero or at birth (see Fausto-Sterling, 2000). Therefore, a biologically deterministic schema for gender attribution that relies on similar markers is likely to be a core social representation that gets communicated at a young age and is easily accessed, supported, and perpetuated throughout people’s lives.

Kessler and McKenna (1978) concluded that gender attribution is genital attribution—even when genitals cannot be physically seen. Garfinkel (1967) proposes the cultural genital as the gender that people attribute to a person based on assumptions about their genitals because they cannot actually see a person’s genitals. In Kessler and McKenna’s (1978) studies, the corresponding genitals are assumed to be there even when a figure’s genital region is covered by clothing. After all, people cannot see a person’s genitals when they are making a gender attribution in everyday situations. People visualize or assume the genitals are there after
assessing other characteristics. According to the research on categorization processes outlined above, this visualization should be automatic (unless our judgments of a person's characteristics are inconsistent with our interpretation of other characteristics).

Findings also specified that gender attribution is not only genital attribution—but penis attribution, specifically. The male cultural genital (penis) was assigned more often than the female cultural genital (vagina). For Kessler and McKenna (1978), these results emphasized androcentrism in society. Androcentrism involves the tendency to view maleness as normative and femaleness as representative of differences in gender. Males are often equated with humanity and seen as the default gender (see Bem, 1981). Recent research has demonstrated that androcentrism has not dissipated in nearly thirty-five years since Kessler and McKenna’s (1978) studies (Braun & Kitzinger, 2001; Hegarty & Buechel, 2006). Thus, genitals appear to be a core element of social representations of gender that result in misattributions of people's gender.

A recent study by Speer (2005) demonstrates further support that the cultural genital is a persistent, core element of social representations of women and men in contemporary society. Speer (2005) demonstrated people’s propensity to make binary gender attributions that reflect Kessler and McKenna’s (1978) cultural genital finding. With its roots in ethnomethodology, Speer’s (2005) study applied conversation analysis to transcripts of individuals in focus groups who were asked to determine what was happening in different photographs held up by the experimenter. Through this level of analysis, nearly thirty years after Kessler and McKenna’s (1978) work, people still tended to take cues from the context of the photograph or the external characteristics of the target person depicted in the photographs and then applied binary (female/male) notions of gender to identify their genders (Speer, 2005). Furthermore, they did so without the constraint of a split gender choice when making those attributions. Most of the time,
participants implicitly attributed gender to the person or people in the picture by discussing the scene with binary gender pronouns like “she” or “him.” Speer (2005) noted that participants had difficulty identifying the gender of the pictured person and would attempt to come up with an explanation for their gender; a reflection of past research findings that demonstrated people's asymmetric explanatory focus on the unexpected or atypical group (e.g., Hegarty & Pratto, 2001). When trying to identify the gender of the pictured person, participants tended to rationalize their way to assigning a female or male gender label by taking into account different contextual and target cues. In other words, people had methods or ways of producing a dual gender interpretation of the photographs, even if people perceived the photographs as depicting gender in an ambiguous or atypical way. Findings such as these suggest that the cultural genital norm is still a central component of social representations about gender today.

**Methodological concerns and considerations**

One observation of Kessler and McKenna’s (1978) studies is that—similar to the binary gender anchors in Bem's sex-typing scale—their experimental design may have reinforced a gender dichotomy through the instructions given to participants. For the Ten Questions Gender Game, Kessler and McKenna (1978) told people to decide between the binary gender categories, female and male. Similarly, in the Overlay study they asked people to determine if a female or male was pictured. As a result, people could only assign people as one gender or the other. This experimental constraint limits the study to pointing out binary miscalculations, rather than miscalculations that derive from making an ambiguous calculation about other people’s genders. After all, judging people as neither a woman nor a man or less of a woman or less of a man because they are perceived to be inauthentic in their womanness or manness is equally as cisgenderist as making a binary gender attribution that opposes a person’s gender identity. All of
these gender judgments similarly delegitimize people’s self-designated genders (see Ansara, 2010).

The dichotomous choices that Kessler and McKenna (1978) implemented were, however, appropriate to their intentions with the study, however. They intended for their approach to demonstrate “…what transexualism can illuminate about the day-to-day social construction of gender” (p. 112). Here, transexualism refers to characteristics that contradict stereotypical notions of “female” and “male.” Thus, Kessler and McKenna (1978) were interested in how contradicting characteristics cause people to rely on certain characteristics over others to make a determination that supports the gender dichotomy. They did not suggest that the contradicting characteristics might cause people to deny others a position in that dichotomy altogether. Furthermore, Speer's (2005) study suggested that people tend to rationalize their way to a dichotomous gender attribution regardless.

Nevertheless, the experimenter reinforcement of a two-category choice may limit the ability to identify when perceivers' social knowledge about gender has developed to challenge this dichotomy. Participants in the Ten Questions Gender Game broke the “rules” twice by spontaneously suggesting the gender labels “hermaphrodite” and “transsexual.” This suggests that at least some people at the time of their studies (the 1970s) had knowledge of gendered groups that may be depicted as “outside” the woman-man dichotomy. When people have the opportunity to assign non-binary categories, they may essentialize the target person as distinct from the traditional binary similar to how they distinguish between groups in research on subgrouping (see Richards & Hewstone, 2001). While being essentialized as a non-binary gender is unproblematic for people who identify with that category, this form of misgendering can be
problematic for people who do identify as either a woman or a man. In the next section, I consider the impact of this differentiation.

The special case of gender identity in attributions

Gender identity is a special Western concept and characteristic that, like the cultural genital, is difficult to perceive from the outside. Gender identity has to do with the feelings that people have about their own gender—information that is difficult for a perceiver to know for certain without asking the individual (Kessler & McKenna, 1978). The concept of gender identity is sometimes defined in such a way that it re-essentializes gender as a biological, innate, and immutable characteristic that is “between the ears” rather than “between the legs” (see Laqueur, 1990). This definition is commonly used among psychologists and other authoritative individuals who are invested in distinguishing between “sex” and “gender” (e.g., Diamond, 2002; Unger, 1979), potentially making it into a new kind of social representation about gender particularly in the discourse of American/Western society.7 Many individuals experience their gender identity as distinct from their physical sex and want to be perceived only as the gender that corresponds with their identity (see Prosser, 1998). For example, Sandy Stone (1991) examined the autobiographies of women with a self-designated gender that was independent from the male gender assigned to them at birth and found that they persisted in their belief in the existence of two, distinct, biological genders.8

However, as discussed earlier in this introduction, not all people are perceived as their gender identity to others. Recall Kaur’s experience as a self-identified woman: she acknowledged that the presence of her beard was perceived as inconsistent with normative

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7 Gender itself, including gender identity, has been argued to be an ethnocentric concept that does not translate to other cultures. See Oyèwùmí (1997) for a discussion about inapplicability of gender to some African societies.  
8 For an example of an “intersex” person’s position reflecting this same perspective, see Garfinkel’s (1967) case of “Agnes.”
expectations of women, a perception that caused confusion about her gender. Misattributions having to do with a discrepancy between a perceiver’s gender attribution and a target person’s gender identity can arise when people make assumptions about a person’s gender based on their perceptions of external information. Since gender identity is an internal characteristic, people must be told or they must ask in order to know it. Even the very idea that gender *identity* qualifies gender suggests that gender identity and a person's gender are purportedly two separate concepts with two potentially different values. For instance, people rely on social representations about gender that do not include asking someone their own perceptions of their gender as the foremost method for making a gender attribution. People attempt to identify other people’s genders using other characteristics, e.g., their voices, their body hair, their genitals, etc. As I have described, reliance on these other characteristics can result in misgendering. Therefore, cisgenderism includes instances of all judgments or positions that deny the legitimacy of a person’s own gender self-designation, such as denying their gender self-designation if they were not born with the gender identity they designate for themselves, if they did not present “cross-sex” behaviors in childhood, or if they do not have brain or genetic characteristics that stereotypically align with their designated gender. Although some individuals may personally interpret their gender identity or gender experience as innate, moving beyond cisgenderism involves granting people the right to designate their gender for themselves regardless of its cause or origin (see Ansara, 2010). Again, *cisgenderism is the delegitimization of people’s designations of their own genders by relying on social representations to make that designation for them*.

According to the socio-genesis of social representations, social practices and norms may eventually change as micro-genetic interactions such as those with Kaur continue to challenge normative expectations of gender. Increases in attention to individuals like Kaur may contribute
to more people adopting social practices that lead to a full cultural shift, e.g., a shift toward a common practice of asking people their gender identities before authoritatively assigning a gender to them. Information about the amount that the media has covered stories that include people with self-designated genders is limited. However, one magazine article claims that from 2006 to 2007 news coverage of people with self-designated genders (e.g., “transgender people”) and their experiences nearly doubled (Hollar, 2007). Recently, Barney's began a campaign featuring transgender models with an over 30-minute documentary-style video about their stories affirming their genders socially, medically and administratively. Barney's collaborated with the National Center for Transgender Equality to produce the campaign "... with hopes to help break stereotypes and build social acceptance of the transgender community" (Brothers, Sisters, Sons & Daughters, 2014). With such coverage about people with self-designated genders in the media, gender identity may be starting to be a characteristic that people want to know about and may factor into their judgments before they take people’s appearance, the sound of their voice, or other characteristics at face value and jump to conclusions about their genders.

Similarly, increasing media coverage and emphasis on the importance of genetics and chromosomes in health and science may suggest that characteristics such as chromosomes are also becoming an important consideration in the profile of determining people's gender (Hansen, 2006). Future studies may consider including gender identity and chromosomes as elements that inform the gender attribution process. Pairing these elements with greater flexibility in the gender choices that perceivers can attribute would provide insight into the socio-genesis of social representations about gender and their correlation with gender misattributions. With information about personal identity, genitals, and chromosomes provided, categorizing people as anything
other than people’s personal gender identities would suggest a cognitive bias stemming from their social representations.

**Individual differences in attribution processes and social representations**

Challenges to normative expectations related to gender (Kessler & McKenna, 1978; Speer, 2005) may result in individual differences in the attributions that people make—especially when one of those challenges has to do with information that is provided about a person’s gender identity. Recall Gilbert’s (1989) description of the sequential attribution process. People first automatically make dispositional attributions of other’s behavior because these come from American social representations regarding individualism. Then, some people correct for these misattributions by considering the situational attributions of other’s behavior. I predict that gender attributions will be made in a similar step-by-step process. But what are the individual differences that predict people’s propensity to engage in the second, “correcting” step of this process?

Moscovici (1963) initially used the construct of individual *attitudes* to account for the structure of social representations. He posited that representations of objects simultaneously constitute people’s attitudes toward those objects. Attitudes, while seen by many social psychologists as individualized, mental constructs (e.g., Allport, 1935; Eagly & Chaiken, 1993), are depicted here as social because they are linked to social values (Jaspars & Fraser, 1984). In other words, an assessment of attitudes toward an object provides a window to understanding the social representation of that object. Subsequently, Doise (1989) once explained that attitudes depend on people’s individual exposure to particular social knowledge. Thus, the two overarching individual measures that may predict differences in people’s gender attribution outcomes are: (1) exposure to social information that challenges common sense understandings
of gender, i.e., when the reliability of individuals’ genital attribution practices are challenged; and (2) attitude measures that, in the past, have been found to correlate with less prejudice toward persons with self-designated genders and the groups with which some of these persons identify, e.g., transgender persons. Below, I outline the research that suggests why these two overarching individual measures may relate to differences in the outcome of misgendering.

**Quantity and quality of contact with perceived out-groups**

Contact with particular groups with which people do not share membership ("outgroups") and certain personality traits that facilitate the frequency and quality of such contact may predict some of the variance related to gender misattribution. This relationship was first examined by sociologist Robin Williams, Jr. (1947), who published a review of ingroup relations research that primarily focused on racial and ethnic prejudice. His findings confirmed researchers’ and practitioners’ early speculations that contact between groups has a positive effect on people’s attitudes toward each other. Williams’ findings provided the needed support for Gordon Allport (1954/1979) to introduce the *intergroup contact theory* to the field of social psychology. He proposed that prejudice between groups is reduced when several contextual factors are met: (1) equal status between groups; (2) common goals between groups; (3) intergroup cooperation; and (4) cultural or authoritative support.

Many studies were subsequently conducted to examine the intergroup contact theory. Reviews of this literature have shown conflicting results. Some reviewers concluded that increases in prejudice among study participants may not extrapolate to entire outgroups (Forbes, 1997; McClendon, 1974), that increases in prejudice rely on the nature of the relationship between individuals (e.g., friends v. acquaintances) from each group (Riordan, 1978), and that many other contextual factors must be present for contact to reduce prejudice (Stephan, 1987).
As a result, some social psychologists have concluded that “the initial hopes of contact theorists have failed to materialize” (Hopkins, Reicher, and Levine, 1997, p. 306).

Nevertheless, these past reviews have been criticized for missing the inclusion of important publications in their analyses, for lacking strict rules for inclusion of certain publications over others, and for the inclusion of research that was not quantitative (see Pettigrew & Tropp, 2006). Pettigrew and Tropp (2006) suggested that simple exposure to other groups increases people’s overall liking of them. They hypothesized that the other factors cited by Allport, such as having equal status or common goals, simply help facilitate the effect already set in motion by exposure alone. Pettigrew and Tropp (2006) conducted a meta-analysis that strictly focused on studies that examined intergroup contact as the independent variable and prejudice as the dependent variable, studies that looked at contact between specific social groups rather than interpersonal groups, and studies that measured direct intergroup interaction that took place rather than the proximity of two groups. The results of their rigorous meta-analysis clearly suggested that intergroup contact reduces prejudice between groups.

Some social psychologists debate that contact theory overlooks actual experiences of contact in favor of ideal experiences of contact (Dixon, Durrheim, & Tredoux, 2005). Thus, a reorientation in the design of research on the contact hypothesis has been suggested. For example, focusing on individuals' own interpretations of the contact they have with outgroups may be important to isolating contact with outgroups that is interpreted as positive rather than negative. A focus on people's own interpretations—e.g., whether or not those contacts are perceived as friends—may accomplish the goal of assessing people's actual experiences with outgroups. Recent research also suggests the importance of flipping the coin to examine the impact of contact on the historically disadvantaged group. In some social contexts, contact may
reduce disadvantaged groups motivation to fight for equality because of the positive relationships they develop with advantaged groups (see Durrheim, Jacobs, Dixon, 2013).

Some researchers have become interested in studying the impact of personality traits on the contact-prejudice effect. Who is more likely to have contact with outgroups in the first place? Who is more likely to have contact that results in positive experiences that strengthen the contact-prejudice effect? Jackson and Poulsen (2005) proposed a mediation model where the Big Five Personality traits were hypothesized to influence the contact-prejudice effect. For instance, the authors drew on research showing that people higher on the openness to experience trait are more likely to seek out and enjoy new experiences (see McCrae & Costa, 1997). Thus, people who are more open to experience are more likely to initiate contact with outgroups and come away from that contact with positive feelings about the outgroups. The authors also drew on past research showing that people higher on the agreeableness trait tend to have more positive interpersonal relations with people from friends to strangers suggesting that agreeableness also facilitates positive outcomes of contact with outgroups (see Asendorpf & Wilpers, 1998). Indeed their model was supported in a study measuring the mediation of personality traits between contact and prejudice toward Asian and African Americans. Results suggested that openness and agreeableness mediate the contact-prejudice effect such that greater openness increases frequency of contact and both openness and agreeableness raise the quality of the contact, resulting in an overall reduction in negative attitudes toward Asian and African Americans.

Although a peer-reviewed analysis has not yet published clear evidence, increases in media coverage (Hollar, 2007) and advertising campaigns like Barney's recent one (Brothers, Sisters, Sons & Daughters, 2014) suggest people may be becoming more aware of concepts like gender identity as an important characteristic to defining people’s genders. One hypothesis
derived from this is that individuals, who might refer to themselves as "allies," may be becoming more supportive of certain groups, e.g., transgender people, who experience disproportionate amounts of gender-related prejudice in society (Stone, 2009; Stotzer, 2009). In primarily qualitative studies, ally status was found to be commensurate with positive attitudes and less prejudice toward the group to which they are allied. In alignment with contact theory, ally status has also been found to be a product of prior exposure to individuals within the allied group (Stone, 2009; Stotzer, 2009). Therefore, ally status to groups, e.g., transgender people, may contribute to fewer gender misattributions. Examining ally status may be a promising area to explore in light of recent concerns among researchers about the reduction in motivations to fight for inequality among disadvantaged groups as a result of contact with advantaged groups (see Durrheim, Jacobs, & Dixon, 2013). In contrast, the title "ally" is often given because of cause-related support and resources that allies provide to fighting equality (see Stone, 2009).

The above research on prejudice demonstrates that contact and ally status with transgender people as well as the personality traits that facilitate the frequency and quality of such contact may be related to gender misattributions. People’s exposure to transgender people may inform them about concepts, such as gender identity, that may impact the ways in which people view other people’s genders. Thus, contact with transgender people may contribute to less gender misattributions.

**The impact of attitudes and beliefs about gender on cisgenderist responses**

Cisgenderism defines institutionalized assumptions that cause gender misattributions and delegitimizations that affect a large number of individuals and social groups. There are no existing attitude scales or measures of prejudice that represent cisgenderist attitudes in the same way that concepts such as sexism, heterosexism, or transphobia have previously been measured.
Therefore, I turn to existing measures that may invoke some of the underlying assumptions that promote cisgenderist outcomes. Recall that the core of cisgenderism is denying others the right to determine their own gender. Instead of allowing people the authority to define their genders however they see fit, people tend to impose gender on others based on their own preconceived, social representations of what gender is supposed to look like.

Drawing on what Kessler and McKenna (1978) found, the cultural genital is a biology-based social representation of gender that seems to be the core element used to inform people’s perceptions of a target person’s gender. In their study conducted in the United Kingdom, Tee and Hegarty (2006) created a Biological Gender Beliefs scale, a measure developed out of a scale measuring "beliefs about trans people," which found that higher endorsement in the belief that gender is determined by biology predicted more negative attitudes toward trans people’s rights. They also measured people’s Beliefs about Gender, a scale that was originally developed to assess for attitudes that correspond with Garfinkel’s (1967) natural attitudes about gender. Although this measure was not found to significantly correlate with attitudes toward trans people’s rights, the scale is new and has not been tested widely enough to conclude whether or not higher endorsement of these beliefs increase people's tendency to misgender. Furthermore, no study to date has determined the extent to which the endorsement of either the Biological Gender Beliefs scale or the Beliefs about Gender scale impact the relationship between stereotype-inconsistencies in a target person’s gender characteristics and a perceiver’s rejection of the target person’s gender identity.

Biology-based social representations may be measured by the concept of essentialism as well. Allport (1954/1979) proposed that prejudice results from the perception that others—who often form certain out-groups—share dispositional or essential characteristics. Essentialism
involves the tendency to explain outward appearances or behaviors as indicative of underlying, stable characteristics (Haslam, Rothschild, & Ernst, 2000; Heyman & Dweck, 1998). Some psychologists have pointed out the significance of essentialist beliefs about gender in social perception by identifying its endorsement by children as young as pre-school age (Gelman, Taylor, & Nguyen, 2004). In an effort to define essentialism, Gelman (2004) explained that essentialism describes "human constructions" rather than natural realities (p. 405). In other words, humans construct sex as reality rather than identify its existence in reality. Haslam and Levy (2006) found that essentialism includes the endorsement that the characteristics and behaviors of certain groups (e.g., women and men) are biologically immutable, have defining features, and are universally consistent across time and space. People who have essentialist beliefs tend to have a cognitive preference for stereotype-consistency over stereotype-inconsistency when making judgments about others (Bastian & Haslam, 2007). Therefore, essentialist beliefs should similarly affect the gender attribution process such that essentialist beliefs moderate the relationship between gender characteristics that are stereotype-inconsistent and gender misattribution.

Measures such as gender essentialism and biological gender beliefs may incorporate the social representations involved in cisgenderism that other measures, e.g., trans-related prejudice, do not include. For example, essentialism gets at the root of people making gender misattributions and includes the delegitimization of multiple existing and not-yet-realized gendered groups by exposing the assumptions that underlie gender in the first place. A major criticism inherent in the essentialism and cisgenderism concepts is that measuring negative attitudes toward specific groups reifies the existence of those groups by neglecting to call into question the assumptions that establish those groups from the start. For example, measures of
trans-prejudice are important to identifying who discriminates against “trans people” and measures of transphobia are important to identifying who fears or is disgusted by “trans people.” These measures accomplish the task of exposing that the prejudice exists, that certain people are more likely to be prejudiced in this way, and that the prejudice has a negative impact on the specific group of trans people (Ansara & Friedman, in press).

However, this focus on attitudes toward “trans people” does not identify what it is about people’s perceptions of trans people that causes such prejudice in the first place. Measures of trans-prejudice and transphobia also neglect to assess for assumptions that are made about trans people that are harmful, but may, in fact, be involuntary or come from a place of goodwill. People can hold opinions about a particular group that are positive while simultaneously holding assumptions that they are not fully aware of that impact their judgments when interacting with a member of that group (Hoffman, Hawronski, Gschwendner, Le, & Schmitt, 2005; Greenwald, McGhee, & Schwartz, 1998; Nosek, et al., 2007; Plant & Devine, 1998). Thus, people who are motivated to be less prejudiced tend to still be prejudiced at an implicit level (Ajzen, 2005; Bargh & Chartrand, 1999; Devine, 1989; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). For example, research on implicit racism has clearly demonstrated this effect. The implicit association test (which measures race-related stereotyping) captures significantly more variance than self-report measures of racial attitudes by showing that most people tend to asymmetrically favor “White” people over “Black” people (Nosek, et al. 2007). Implicit measures reveal asymmetries that exist behind people’s otherwise egalitarian beliefs toward certain groups in modern culture, e.g. that black people should be treated equally to white people (see Augoustinos & Walker, 1995). Thus, measures of attitudes toward transgender people (e.g.,
Genderism and Transphobia scale, Hill and Willoughby 2006) are not necessary to accomplish the goals of the present research.

Additionally, the focus on trans people as the subjects of trans-prejudice and transphobia has been criticized for its intracultural and intercultural exclusion of groups and individuals who may not fall into the very Western category of “trans,” but who experience discrimination for similar, underlying reasons, e.g., the experiences of Sikh-American Balpreet Kaur, Thailand’s Kathoey people, or Indonesia’s Bissu people (Ansara & Hegarty, 2013). Although the present study is constrained to an American population, cisgenderism offers more flexibility in the measurement of these similar experiences of discrimination (Ansara & Hegarty, 2012).

Essentialism and biological gender beliefs may define two ways of measuring the underlying assumptions that contribute to cisgenderist responses experienced by many different groups.

**Authoritarianism & Conservatism**

In their examination of anti-trans rights in the United Kingdom, Tee and Hegarty (2006) examined authoritarianism as a construct that relates to prejudice against transgender people. They found that part of the variance predicting opposition to trans people’s civil rights was explained by authoritarianism, an expected outcome given the correlation between sexual prejudice and authoritarianism in previous studies (see Herek, 2000; Whitley, 1999).

Augoustinos and Walker (1995) explained that people who score high on authoritarianism are inclined to be prejudiced toward all groups perceived as out-groups. They explained that the correlation has to do with a greater propensity to comply with norms, rather than just having the personality construct of authoritarianism. However, endorsement of authoritarian beliefs can be used to identify individuals’ willingness to comply with social norms. Zakrisson’s (2005) Right-Wing Authoritarianism (RWA) scale accomplishes this at least in part. The RWA is a
psychometrically sound measure based in social-learning theory that defines three components or factors: conventionalism, authoritarian submission, and authoritarian aggression. Conventionalism, in particular, has to do with strict conformity to social norms. Since the underlying components of this measure have to do with norms and gender characteristics are often stereotyped according to those norms, I suspect that endorsement of authoritarianism would impact the gender attribution process.

Sexual prejudice has traditionally been correlated with conservatism and right-wing politics in the United States (see Brewer, 2003). Brewer’s Conservativism scale measures two components: moral traditionalism and egalitarianism. Moral traditionalism is defined by beliefs about the threat of changing moral standards in society. Egalitarianism is defined by beliefs about all people’s right to equal treatment in society. This measure was originally developed to examine shifting public opinion in response to the gay rights movement. While there has been much correlation between measures of sexuality-related attitudes measures and measures of gender-related attitudes measures in past research (e.g., Tee & Hegarty, 2006), this measure’s items are general enough to explain other outcomes. Thus, conservative beliefs may be measured in relation to its impact on the gender attribution process.

**Conclusion**

In summary, social representations theory provides a theoretical framework for examining the impact of institutionalized cisgenderism on the schemas people use to make gender attributions at the cognitive level. Individual differences in gender attributions that lead to affirming other people’s own gender self-designations may reveal the beginnings of a cultural shift in social representations about gender. Looking to a person’s own gender self-designation (e.g., their personal gender identity) may eventually replace biology as the model for determining
a target person’s gender. However, previous research findings and scholarship on gender attributions, stereotyping, schemas, attitudes and prejudice, and cognitive busyness have highlighted several human tendencies that affect people's attributions about others. These tendencies reveal some of the *central elements* involved in social representations about gender that may be responsible for the persistence of cisgenderism over time. The tendencies are:

(a) people rely on characteristics perceived as essential (e.g., biological characteristics) when categorizing other people;

(b) people demonstrate an implicit, asymmetric preference for people perceived to have stereotype-consistent rather than stereotype-inconsistent characteristics;

(c) people categorize stimuli faster the more features of those stimuli are perceived as categorically similar;

(d) people enact cognitive control to correct for or adjust their misperceptions or misattributions if they are aware of and motivated to adjust them, but they will default to these perceptions or attributions if their cognitive resources become depleted (e.g., through the presentation of a distraction task);

(e) people differ in their level of prejudice toward particular groups depending on certain individual differences, e.g., having an open and agreeable personality, less contact with outgroups, being an ally to outgroups, essentialist beliefs, authoritarian beliefs, and conservatism relate to greater prejudice.

These tendencies inform the theoretical model, study aims, and methods that were used in the research outlined henceforth.

**The theoretical model**

Based on the above analysis of the literature, I have developed a theoretical model to explain the relationships among the gender attribution process, individual differences, and cisgenderist outcomes (Figure 1). According to the model, people automatically process some aspects of gender at the cognitive level through gender visualization (*A*) and application of a default schema (*B*) to help interpret the visualization and make a final gender attribution (*D*). Gender visualization is proposed as an important part of the process since Kessler & McKenna
(1978) emphasized how people assume a person's genitals—even when they are not physically shown—based on other characteristics of the individual. Congruent with past research on stereotypes and automaticity (Bargh, 1999), this model suggests that this process is automatic, or little time is spent visualizing, when characteristics are described as stereotype-consistent with other characteristics. Similarly, application of the default schema is quick when characteristics are expected. Gilbert (1989) discussed how some people attempt to correct their biased attributions. Thus, the model posits that some people may engage in an explicit process in which the default schema that was automatically applied is adjusted by applying a different schema (C) before making the final gender attribution. Different outcomes for gender attribution depend on the schema that the perceiver uses to interpret the target person’s biological characteristics relative to the target person’s gender identity. When target persons’ characteristics are interpreted as stereotype-inconsistent, some people may use a default schema (B) while others may adjust (C) for the default schema before making a final gender attribution (D). Schema adjustment is operationally defined as less rejection of a target person’s self-designed gender identity (D) specifically when the target person’s characteristics are perceived to be stereotype-inconsistent.

For example, if perceivers are told to determine the gender of "G" who identifies as a woman and has a penis, they would begin by processing their perceptions of G through gender visualization (A). If G identified as a man and had a penis, perceivers would easily and quickly visualize a penis and possibly imagine other biological features that are stereotypically associated with having a penis (e.g., having a beard). However, the stereotype-inconsistency between G identifying as a woman and G having a penis would slow down the visualization and schema application process in comparison to if G's characteristics were stereotype-consistent. At
first, all people will automatically apply a default schema (B) in which they rely on G's actual or imagined biological characteristics to help them arrive at a final gender attribution. Using this default schema, many perceivers will arrive at the conclusion that G is a man, which is a rejection of G's gender identity as a woman, because G has a penis. However, some people will adjust their schema (C). They will use the gender identity of G, rather than G's genitals, to make a final gender attribution (D).

The model further suggests that individual differences (X) in cognitive processing, derived from measures of experience, personality, attitudes, and beliefs, directly moderate the relationship between engaging in schema adjustment in the first place (C) and making a gender attribution (D). The model additionally posits two moderating factors on schema adjustment processes. First, the presence of a distraction (Y) during visualization may weaken the likelihood that people will engage in schema adjustment (C) similar to the increase in sexist language caused by cognitive busyness in Cralley and Ruscher's (2005) study. Second, based on the notion that circumstance can alter judgments (Augoustinos & Walker, 1995), the interpretation of consistency or inconsistency between a target person’s gender identity and an additional gender characteristic (Z) may also weaken the likelihood that adjusters will engage in schema adjustment (C).

To return to the example of G, perceivers will be more likely to engage in schema adjustment if they have the following individual differences (X): more contact with transgender people, fewer essentialist beliefs, fewer beliefs that biology determines gender, less authoritarianism, and less conservatism. In other words, they will be more likely to determine that G is a woman, which demonstrates acceptance of G's gender identity (D). However, if perceivers who typically engage in schema adjustment (C) are distracted (Y) during gender
visualization of G (A), then they will be less likely to engage in schema adjustment (C). Similarly, if an additional characteristic is described that is stereotypically-inconsistent with G's gender identity as a woman (Z), such as that G enjoys wearing tuxedos to formal events, then perceivers will also be less likely to engage in adjustment (C). Both of these factors—distraction (Y) and an additional stereotype-inconsistent characteristic (Z)—will lead perceivers who typically engage in schema adjustment to apply the default schema (B) and determine that G is a man (D).

**Research aims and Study Overview**

Drawing on the logic of this model and the literature outlined above, I conducted a program of research addressing several aims that correspond with the questions raised at the beginning this dissertation. In this research, I follow the suggestions of Moscovici (2001) by examining collective representations as they exist in the social discourse. I do so by defining these representations as the independent variables—manipulations of target gender characteristics (stereotype-inconsistent/consistent) that are then judged by perceivers. This experimental design is one methodological approach, among many, to studying social representations theory (see Wagner, et al., 1999). Each aim to these studies is outlined below:

**Aim 1:** Determine how perceived stereotype (in)consistencies between a target person’s gender identity and biological characteristics impact the extent to which perceivers (a) reject a target person’s gender (rejection scores); and (b) take time to judge the target person’s gender (response time).

**Aim 2:** Describe the individual difference factors that impact the relationship between perceptions of the stereotype (in)consistencies in target peoples gender characteristics and perceivers’ (a) rejection scores; and (b) response time.

**Aim 3:** Determine the impact of cognitive busyness/presence of a distraction on adjusters’ (i.e., according to the model these are people who engage in schema adjustment) rejection scores for target people’s perceived to have stereotype-inconsistent characteristics.
Aim 4: Determine the impact of an additional gender-related target characteristic (e.g., clothing) on adjusters’ rejection scores for target people perceived to have stereotype-inconsistent characteristics.

Five studies were conducted to address the above aims. Study 1 tested Aims 1 and 2. Study 1 examined the relationship between perceived stereotype-inconsistencies of a target person's gender characteristics and the perceivers’ rejection of the target person's gender identity by rating the extent to which the target person is a woman or a man. The relationship between the time perceivers took to judge target people’s characteristics (e.g., gender identity, genitals, and chromosomes) and stereotype-(in)consistencies of the target person was also determined. Lastly, the study explored the role of individual differences in these relationships.

Study 2 extended Study 1 by specifically addressing Aim 3. The study tested the impact of cognitive distraction on the gender ratings given to target people by perceivers who engage in schema adjustment ("adjusters"). This study expanded on Study 1 by allowing participants more flexibility on the rating scale used to determine target people’s gender, and by examining additional individual differences. Study 2 also restricted the gender characteristics describing the target to gender identity and genitals.

Similar to Study 2, Study 3 addressed Aim 3. However, Study 3 used a revised study design aimed at strengthening the distraction task and reducing the potential confound effect of rehearsal time between rating target people without a distraction present and rating them with a distraction present.

Study 4 piloted new target gender characteristics in order to test the extent to which certain gender-related characteristics (e.g., clothing) are socially represented as exclusively for women or exclusively for men and the extent to which these characteristics are socially desirable. The characteristics with the strongest ratings were used in the vignettes that described new target people in Study 5.
Study 5 used findings from Study 4 to test Aim 4. This study examined the effect of manipulating a normative gender characteristic (e.g., clothing preference) that is perceived as stereotype-inconsistent with the target person's gender identity on adjusters' gender judgments.
Chapter 3:

Study 1 – Secondary Data Analysis

Kessler and McKenna (1978) concluded from their studies that certain biological characteristics of the target—particularly the genitals—are central to the gender attribution process. Study 1 aimed to experimentally test factors such as genitals and others that may contribute to the gender attribution process within US society today. As a part of this process, the current study attempts to link knowledge from research demonstrating asymmetry in people’s judgments of others marked as surprising and who become the “effect to be explained" to the tendency to misgender certain people over others (e.g., Hegarty & Pratto, 2001). Factors that may contribute to the asymmetrical misgendering of others were investigated to determine which ones were most strongly linked to misgendering. Since misgendering has to do with assigning a person to a gender to which they do not personally identify, the gender identity of the target was the primary factor used to determine when misgendering occurred. Thus, Study 1 investigated how perceived stereotype-(in)consistencies between a target person’s gender identity and biological characteristics affect the extent to which perceivers reject a target person’s gender.

The research on asymmetrical judgments suggests that perceivers pay more attention to targets stereotypically perceived as surprising (e.g., Hegarty & Pratto, 2001). Research on schematic categorization has also found that the more dissimilar the features of a category are, the more time people take to categorize it (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003). Study 1 assessed response time to help determine which combinations of stereotyped features of targets are processed more quickly than others. Based on research on the contact hypothesis (e.g., Pettigrew & Tropp, 2006) and research that links personality traits to more positive experiences with outgroups (e.g., McCrae & Costa, 1997), I also hypothesized that
factors of the perceiver may attenuate the extent to which misgendering occurs. For example, exposure to people who are more likely to have gender-related characteristics that are perceived as atypical (e.g., some transgender people), may lead to less misgendering and less time spent judging the target. The gender attributions people make, the amount of time they spend making those attributions, and individual factors related to the perceiver may shed light on the extent to which knowledge about gender is collectively represented and individually perpetuated.

To test the above, Study 1 involved a secondary data analysis conducted on Dr. Sarit Golub’s research study on gender perception. Dr. Golub developed the design of the experiment and collected the data in her lab with a team of research assistants. I then conducted an analysis of the data based on post-hoc inquiry stemming from the model I proposed in Figure 1. I examined the relationship between stereotype-inconsistent gender-related target characteristics and perceiver “rejection” of the target’s gender identity. I also examined whether there were differences in response time when rating targets with stereotype-inconsistencies compared to those with stereotype-consistent characteristics. Furthermore, I tested contact with transgender people and specific Big 5 personality traits (e.g., openness and agreeableness) as covariates that might influence rejection or acceptance of a target's gender identity.

Participants

Study 1 participants were 151 students from Hunter College in New York City (NYC) who received course credit for their participation in the study. Of these 151 students, 24 (15.3%) students did not pass the manipulation check, which was used to determine people’s basic knowledge about the stereotyped association between XX chromosomes and women as well as XY chromosomes and men. Therefore, the final sample used in Study 1 analyses was 127 participants.
Table 1 shows full demographic data on the 127 participants. Of 125 participants who responded to the question asking about their age, the sample ranged from 18 to 53 years old ($M = 21.10$, $SD = 4.61$). The 127 participants were mostly female-identified, mostly straight-identified, had diverse racial group representation, mostly grew up in NYC, had a diverse representation of household incomes, and the majority were Atheist, Catholic, or Protestant/Christian.

**Method**

Study 1 was conducted in the research lab. Participants completed the study on the computer using MediaLab/Direct RT. Participants were presented with vignettes that they were asked to rate, filled out some additional measures, and then answered background information about themselves.

*Vignettes.* First, participants were asked to read a series of fictional vignettes and make an attribution about the gender of the target person described in each vignette. A total of 16 vignettes included a description of four dichotomous gender-related characteristics (2x2x2x2) representing a single target individual: (a) chromosomes (XX or XY); (b) external genitals (vagina and labia or penis and scrotum); (c) gender identity (strong personal identity as a woman and wears skirts and heels to work at a law office or strong personal identity as a man and wears suits and ties to work at a law office); (d) sexual attraction (attracted to women and is currently in a relationship with a woman or attracted to men and is currently in a relationship with a man).

The following is an example of one of these vignettes:

L. H. has XX chromosomes, and a vagina and labia. L. H. has a strong personal identity as a man, and wears suits and ties to work at a law office. L.H. is attracted to women, and is currently in a romantic relationship with a woman.

The initials used to describe each target were different for all 16 vignettes. Initials were used to avoid the possibility of communicating gender through the use of names with different gender
meanings. MediaLab/Direct RT software recorded participants’ responses and counterbalanced the order of presentation of vignettes and gender characteristics within each vignette.

Rejection scores. For each vignette, participants were asked to evaluate whether they thought the person described was a woman or a man on a 7-point Likert-type scale (1 = definitely a man, 7 = definitely a woman). In this within-subjects design, all participants were asked to evaluate all 16 vignettes using this rating system. Predictions for this study focused on determining the extent to which perceivers were misgendering of targets. Thus, a rejection of self-designated gender ("rejection") variable was operationalized as the degree of discrepancy between the target’s self-designated gender identity (e.g., L.H. has a strong personal identity as a man) and the participant’s rating of the target’s gender (e.g., the distance between the participant’s rating and a “1” on the scale). For all vignettes, rejection scores were coded such that higher scores reflect greater rejection of target’s self-designated gender identity. The four within-subjects factors (gender identity, genitals, chromosomes, and sexual attraction) yielded 16 distinct rejection scores.

Response time. As participants read and rated the vignettes, MediaLab/Direct RT software recorded the time it took them to respond and move on to the next question (response time). Response times were recorded in milliseconds (ms) and were converted to seconds (s) for the final results.

Contact factor. Participants were asked the amount of contact they had with particular groups of people who are most likely to experience cisgenderism. They were asked the number of transgender people they know. They were also asked the number of lesbian, gay, and bisexual people they know. These questions were coded as dichotomous variables in which participants
either knew transgender people (1”) or not (“0”) and either knew lesbian, gay, and bisexual people (“1”) or not (“0”).

*Personality factors.* The Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2008) was used as a brief measure of personality factors. This measure uses a Likert scale (1 = strongly disagree; 7 = strongly agree) in which participants are given a set of 10 different personality traits. This scale averages together 2 items out of the 10 to create the “agreeableness” variable and averages together 2 different items out of the 10 to create the “openness” variable. Participants’ scores for “openness” (\(M = 5.48, SD = 1.01\)) and “agreeableness” (\(M = 4.77, SD = 0.96\)) were used in analyses for Study 1 in which higher scores indicated more openness and agreeableness.

**Hypotheses and Analyses**

Three hypotheses were tested in Study 1:

**Hypothesis 1:** Rejection will be greater and response time will be slower when the target person’s characteristics are perceived as *stereotype-inconsistent* as opposed to *stereotype-consistent*.

**Hypothesis 2:** Stereotype inconsistency perceived between *genitals* and gender identity will have a stronger impact than stereotype-inconsistency perceived between *chromosomes* and gender identity on perceiver’s level of rejection and response time.

**Hypothesis 3:** Contact and personality factors such as no contact with transgender people and less openness and agreeableness will strengthen the relationships found in Hypothesis 1 and Hypothesis 2.

Since the study seeks to understand the factors that contribute to the rejection of a person's self-designated gender, target gender characteristics were considered stereotype-inconsistent or consistent depending on the target's gender identity. Based on U.S. society's social representations of gender, chromosomes were considered *stereotype-inconsistent* with gender identity when XX chromosomes were paired with identifying as a man or when XY
chromosomes were paired with identifying as a woman in the vignettes. Genitals were considered stereotype-inconsistent with gender identity when having a penis was paired with identifying as a woman and having a vagina was paired with identifying as a man in the vignettes. Sexual attraction was considered stereotype-inconsistent with gender identity when attraction to women was paired with identifying as a woman and attraction to men was paired with identifying as a man. Additionally, genitals and chromosomes were considered stereotype-inconsistent with each other when having a vagina was paired with XY chromosomes or having a penis was paired with having XX chromosomes. Henceforth, references to stereotype-inconsistencies or stereotype-consistencies between gender-related characteristics describe participants' perceptions that those characteristics are either stereotype-inconsistent or – consistent; not that they in reality are stereotype-inconsistent or stereotype-consistent.

Framework for testing hypotheses. The first hypothesis was tested to determine how perceived stereotype (in)consistencies between target’s gender identity and biological characteristics impact rejection and response time. A 2 (gender identity: woman/man) x 2 (genitals: vagina/penis) x 2 (chromosomes: XX/XY) x 2 (sexual attraction: to women/to men) repeated measures (within-subjects) multivariate analysis of variance (MANOVA) was conducted on rejection scores and response time. MANOVA is appropriate when independent variables are predicted to impact the pattern of responses on multiple dependent variables (Carey, 1998). Thus, this technique was applied since I predicted that rejection and response time would depend on the stereotype-(in)consistency of the targets' gender characteristics in each vignette. ANOVA is more preferable in cases where the dependent variables are highly correlated, but that was not the case for rejection and response time in this study. Another advantage to using MANOVA over ANOVA is that it diminishes the possibility of Type I error.
(Stevens, 2009; Tabachnick and Fidell, 2001). In order to interpret the individual impact of both rejection and response time in this study, univariate (ANOVA) statistics were reported where multivariate significance was found, as suggested by Tabachnick and Fidell (2001).

Interaction effects specifically between gender identity and the other target characteristics—genitals, chromosomes, and sexual attraction—on rejection and response time were examined through the repeated measures MANOVA. No predictions were made for sexual attraction, but since it was a manipulated variable it was included in the analysis. The means of the two-way interaction effects between gender identity and genitals as well as gender identity and chromosomes were examined to interpret the predictions of Hypothesis 1. An examination of the means of these interactions would suggest the extent to which stereotype-consistency or stereotype-inconsistency between gender identity and the biological characteristics were responsible for significant changes in rejection and response time. The effect sizes of each of these interactions were examined to determine the extent of their influence and to interpret predictions of Hypothesis 2. Partial eta-squared effect sizes were calculated to analyze any differences between genitals and chromosomes on the outcomes. These effect sizes are operationalized as small (.01), medium (.06), and large (.14) effects (Richardson, 2011; Stevens, 2009). For a comprehensive understanding of the full model, additional two-way interactions as well as three-way and four-way interactions were reported.

Finally, a repeated measures multivariate analysis of covariance (MANCOVA) was conducted on rejection and response time to address Hypothesis 3. Contact and personality factors were entered as between-subjects covariates. In order to determine the interaction effect of these covariates and the relationship between the relevant factors and the outcomes, only significant factors producing large effect sizes from the first analysis were included in the
MANCOVA. Three-way interaction effects between each covariate, gender identity, and each of the other factors were examined. An examination of the means would suggest the direction of the impact of knowing a transgender person and/or having an open and agreeable personality on the relationship between stereotype-(in)consistency of the target's characteristics and rejection and response time.

Assumptions of MANOVA. The assumption of sphericity does not typically need to be met for MANOVA (O’Bien & Kaiser, 1985). Regardless, sphericity is trivial in the present study since the within-subjects factors only measured two levels (see Lewis, 1993). This means that different criteria for correcting violations of sphericity (e.g., Greenhouse-Geisser, Huynh-Feldt) produced the same univariate statistics, so I report univariate statistics regardless of correction. An examination of skew and kurtosis demonstrated moderate to heavy-tailed distributions on some of the factors—especially for the response times—in response to each vignette. There is consensus in the literature that the repeated measures MANOVA technique is robust to violations of normality (Bock, 1975, Cohen, 2008; Obrien and Kaiser, 1985, Stevens, 2009). Light-tailed distributions that are non-normal are typically robust in small to moderate sample sizes (Field, 2009). When there are heavy-tailed distributions, such as in the present study, sample size must be large (above 50 cases) in order to be robust to violations of normality (Stevens, 2009; Wilcox, 2005). Thus, assumptions of normality were not of concern even with extreme non-normality since all analyses in Study 1 involved a large sample size (N = 127).

Nevertheless, to be certain that the non-normality of the data did not affect the results, attempts were made to normalize the data and compare the outcomes. Removal of outliers—e.g., people who took longer than 50 seconds to make a gender attribution (n = 7)—prior to conducting the RM MANOVA did not change the significant outcomes found without their
removal. A log transformation of the data prior to conducting the repeated measures MANOVA also did not change the significant outcomes found without transformation. These adjustments actually strengthened some of the outcomes found prior to outlier removal or transformation. But inclusion of outliers may be theoretically important to the hypotheses (Kruskal, 1960; Orr, Sackett, & DuBois, 1991). For example, outlier responses on response time may reflect the extent to which people find it difficult to process and interpret target gender characteristics especially when they are stereotype-inconsistent. Thus, outliers were included in the final analyses reported below. Also, since repeated measures MANOVA is robust to violations of normality and transformed data produced the same significant outcomes, non-transformed data were entered into the final analyses.

Results

Main effects. The repeated measures MANOVA produced no main effects for gender identity, genitals, chromosomes, or sexual attraction on rejection and response time.

Two-way interaction effects. To test Hypothesis 1 and 2, the repeated measures MANOVA on rejection and response time produced several significant two-way interaction effects. Means and standard errors for significant results from this analysis are outlined in Table 2. A significant two-way interaction effect was found between gender identity and genitals on both rejection and response time, $F(2, 125) = 159.69, p < .001, \eta_p^2 = 0.72$. Univariate tests (ANOVA) demonstrated rejection was significantly higher when genitals were stereotype-inconsistent (woman/penis, man/vagina) compared to stereotype-consistent (woman/vagina, man/penis) with target gender identity, $F(1, 126) = 306.87, p < .001, \eta_p^2 = 0.71$. Univariate tests demonstrated response time was significantly slower when genitals were stereotype-inconsistent
compared to stereotype-consistent with target gender identity, $F(1, 126) = 19.29, p < .001, \eta^2_p = 0.13$.

A significant two-way interaction effect was also found between gender identity and chromosomes, $F(2, 125) = 85.26, p < .001, \eta^2_p = 0.58$. This effect was driven by rejection scores, such that univariate tests demonstrated rejection was higher when chromosomes were stereotype-inconsistent (woman/XY, man/XX) compared to stereotype-consistent (woman/XX, man/XY) with target gender identity, $F(1, 126) = 171.67, p < .001, \eta^2_p = 0.58$. Univariate tests demonstrated no significant interaction between gender identity and chromosomes on response time.

A significant two-way interaction effect was found between gender identity and sexual attraction, $F(2, 125) = 3.68, p < .05, \eta^2_p = 0.06$. This effect was driven by rejection scores, such that univariate tests demonstrated rejection was higher when sexual attraction was stereotype-inconsistent, but only for targets who identify as men, $F(1, 126) = 5.10, p < .05, \eta^2_p = 0.04$. In other words, rejection was higher for targets who identify as men and are attracted to men than for targets who identify as women and are attracted to women. Rejection was also higher for targets who identify as men and are attracted to men than for targets whose attractions are stereotype-consistent regardless of gender identity (i.e., women attracted to men, men attracted to women). Univariate tests demonstrated no significant interaction between gender identity and sexual attraction on response time.

A significant two-way interaction effect was found between genitals and chromosomes, $F(2, 125) = 5.15, p < .01, \eta^2_p = 0.08$. This effect was driven by response time such that univariate tests demonstrated response time was slower when targets had a vagina and XY chromosomes compared to any other combination of characteristic regardless of gender identity (vagina/XX,
penis/XX, penis/XY), \( F(1, 126) = 9.42, p < .01, \eta_p^2 = 0.07 \). Univariate tests demonstrated no
significant interaction between genitals and chromosomes on rejection.

There were no significant two-way interaction effects found between genitals and sexual
attraction or chromosomes and sexual attraction.

**Three-way interaction effects.** A significant three-way interaction effect was also found
between gender identity, genitals, and chromosomes on rejection and response time, \( F(2, 125) =
4.10, p < .05, \eta_p^2 = 0.06 \). Means and standard errors for this interaction are outlined in Table
3. This effect was driven by a *marginally* significant effect of rejection and a significant effect of
response time. As depicted in Figure 2, univariate tests revealed that rejection increased as the
number of target biological characteristics that were stereotype-inconsistent with target gender
identity increased, \( F(1, 126) = 3.71, p = .06, \eta_p^2 = 0.03 \). In other words, rejection was higher
when just chromosomes or just genitals were stereotype-inconsistent (woman/XY/vagina,
woman/XX/penis, man/XY/vagina, or man/XX/penis) compared to when both chromosomes and
genitals were stereotype-consistent with target gender identity (man/XY/penis,
woman/XX/vagina). Rejection was highest when both chromosomes and genitals were
stereotype-inconsistent (man/XX/vagina or woman/XY/penis). Also depicted in Figure 2,
univariate tests demonstrated that response time slowed differently across conditions depending
on target identity as a woman or a man, \( F(1, 126) = 4.13, p < .05, \eta_p^2 = 0.03 \). When targets
identified as women, response time was slower when either one or both biological characteristics
(genitals and/or chromosomes) were stereotype-inconsistent (woman/penis, woman/XY)
compared to stereotype-consistent (woman/vagina, woman/XX) with target gender identity. In
contrast, when targets identified as men, response time was slower when genitals were
stereotype-inconsistent (man/vagina) compared to stereotype-consistent (man/pens) with target gender identity, regardless of chromosomes.

There were no three-way interaction effects between gender identity, chromosomes, and sexual attraction, between gender identity, genitals, and sexual attraction, or between chromosomes, genitals, and sexual attraction.

There was no four-way interaction found between gender identity, genitals, chromosomes, and sexual attraction (data not shown).

*Moderation effects.* Since sexual attraction had only a small to moderate effect size in the original analyses and since it was not a variable of interest to the original hypotheses, sexual attraction was dropped in the moderation analyses depicted by Hypothesis 3. Means for the remaining three factors were collapsed across the sexual attraction factor. Thus, a three-way (gender identity, genitals, chromosomes) repeated measures MANCOVA was conducted on rejection scores and response times with transgender contact, openness, and agreeableness entered as covariates. The only significant interaction found was between gender identity, chromosomes, and transgender contact on rejection and response time, $F(2, 122) = 5.97, p < .01$, $\eta_p^2 = 0.09$. This effect was driven by a significant effect of rejection and a marginally significant effect of response time. As depicted in Figure 3, univariate tests revealed that rejection was higher overall when chromosomes were stereotype-inconsistent with gender identity, but rejection was highest among people who had no transgender contact compared to people who did, $F(1, 122) = 8.50, p < .01$, $\eta_p^2 = 0.07$. In other words, rejection was higher for people who do not know at least one transgender person compared to people who do know at least one transgender person when chromosomes were stereotype-inconsistent with gender identity (woman/XY, man/XX), regardless of genitals. As depicted in Figure 3, the marginally significant
result from the univariate tests suggested that response time was slower among people who had no transgender contact compared to people who did, but this effect was strongest when chromosomes were stereotype-inconsistent with targets who identified as women, $F(1, 122) = 3.71, p = .06, \eta^2_p = 0.03$.

No significant interactions were found on rejection or response time for gender identity, genitals, and transgender contact, gender identity, genitals, and openness, gender identity, chromosomes and openness, gender identity, genitals, and agreeableness, gender identity, chromosomes, and agreeableness (data not shown).

**Summary**

Results supported the predictions of Hypothesis 1. Both genitals and chromosomes were found to individually affect people's gender judgments. In reflection of past research on asymmetry in the judgments of others (e.g., Hegarty & Pratto, 2001), people were more rejecting when genitals and chromosomes were stereotype-inconsistent rather than stereotype-consistent with gender identity. Both the interactions between genitals and gender identity as well as chromosomes and gender identity on rejection had very large effect sizes. The finding regarding chromosomes expands on the work of Kessler and McKenna (1978) who did not assess internal biological characteristics stereotyped to gender in their studies. People were also slower to make a gender judgment, but only when genitals were stereotype-inconsistent with gender identity. The interaction between genitals and gender identity on response time had a large effect size. Although previous research correlates dissimilar features of stimuli with increases in time spent categorizing (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003), the present research suggests that this process is context-dependent. The time it takes to categorize gender in the face of dissimilar features is increased primarily by stereotype-inconsistent genitals and not by other
stereotype-inconsistent characteristics (e.g., chromosomes). Cognitive processing of genitals differ from other characteristic types because they may be more strongly socially represented.

Hypothesis 2 was partially supported by the results. Effect sizes for the interactions between genitals and gender identity and chromosomes and gender identity on rejection were both very large, although genitals and gender identity had a slightly larger effect size. The larger effect size on rejection and the only significant interaction on response time for genitals suggests some support for the prediction that genitals had a stronger impact on the gender attribution process than chromosomes. This confirmed the findings in Kessler and McKenna’s (1978) studies such that genitals were found to be a primary factor that people relied on when making gender attributions. However, this did not support their finding that beyond just genitals, gender attribution is penis attribution. Having a vagina and having a penis were similarly rated regardless of the gender identity of the target. Results from the three-way interaction between gender identity, genitals, and chromosomes also did not provide further support for Hypothesis 2 since the effect sizes were so small. The small effect of the differences between the gender identity of the target in this three-way interaction may suggest that the penis is less central to social representations of gender than it was when Kessler and McKenna (1978) conducted their studies.

Study 1 findings partially supported the predictions of Hypothesis 3. Amount of contact with transgender people was the only significant moderating covariate found. Thus, personality traits do not attenuate the processes that result in misgendering in the same way that they have been found to attenuate the processes that lead to prejudice (see Jackson and Poulsen, 2005). In support of previous research on the contact hypothesis, when chromosomes (regardless of genitals) were stereotype-inconsistent with gender identity, knowing a transgender person made
people less rejecting of targets overall. A marginally significant effect suggested that these same conditions made people slower at making a gender attribution specifically when the targets identified as women. There were medium effect sizes for the interaction between gender identity, chromosomes, and knowing a transgender person on rejection and on response time.

Although no predictions were made about sexual attraction, the present study also found that people were more rejecting of target gender identity when the target identified as a man and was attracted to men compared to any other target type. But the effect size for this interaction between gender identity and sexual attraction on rejection was only small to medium.
Chapter 4:  

Study 2 – Replicating and Expanding on Study 1

Study 2 replicated Study 1, but expanded on its methods and measures. Participants were given more flexibility on the rating scale used to determine target people’s gender, such that participants used separate scales to rate the degree to which the person was a woman and the degree to which the person was a man rather than rating them on one continuous scale from “definitely a woman” to “definitely a man.” The rating scale was split so as not to reinforce a binary view of gender (see a longer explanation in the section on Rejection Scores below). Since Study 1 found that the interaction between genitals and gender identity had the strongest impact on the gender attribution process, genitals and gender identity were isolated for examination of these factors in Study 2. Additionally, I revised and retested the contact with transgender people variable. According to previous research which linked ally status to less prejudice toward the allied groups (Stone, 2009; Stotzer, 2009), I tested the impact of perceiver’s identification as an ally to transgender people on the outcomes. Finally, Moscovici (1963) suggested that individual attitudes are linked to social values. Thus, attitudes/beliefs were measured (e.g., gender essentialism, biological gender beliefs, natural attitudes/beliefs about gender, authoritarianism, and conservatism) based on research suggesting their correlation with prejudice toward certain outgroups (Bastian & Haslam, 2007; Herek, 2000; Tee & Hegarty, 2006; Whitley, 1999). All tests related to the experiences and attitudes of the perceiver were measured for their moderating impact on stereotype (in)consistencies of target people’s characteristics and rejection and response time.

Participants
Study 2 participants were 202 individuals recruited through Amazon’s Mechanical Turk\(^9\) (MTurk) who completed the study online and received $0.50 each for their participation. MTurk parameters were set to exclude non-U.S. residents and non-English speakers because study aims and methods were developed based on assumptions about the ways in which social representations are communicated within Western, U.S.-based society with no cross-cultural or cross-lingual predictions. Furthermore, people under 18 years of age were excluded because study aims rely on the establishment of social representation at the cognitive level and no predictions are made with regard to the developmental processing of such social representations in childhood and adolescence. Additionally, people who have a low Human Intelligence Task (HIT) rating (below 90\%) and have completed less than 50 HITs on MTurk were excluded because this ensured the data were of high quality (see Shapiro, Chandler, & Mueller, 2013). Of the 202 individuals recruited, 12 (6.0\%) of the participants did not pass the quality checks which were embedded in the study to determine whether or not people were paying careful attention to each study item (see description in the Method section below). Therefore, the final sample used in Study 2 analyses was 190 participants.

Table 5 shows full demographic data on the 190 participants in Study 2. Participants ranged in age from 19 to 76 years old (\(M = 38.77, SD = 35.50\)). Participants were politically oriented slightly liberal or left of neutral/moderate (\(M = 3.32, SD = 3.00\)). Altogether, responses average around the midpoint of the scale (neither agree nor disagree) on the following attitudes/beliefs measures: gender essentialism (\(M = 4.55, SD = 1.31\)); biological gender beliefs

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\(^9\) MTurk is an internet-based crowdsourcing service for recruiting participants that is increasingly being used by psychologists and other social scientists (Burmeister, Kwang, & Gosling, 2011; Crump, McDonnell, & Gureckis, 2013; Paolacci, Chandler, & Ipeirotis, 2010). Participation from MTurk users has been found to produce reliable, high-quality data at a rapid and inexpensive rate through the recruitment of more demographically diverse samples than regular internet samples or college student convenience samples (for a review see Burmeister, Kwang, & Gosling, 2011).
and natural attitudes/beliefs about gender ($M = 4.05, SD = 1.34$).

Participants' authoritarian beliefs ($M = 3.05, SD = 1.31$) and morally traditional beliefs ($M = 3.21, SD = 1.56$) averaged a bit below the midpoint of the scale, indicating slight to moderate disagreement with these scales. Participants egalitarian beliefs ($M = 5.21, SD = 1.40$) averaged a bit above the midpoint of the scale, indicating slight to moderate agreement with the scale.

Participants reported having an average of 4.00 ($SD = 2.50$) bisexual, lesbian, or gay friends. The percentage of participants who reported having at least one transgender friend was 12.6% ($n = 24$). Most participants did not have a gender identity independent from the gender assigned to them at birth, were assigned as female at birth, thought other people correctly perceive their gender, and had a constant and clear attraction to people who are the binary opposite of the gender assigned to them at birth. Participants described the area surrounding their current residence as suburban, they did not identify as Hispanic or of Latin American decent, they identified as White or Caucasian, and they had less than a 4-year college degree. On ally status, most participants did not consider themselves to be allies to transgender people while most did consider themselves to be allies to lesbian, gay, and bisexual (LGB) people.

**Method**

Study 2 was conducted completely on the internet using MTurk which directed participants to a Qualtrics survey. Participants were presented with vignettes that they were asked to rate, filled out a series of Likert-scale measures, and then answered background information about themselves.

*Vignettes.* Similar to Study 1, participants were asked to read a series of fictional vignettes and make an attribution about the gender of the target person described in each vignette. Vignettes included two gender-related characteristics and three other characteristics that
were used as filler information unrelated to gender. Filler information was meant to distract participants from determining that the only variables under examination were gender identity and genitals (2x2). Vignettes included the following information: (a) gender: identity (thinks of themself as a woman or man); (b) gender: genitals (has a vagina or penis); (c) filler: age (is an old or a young adult); (d) filler: transportation to work (takes the subway to work in a big city or takes the bus to work in the suburbs) (e) filler: food (likes to eat chicken or turkey). The following is an example of a vignette used in the study:

J. S. is a young adult who enjoys eating chicken, has a penis, thinks of themself as a woman, and takes the bus to work in the suburbs.

The initials used to describe each target were different for all vignettes. There was a 2 (thinks of themself as a woman/man) x 2 (has a vagina/penis) design yielding 4 vignettes used for analyses. Since the rest of the characteristics were used as filler information, these characteristics were deliberately paired such that target persons who identified as a woman were always described as a young adult, who enjoys eating chicken, and takes the bus to work in the suburbs and target persons who identified as a man were always described as an older adult who enjoys eating turkey, and takes the subway to work in a big city. These pairings were applied regardless of whether or not target persons had a vagina or a penis. Each participant received all 4 vignettes. Qualtrics randomized the presentation of these vignettes across participants.

*Rejection scores.* For each vignette, participants were asked to evaluate the target person’s gender on two separate scales: (1) the degree to which they thought the person described was a woman (Woman Attribution scale; 1 = definitely a woman, 7 = definitely not a woman); and (2) the degree to which they thought the person described was a man (Man Attribution scale; 1 = definitely a man, 7 = definitely not a man). Rejection of the target person’s self-designated gender was operationalized as the degree to which a participant evaluated the
target person’s gender as different from the description of the target person’s gender identity (e.g. definitely a man when the target person identifies as a woman). Rejection of a person’s self-designated gender as a woman was the average score between the Woman Attribution scale and the Man Attribution scale, in which the Man Attribution scale was reverse coded. Similarly, rejection of a person’s self-designated gender as a man was the average score between both scales in which the Woman Attribution scale was reverse coded. The measures were separated in the study to capture nuance in the gender judgments people make and so as not to reinforce the binary assumption that the more we perceive a target as a man, the less we perceive that target as a woman. With separate dimensions, participants did not have to identify the target, for example, as a woman by denying a concurrent perception of the target as a man. Higher scores meant greater rejection.

Response time. As participants read and rated the vignettes, Qualtrics recorded the time it took them to respond and move on to the next question (response time). Record of response time started when the page loaded and ended when the participant clicked to continue to the next survey page. Response times were recorded in seconds.

Measures: Contact and Attitudes/beliefs. Study 2 tested the impact of seven potential moderators having to do with perceivers’ contact with transgender people or perceivers' attitudes/beliefs that may predict the relationship between target gender characteristics and rejection scores or response time. Full measures, where applicable, can be viewed in the Appendix.

Transgender friendships. The transgender friendships variable indicated participants' total number of friends who are transgender. This number was transformed into a binary variable of people who indicated having zero friends who are transgender (“0”) and people who indicated
having at least one friend who is transgender ("1"). For analyses involving participants' transgender friendships, there were 188 participants because two participants did not respond to this question.

Transgender ally status. The dichotomous transgender ally status variable was based off of a binary question in which participants indicated that they either do not consider themselves to be an ally to transgender people ("0") or they do consider themselves to be an ally to transgender people ("1"). For analyses involving participants' status as an ally to transgender people, there were 188 participants because two participants did not respond to this question.

Gender Essentialism. The Essentialist Beliefs scale (Haslam & Levy, 2006) is a 15-item measure that was modified and factor analyzed to create a 9-item Gender Essentialism scale used in Study 2. The scale was originally developed to measure people’s essentialist beliefs about sexual orientation, i.e., beliefs about gay and straight people as distinct groups. However, modifications focused on essentialist beliefs about women and men as distinct groups. The scale was restricted to the original discreteness factor items and most of the original immutability factor items because the content of these items translated accurately from being about sexuality to being about gender.

Participants rated Gender Essentialism items on a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree). An example of an item from the scale is "Women and men each have necessary or defining characteristics, without which they would not be women or men." Qualtrics randomized the presentation of all items within the scale across all participants. The Gender Essentialism scale was factor analyzed with oblimin rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was acceptable at .88 (Hutcheson & Sofroniou, 1999) and Bartlett’s test of sphericity was significant, $X^2 (36) = 866.36, p < .001$. Based on these
test results, the Gender Essentialism scale was considered appropriate to assess further. The factor analysis revealed one gender essentialism factor with an Eigenvalue of 4.86 which explained 54.02% of the variance. Principal components analysis with oblim rotation produced all item loadings above $\lambda = .50$. The resulting Gender Essentialism scale was statistically reliable ($\alpha = .89$). Relevant items were reverse coded so that higher scores indicated greater endorsement of gender essentialism.

**Biological Gender Beliefs.** The full *Trans Persons Belief* scale (Tee & Hegarty, 2006) was used and then modified after reliability checks were made to its subscales. In Tee and Hegarty (2006), this scale originally produced two separate factors: biological gender beliefs and social gender beliefs. The biological gender beliefs factor was the only factor found to be statistically reliable. Participants rated Biological Gender Beliefs on a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree). An example of an item from the scale is "Gender is determined by biological factors, such as genes and hormones, before birth." Qualtrics randomized the presentation of all items within the scale across all participants. Reliability checks for Study 2 results on this measure found that when the items were split according to these two factors, the Biological Gender Beliefs subscale had good reliability ($\alpha = .85$) while the social gender beliefs subscale did not ($\alpha = .25$). Therefore, only the Biological Gender Beliefs subscale was used in Study 2 analyses (see Appendix A for the items). Higher scores indicated greater endorsement of biological gender beliefs.

**Natural Attitudes/Beliefs About Gender.** For Study 2 data, this 9-item scale had good reliability ($\alpha = .87$). This scale was originally developed to assess for beliefs that correspond with Garfinkel’s (1967) natural attitudes about gender, e.g., that women and men are the only genders, that there is a clear distinction between women and men, and that the traits that make people
women and men are immutable. Participants rated natural attitudes/beliefs about gender on a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree). An example of an item from the scale is "There are only two genders, women and men." Qualtrics randomized the presentation of all items within the scale across all participants. Higher scores indicated greater endorsement of natural attitudes/beliefs about gender.

Authoritarianism. A modified, short version of the Right-Wing Authoritarianism scale (RWA; Zakrisson, 2005) was used in Study 2. The original short version has 15 items, but item number 6 ("The society needs to show openness towards people thinking differently, rather than a strong leader, the world is not particularly evil or dangerous.") was removed due to confusion over this item voiced by research assistants who pre-tested Study 2. Therefore, a 14-item, short version of the RWA was used in Study 2 and had good reliability (α = .94). Participants rated authoritarianism on a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree). An example of an item from the scale is "Our country needs a powerful leader, in order to destroy the radical and immoral currents prevailing in society today." Qualtrics randomized the presentation of all items within the scale across all participants. Relevant items were reverse coded so that higher scores indicated more authoritarianism.

Conservatism. The Conservatism scale (Brewer, 2003) was also used in Study 2. Its moral traditionalism subscale had good reliability (α = .90). Its egalitarianism subscale also had good reliability (α = .92). Participants rated both moral traditionalism and egalitarianism on a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree). An example of an item from the moral traditionalism subscale is "The newer lifestyles are contributing to the breakdown of society." An example of an item from the egalitarianism subscale is "We have gone too far in pushing equal rights in this country." Qualtrics randomized the presentation of all items within
the subscales across all participants. Relevant items were reverse coded so that higher scores indicated more conservatism.

Quality checks. Because this study was conducted online with little control over the quality of the data that participants provide, several questions were inserted into the above described measures to ensure that participants were paying attention to each item and the responses they made. Qualtrics set these items so they were not included in the randomization of measure items. They were set to always appear embedded within the list of items so they would not be randomized to appear first or last. The first quality check was an item appearing among the items for the Gender Essentialism scale (the first scale presented to participants after the vignette ratings). This item was: “People can get tired while filling out surveys, but if you're paying attention choose 'somewhat agree' for this question.” The second quality check was an item inserted into the Authoritarianism scale which was the penultimate scale completed by participants. This item was: “If you're paying attention, choose 'neither agree nor disagree' for this question.” Responding incorrectly resulted in removal of all of that participants’ data (n = 12) in the final analyses. No differences were found between participants who passed and who did not pass these quality checks.

Hypotheses and Analyses

Two hypotheses were tested in Study 2. The first hypothesis is a repetition of the hypothesis from Study 1. The new hypothesis tested the moderating effects of previously untested individual difference factors on the relationships found in Hypothesis 1.

Hypothesis 1: Rejection will be greater and response time will be slower when the target person’s characteristics are perceived as stereotype-inconsistent as opposed to stereotype-consistent.

Hypothesis 2: Individual difference factors such as no friendships with transgender people, not identifying as an ally to transgender people, essentialist beliefs about gender, biological beliefs about gender, natural attitudes/beliefs about gender,
about gender, authoritarianism, and conservatism will strengthen the relationships found in Hypothesis 1 and Hypothesis 2.

As in Study 1, this study sought to understand the factors that contribute to the rejection of a person's self-designated gender. Thus, target genitals were considered stereotype-inconsistent or consistent depending on the target's gender identity. Based on U.S. society's social representations of gender, genitals were considered *stereotype-inconsistent* with gender identity when having a penis was paired with identifying as a woman and having a vagina was paired with identifying as a man in the vignettes. Again, references to stereotype-inconsistencies or stereotype-consistencies between gender characteristics describe participants' *perceptions* that those characteristics are either stereotype-inconsistent or –consistent; *not* that they *in reality are* stereotype-inconsistent or stereotype-consistent.

*Framework for testing hypotheses.* The first hypothesis was tested to replicate Study 1 findings by specifically examining how perceived stereotype (in)consistencies between target’s gender identity and genitals impact rejection and response time. A 2 (gender identity: woman/man) x 2 (genitals: vagina/penis) repeated measures (within-subjects) multivariate analysis of variance (MANOVA) was conducted on rejection scores and response times. The interaction between gender identity and genitals was examined using this technique. The means of the two-way interaction effects between gender identity and genitals as well as gender identity and chromosomes were examined to interpret the predictions of Hypotheses 1. Examination of the means from these interactions would suggest the extent to which stereotype-consistency or stereotype-inconsistency between gender identity and genitals were responsible for significant changes in rejection and response time. The effect size of this interaction was examined to interpret its strength.
To address Hypothesis 2, a repeated measures MANCOVA on rejection and response time included several factors of the perceiver (transgender friendship, transgender ally status, gender essentialism, biological gender beliefs, natural attitudes/beliefs about gender, authoritarianism, moral traditionalism, and egalitarianism) entered as between-subjects covariates. Main effects and interactions were examined. In particular, three-way interaction effects between each covariate, gender identity, and genitals were examined to test the factors in Hypothesis 2. An examination of the means of the interactions would suggest the direction of the impact of the covariates on the relationship between stereotype-(in)consistency of the target's characteristics and rejection and response time. Median splits were created for any significant continuous variables and then they were assessed within the model to help interpret the direction of the variables' effect on the outcomes. By reporting on the effects of the continuous variable first, the strength of the variable could be assessed without a loss of power (see Fitzsimons, 2008). The median-split then allowed for an interpretation of the direction of its effect.

Assumptions of MANOVA/MANCOVA. For the same reasons depicted in Study 1 analyses, assumptions of sphericity were determined to be trivial and the large sample size (N = 190) in Study 2 made analyses robust to even extreme violations of normality. To be certain that the non-normality of the data did not affect the results, outliers were removed (n = 19) and log transformations were conducted and outcomes were compared. As in Study 1, adjustments did not change the outcomes that would have been derived prior to outlier removal or transformation. Outliers were included and non-transformed data were used in the final analyses.

Testing for order effects. Analyses were also conducted to explore the impact of order effect for the gender identity of the target on rejection scores and response times. Dummy variables were created for vignettes presented first that described targets who identify as women
and vignettes presented first that described targets who identify as men (1 = first, 0 = not first). Independent samples t-tests examined differences between presentation of vignettes first or not first stratified by target gender identity on rejection and response time. Since response times were positively skewed and t-tests operate on the assumption of normality, log transformations were conducted and entered into the analyses. The order of presentation of vignettes was randomized in Study 2, so any significant results were not of concern to the outcomes of this study. Instead, results from these tests were considered in the design of the follow-up studies (see Study 3 and Study 5).

Results

Main effects. The two-way repeated measures MANOVA produced no main effects for gender identity or genitals on rejection and response time.

Two-way interaction effects. To test Hypothesis 1, the two-way repeated measures MANOVA was examined for an interaction between genitals and gender identity on rejection and response time. Means and standard errors for this analysis are outlined in Table 6. A significant interaction effect was found between gender identity and genitals on rejection and response time, $F(2, 188) = 403.34, p < .001, \eta^2_p = .81$. As depicted in Figure 4, univariate tests (ANOVA) demonstrated rejection scores were higher when gender identity and genitals were stereotype-inconsistent (woman/penis, man/vagina) compared to when gender identity and genitals were stereotype-consistent (woman/vagina, man/penis), $F(1, 189) = 805.42, p < .001, \eta^2_p = 0.81$. Univariate tests demonstrated response time was slower when gender identity and genitals were stereotype-inconsistent compared to when gender identity and genitals were stereotype-consistent, $F(1, 189) = 18.85, p < .001, \eta^2_p = 0.09$. 
**Initial moderation analyses.** To test Hypothesis 2, a two-way repeated measures MANCOVA was conducted to identify certain covariates as moderators of the relationship between genitals and gender identity on rejection and response time. To accomplish this, transgender friendship, transgender ally status, gender essentialism, biological gender beliefs, natural attitudes/beliefs about gender, authoritarianism, and the moral traditionalism and egalitarianism subscales were entered as covariates. The repeated measures MANCOVA revealed a significant main effect of gender essentialism on rejection and response time, $F(2, 184) = 60.38, p < .001, \eta_p^2 = 0.40$. This analysis also revealed a significant main effect of transgender ally status on rejection and response time, $F(2, 184) = 7.19, p < .01, \eta_p^2 = 0.07$, such that rejection scores were higher for participants who did not identify as an ally to transgender people regardless of target genitals and gender identity. There were also significant three-way interactions between gender identity, genitals and gender essentialism, $F(2, 184) = 35.34, p < .001, \eta_p^2 = 0.28$, and gender identity, genitals, and transgender ally status, $F(2, 184) = 6.96, p < .01, \eta_p^2 = 0.07$. These interactions are described below after running analyses again excluding the following measures which all had no significant interactions with genitals and gender identity: natural attitudes/beliefs about gender, biological gender beliefs, authoritarianism, egalitarianism, or moral traditionalism.

**Moderation of gender essentialism.** After initial analyses were conducted including all contact and attitudes/beliefs measures, another model was created in order to isolate the effect of the significant factors. Gender essentialism and transgender ally status were entered as the sole covariates in a two-way repeated measures MANOVA. There was a significant main effect of gender essentialism on rejection and response time, $F(2, 184) = 60.38, p < .001, \eta_p^2 = 0.40$. There was also a significant interaction effect between gender identity, genitals, and gender
essentialism on rejection and response time, $F(2, 184) = 35.34, p < .001, \eta_p^2 = 0.28$. Univariate tests (ANOVA) for the final model revealed that the three-way interaction between gender identity, genitals, and gender essentialism was driven by rejection, $F(1, 185) = 71.07, p < .001, \eta_p^2 = 0.28$. Contrast effects in the MANOVA indicated a linear relationship for both rejection ($p < .001$) and response time ($p < .01$) in this three-way interaction. In order to interpret the significant three-way interaction effect, a dichotomous variable was created from a median split of gender essentialism. Means and standard errors for significant effects of this dichotomized variable are outlined in Table 7. As depicted in Figure 5, the univariate tests on the interaction between gender identity, genitals, and the dichotomized gender essentialism variable revealed that when gender identity is stereotype-consistent with genitals (woman/vagina, man/penis), rejection is low and there is no effect of essentialist beliefs. However, when gender identity and genitals are stereotype-inconsistent (woman/penis, man/vagina), rejection is significantly higher among individuals with high essentialist beliefs, $F(1, 185) = 16.59, p < .001, \eta_p^2 = 0.08$ (see Figure 5). Univariate tests demonstrated no significant three-way interaction between gender identity, genitals, and essentialism on response time.

**Moderation of transgender ally status.** Means and standard errors for significant effects of transgender ally status are outlined in Table 8. The same repeated-measures ANOVA that included the continuous essentialism variable revealed a significant main effect of transgender ally status on rejection and response time, $F(2, 184) = 60.38, p < .001, \eta_p^2 = 0.07$. There was also a significant interaction effect between gender identity, genitals, and transgender ally status on rejection and response time, $F(2, 184) = 6.96, p < .01, \eta_p^2 = 0.07$. As depicted in Figure 6, univariate tests revealed that when gender identity is stereotype-consistent with genitals, rejection is low and there is no effect of transgender ally status. However, when gender identity
and genitals are stereotype-inconsistent with genitals, rejection is significantly higher among individuals who did not identify as an ally to transgender people, $F(1, 185) = 11.49, p < .01, \eta^2_p = 0.06$ (see Figure 6). A repeated measures ANOVA demonstrated no significant three-way interaction between gender identity, genitals, and transgender ally status on response time.

*Order effects.* Independent samples t-tests revealed no significant differences between order of vignette presented on rejection scores (data not shown). There were significant order effects on response time (see Table 9). Response times were faster on vignettes that described targets who identify as men when vignettes that described targets who identify as women were presented first. Response time was also faster on the vignette that described targets who identify as women and had a vagina when vignettes that described targets who identify as men were presented first. No order effect was found for vignettes that described targets who identify as women and had a penis when vignettes that described targets who identify as men were presented first.

**Summary**

First, Study 2 demonstrated a repetition of Study 1 results, but with isolated characteristics. Study 2 examined how perceived (in)consistencies between a target person’s genitals and gender identity affect perceivers’ rejection and response time. Results supported the prediction of Hypothesis 1. Rejection was greater when genitals and gender identity were perceived as stereotype-inconsistent as opposed to stereotype-consistent. The effect size of the interaction between genitals and gender identity on rejection was very large. Response time was slower when genitals and gender identity were perceived as stereotype-inconsistent as opposed to stereotype-consistent. There was a medium effect size for this interaction. Based on the findings from Study 1, these results from Study 2 were expected.
Study 2 also expanded on the results of Study 1 by examining factors predicted to moderate the relationships found between target gender characteristics and the outcomes of rejection and response time. Some of the predicted factors described in Hypothesis 2 were found to affect the relationship between perceived stereotype-inconsistencies of the target characteristics and rejection, but not response time. First, stereotype-inconsistency between genitals and gender identity resulted in greater rejection among participants who scored high on gender essentialism. When testing essentialism as a continuous variable, its interaction with genitals and gender identity resulted in a very large effect size. This finding supports the research by Bastian and Haslam (2007) who identified that endorsement of essentialist attitudes is related to a preference for stereotype-consistency over stereotype-inconsistency when judging others. Second, stereotype-inconsistency between genitals and gender identity resulted in greater rejection among participants who did not identify as allies to transgender people. There was a medium effect size describing this three-way interaction. This finding may suggest that identifying as an ally to transgender people has similar benefits to reductions in misgendering as ally identification with other groups has on lower prejudiced attitudes toward those groups (see Stone, 2009; Stotzer, 2009). All other measures—biological gender beliefs, natural attitudes/beliefs about gender, authoritarianism, and conservatism—were not found to be significant moderators of the relationship between genitals and gender identity on rejection and response time. This may suggest that while these measures correspond to prejudiced outcomes toward certain groups, they may not similarly correspond to the processes involved in misgendering.

Analyses were also conducted to test the order effect of target gender identity on rejection scores and response times. There were no order effects having to do with the target gender
identity on rejection scores. There were order effects on response times such that people were typically faster at responding the second time regardless of the gender identity of the target presented first. There was only one condition for which response time was not affected by order. Response time did not significantly change for targets who identify as women and have a penis when presented with targets who identify as men first. The key piece of this data that was applied to later studies is that rejection scores were not affected by presentation of targets who identify as one gender before another.
Chapter 5:

Study 3 – Distraction During Schema Adjustment

Study 3 extended Study 2 by examining individuals who accept rather than reject target people's self-designated gender, even when it conflicts with information about targets’ biological characteristics. The hypothesized model (Figure 1) predicts that all individuals automatically recognize stereotype-inconsistent target characteristics, but not all people necessarily respond with the same judgments (Ajzen, 2005; Bargh & Chartrand, 1999; Devine, 1989; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). Gilbert (1989) has suggested that some individuals may "correct," or adjust, their initial automatic judgments (also see Gilbert & Hixon, 1991). Adjustments during the gender attribution process may lead to endorsement of gender labels that affirm a target’s self-designated gender. Researchers have claimed that this process of adjusting is unstable because it requires more cognitive resources than merely applying stereotypes and moving on (Bessenoff & Sherman, 2000; Boenke, 2003; Cooper, 2000; Devine, 1989). The stability of adjusting during the gender attribution process was assessed in Study 3 to better understand the extent to which stereotyped ways of thinking about gender are automatic and are only overcome by explicit cognitive attention applied to adjust such thinking. Therefore, Study 3 examined whether or not those who adjust their attributions toward gender affirmation become more rejecting of a target’s gender identity when under cognitive load.

The design for this experiment was influenced by the impact of cognitive load on sexist language use among people who scored low on sexism in Cralley and Ruscher’s (2005) studies. Other studies have demonstrated similar effects of cognitive load on the tendency to engage in stereotyping (e.g., Gilbert & Hixon, 1991; Harris & Perkins, 1995; Sherman, Macrae, Bodenhausen, 2011). Study 3 was designed to categorize people as adjusters through the gender
attributions they made on a first set of vignettes and then test the impact of a distraction task on their rejection scores and response times as they rated a second set of vignettes. This procedure for categorizing adjusters over other methods of categorization allowed for a strict test of the instability of adjustment processes when distracted. Changes in rejection scores while under cognitive load were assessed to find out if misgendering occurs—even among those least likely to misgender—as a result of the automaticity of gender stereotyping. Adjusters who fail to adjust when under cognitive load would demonstrate a cognitive reliance on stereotypes as the default method for making a gender attribution. Such stereotypes may be interpreted as central to our current social representations of gender if they represent the default to which all people turn (see Abric, 2001). Simultaneously, differences between adjusters and those who do not adjust were explored to help identify possible other methods for identifying adjusters in future research.

**Participants**

Study 3 participants were 201 individuals from MTurk who received $0.50 each for their participation in the study. As in Study 2, the same parameters on MTurk were set to recruit participants. Of the 201 individuals recruited, 25 (12.44%) did not pass quality checks, similar to those used in Study 2, and were excluded. Also, one participant indicated being from "CA" which may have indicated that the participant was from either Canada or California. Without knowing for certain, and since this study was deliberate in its focus on United States participants, this one participant was excluded from analyses. Therefore, the final sample in Study 3 included 175 participants.

Table 10 shows full demographic data on the 175 participants in Study 3. Participants ranged from 18 to 74 years old ($M = 35.26, SD = 32.00$). Participants were politically oriented slightly liberal or left of neutral/moderate ($M = 3.08, SD = 3.00$). Most participants did not have
a gender identity independent from the gender assigned to them at birth, they were assigned as
female at birth, they thought other people correctly perceive their gender, and they had a constant
and clear attraction to people who are the binary opposite of the gender assigned to them at birth.
On demographics, participants described the area surrounding their current residence as
suburban, they did not identify as Hispanic or of Latin American decent, they identified as White
or Caucasian, and they had less than a 4-year college degree. Most participants considered
themselves to be allies to transgender people and allies to lesbian, gay, and bisexual (LGB)
people. However, most participants did not personally know a transgender or genderqueer
person. Of the participants who did personally know a transgender person, most knew at least
one person who identified as a woman

Method

Study 3 was conducted completely on the internet using MTurk, which directed
participants to a Qualtrics survey. Participants received two sets of vignettes that they were asked
to rate and then answered background information about themselves.

Vignettes. In Study 3, participants were presented with two sets of vignettes each
describing target people with gender-related characteristics and filler characteristics. Filler
characteristics were meant to distract participants from determining that the only variables under
examination were gender identity and genitals. The first set and second set of vignettes were
identical to each other except the second set was presented with a distraction task. Study 3
employed a different design for the vignettes and ratings than Study 2 in an attempt to reduce the
possibility of rehearsal between each set of vignettes. If the vignettes were the same each time,
participants may rehearse a particular rating method during the first set of vignettes and then
apply this method to the second set of vignettes, despite the presence of the distraction.
Therefore, the design of the vignettes and vignette ratings described in Study 2 were altered in an attempt to reduce the potential impact of rehearsing responses to familiar gender characteristic combinations.

First, descriptions of the target people included information about the age and personality of the target person in addition to information about the target person's gender in each vignette. Participants were asked to rate these filler characteristics on age and personality scales that were randomly presented in addition to the Woman Attribution and Man Attribution scales described in Study 2. Filler characteristics were asked to be rated in an attempt to remove participants' primary focus away from the gender content of the study. The gender scales were the only ones used for analyses.

Second, participants read the vignettes and made their ratings on separate screen pages. Participants were instructed to “form an impression” of the target person in each vignette because they were then asked questions about that target on the next page. Participants did not know what they would be asked on the next page; just that they may be asked about the participants' gender, age, or personality. They had to rely on the impression they formed about the target person on the page prior rather than have the description available to use as a reference when rating the target person’s gender.

Third, results from Study 2 found that people tend to reject target people who identify as women and target people who identify as men in similar ways—e.g., they score higher on rejection when gender identity and genitals are stereotype-inconsistent than stereotype-consistent. Furthermore, Study 2 found that there were no order effects related to rejection of targets gender identity. Thus, participants were presented with information about target people who identify as men in the first set and then about target people who identify as women in the
second set to further minimize rehearsal of responses between each set. This helped create parallel sets of ratings to test the effect of the presence of a distraction versus absence of a distraction on gender attributions.

Vignettes included the following information: (a) gender identity: personally thinks of themself as a woman/as a man; (b) genitals: has a vagina/penis; (c) personality: likes attending big parties/spending time with one friend at a time on the weekend; and (d) age: enjoys reading the news on the internet/in the local newspaper for leisure. Gender identity was split between the first set (men) and the second set (women). Genitals were manipulated in both sets (vagina/penis). The rest of the characteristics, personality and age, were filler characteristics. The following is an example of a vignette that appeared in the first set:

K. S. thinks of themself as a man and has a vagina.
K. S. likes to hang out with one friend at a time on the weekends.
For leisure, K. S. enjoys reading the news on the internet.

A total of 6 vignettes were rated in the first set and 6 in the second set, but only 2 vignettes each were relevant to analyses. The 2 vignettes in each set that were paired with the gender rating scales were used in analyses. For these vignettes, filler characteristics were held constant. The characteristics used for vignettes paired with gender ratings were always: (1) likes to attend big parties with friends on the weekends; and (2) enjoys reading the news on the internet for leisure. The remaining 4 vignettes were filler meant to make gender less salient for participants. Two vignettes were paired with age ratings and two with personality ratings, but these ratings were not used in the analyses. Filler characteristics for these vignettes were randomly distributed since age and personality ratings did not pertain to the research question.

**Distraction task.** Before rating the second set of vignettes, participants were told that they were going to complete a similar task in which they simultaneously had to pay attention to a randomly blinking blue dot on the screen. Participants previewed the dot and indicated that they
did, in fact, see the dot blinking on the screen before continuing on. If participants indicated not seeing the dot blinking on the screen, they skipped the second vignette rating task and completed the rest of the study. If they did see the blinking dot, they were told they would have to count the number of times the dot blinked on the screen during their time spent on the page reading the vignette. They were informed that after they finished reading the vignette, the next screen would ask them to recall the number of times the dot blinked and then answer questions about the target person from the vignette on the previous page. They were told that their accuracy counted, but this was not actually calculated for this study since the dot was only meant to distract participants while they completed the vignette ratings.

The blue dot was designed as a 64x64 pixel GIF animation image (color: #00a3e8) using Adobe Photoshop CS6 software. The blinking of the dot was designed to be challenging, but not impossible to count in periphery on the screen while participants’ centralized attention was on reading the vignettes. With over 100 looped frames, the dot was designed to appear for 200 milliseconds at a time and, using a random number generator, disappear for intervals varying from 200 to 1500 milliseconds. Each of the 6 vignettes had a separate dot assigned to it that blinked at different intervals. Each dot was placed left-aligned just above the rating scales and below the vignette descriptions so that participants could see the blinking dot even if scrolling down the page to click to continue on. The page after reading the vignettes asked participants to report the number of times the dot blinked and then make their ratings of target people on gender, age, or personality.

Response time. Qualtrics was programmed to record two response times for participants that were averaged together to create one overall response time. These two times were: (1) the time it took perceivers to initially read the vignettes; and (2) the time it took perceivers to rate the
vignettes (response time). Record of time started when the pages loaded and ended when the participant clicked to continue to the next survey page. Response times were recorded in seconds.

Rejection scores. For each vignette, participants were asked to evaluate the target person's gender on two separate scales: (1) the degree to which they thought the person described was a woman (Woman Attribution scale; 1 = definitely a woman, 7 = definitely not a woman); and (2) the degree to which they thought the person described was a man (Man Attribution scale; 1 = definitely a man, 7 = definitely not a man). Rejection of the target person’s self-designated gender was operationalized as the degree to which a participant evaluated the target person’s gender as different from the description of the target person’s gender identity (e.g. definitely a man when the target person identifies as a woman). Rejection of a person’s self-designated gender as a woman was the average score between the Woman Attribution scale and the Man Attribution scale, in which the Man Attribution scale was reverse coded. Similarly, rejection of a person’s self-designated gender as a man was the average score between both scales in which the Woman Attribution scale is reverse coded. The measures were separated in the study to allow participants the option to distinguish between judging a target person as neither a woman nor or man or as both a woman and a man. Higher scores meant greater rejection.

Adjusters and Defaulters. The first set of vignettes produced rejection scores in which participants received no distraction task. Rejection scores from this first set were used to create a “schema group” of individuals called adjusters. Adjusters were considered to be people who engaged in schema adjustment or used an identity schema to make a gender attribution about target people who were perceived to have stereotype inconsistencies between their gender identity and genitals (e.g., a target person who identifies as a man and has a vagina). Participants
were categorized as adjusters when they scored low on rejection of target people's gender identity (1.00 to 1.99). In contrast, participants were categorized as defaulters when they scored high on rejection of target people's gender identity (2.00 to 7.00). Based on this criteria, a dummy-coded (binary) variable (“1” = adjusters, “0” = defaulters) was created indicating 25 participants in the sample were adjusters and 151 were defaulters.

**Hypotheses and Analyses**

Study 3 sought to test the following two hypotheses:

**Hypothesis 1:** Rejection will be greater when adjusters are distracted as opposed to when they are not distracted when genitals are perceived as *stereotype-inconsistent* with gender identity.

**Hypothesis 2:** Rejection will be greater when defaulters judge *stereotype-inconsistent* as opposed to *stereotype-consistent* genitals and gender identity regardless of the presence or absence of a distraction task.

The presence or absence of a distraction task represents the moderating cognitive factor described in the proposed model (Figure 1). The presence of the distraction task was predicted to make adjusters behave more like defaulters in the gender attributions they make. In other words, adjusters’ rejection scores were predicted to increase as a function of the distraction task being present as compared to the distraction task being absent. This outcome was expected to occur when adjusters were specifically judging target people who have *stereotype-inconsistent* genitals and gender identities as opposed to *stereotype-consistent* genitals and gender identities. As previously, genitals were considered *stereotype-inconsistent* with gender identity when having a penis was paired with identifying as a woman and having a vagina was paired with identifying as a man in the vignettes. Again, references to stereotype-inconsistencies or stereotype-consistencies between gender characteristics describe participants' *perceptions* that those characteristics are either stereotype-inconsistent or –consistent; *not* that they *in reality are*
stereotype-inconsistent or stereotype-consistent. No predictions were made about response time for this study. But since response time was relevant to processes of gender attribution in previous studies, response time was explored in the analyses.

*Framework for testing hypothesis.* The hypothesis was tested with a 2 (genitals: stereotype-inconsistent/consistent) x 2 (distraction task: absent/present) repeated measures MANOVA on rejection and response time. This technique was first conducted among adjusters to test Hypothesis 1, then among defaulters to test Hypothesis 2. Since rejection scores from Task 1 (distraction task absent) were used to divide adjusters and defaulters into separate groups in the first place, they would logically have different rejection scores at that level. Thus, the groups were examined through separate analyses and the means and plots of their data were compared and contrasted. Main effects and two-way interaction effects were examined for each analysis. In particular, the two-way interaction between distraction task and target characteristics was examined to determine if adjusters’ rejection scores significantly increased during the distraction task when judging stereotype-inconsistent target characteristics. The effect size of this interaction was examined to interpret its strength. The separate repeated measures MANOVA for defaulters tested Hypothesis 2. The two-way interaction between distraction task and target characteristics was examined to determine if defaulters rejection scores did not significantly change during the distraction task as a function of stereotype-(in)consistent target characteristics. Non-parametric tests (Mann Whitney U) were conducted to explore differences between adjusters and defaulters on the outcome variables. In particular, differences in response time were explored when distraction was absent and differences in both response time and rejection were explored when distraction was present. Differences in rejection when distraction was absent were not reported since this measure was used to distinguish the two group in the first place. T-
tests were also conducted to explore differences between adjusters and defaulters on various demographic variables and on other measures in the study (e.g., essentialism).

Assumptions of MANCOVA. For the same reasons depicted in Study 1 and 2 analyses, assumptions of sphericity were determined to be trivial since there were 2 levels in each factor. The analyses were split into two groups with different sample sizes for this study. The group of defaulters had a large sample size ($n = 150$) making it robust to even heavy-tailed distributions (Wilcox, 2005). To be certain that the non-normality of the data did not affect the results, analyses were conducted both with outliers included and with outliers removed ($n = 9$). This helped outcome variables that were previously non-normal reach normality. As in Study 1 and 2, removal of outliers did not change the results in this study other than slightly strengthening the effect sizes of the significant outcomes that had been found. For the same reasons as in the previous studies (see Orr, Sackett, & DuBois, 1991), outliers were included in the final analyses. The adjusters group in the present study had a smaller sample size ($n = 25$). For this group, outcomes were only slightly non-normal and demonstrated light-tailed distributions. According to Fields (2009), regardless of the smaller sample size, the slight non-normality was not a concern for the robust MANOVA test. Thus, the MANOVA for adjusters was also conducted without removing outliers and without data transformation. Non-parametric tests (Mann Whitney U) were used when examining differences between adjusters and defaulters on rejection and response time.

Results

Adjusters and Defaulters. Table 8 depicts values that describe differences between adjusters and defaulters on categorical variables. Adjusters ranged from 18 to 63 years old and were younger ($M = 29.64, SD = 9.22$) than defaulters ($M = 36.10, SD = 12.41$), $t(1, 39.95) = -$
3.07, \( p < .01 \). Adjusters were politically oriented slightly more liberal (\( M = 2.33, SD = 2.00 \)) than defaulters (\( M = 3.08, SD = 3.00 \)), \( t (1, 174) = -2.73, p < .01 \). Adjusters were less gender essentialist (\( M = 3.34, SD = 1.74 \)) than defaulters (\( M = 4.50, SD = 1.21 \)), \( t (1, 27.94) = -3.22, p < .01 \). Adjusters were also less authoritarian (\( M = 2.48, SD = 1.52 \)) than defaulters (\( M = 3.10, SD = 1.24 \)), \( t (1, 174) = -2.24, p < .001 \). Of the 25 adjusters, a significantly greater percentage than defaulters had a gender identity that was independent from the one assigned to them at birth, were assigned as female at birth, and had sexual attractions that were fluid, flexible, and gender-irrelevant or included same-gender attractions (sometimes exclusively). Adjusters and defaulters did not differ significantly on how they think others perceive their gender. On demographic variables, adjusters and defaulters did not differ in the area surrounding their current residence, their ethnicity, race, or education. They also did not differ significantly by status as an ally, or personally knowing a transgender or genderqueer person. A greater percentage of adjusters than defaulters indicated personally knowing a transgender person who identifies as a man and personally knowing an individual who identifies as genderqueer. A greater, marginally significant percentage of adjusters than defaulters indicated personally knowing a transgender person who identifies in some other way not listed. Adjusters did not differ from defaulters on knowing transgender people who self-designate their gender as women.

**Main effects among adjusters.** The repeated-measures MANOVA was examined for main effects of schema group, target characteristics, and distraction task. Means and standard errors for these main effects are outlined in Table 11. The analysis demonstrated a main effect of target characteristics on rejection and response time, \( F (2, 23) = 6.95, p < .01, \eta^2_p = .38 \). Univariate tests revealed rejection was greater when target characteristics were stereotype-inconsistent compared to stereotype-consistent, \( F (1, 24) = 11.56, p < .05, \eta^2_p = .21 \). Univariate tests also revealed
response time was slower when target characteristics were stereotype-inconsistent compared to stereotype-consistent, $F(1, 24) = 519.20, p < .01, \eta^2_p = .25$.

The repeated measures MANOVA demonstrated a main effect of distraction task on rejection and response time, $F(2, 23) = 3.99, p < .05, \eta^2_p = .23$. This effect was driven by rejection such that univariate tests revealed rejection was greater when the distraction task was present compared to when it was absent, $F(1, 24) = 12.96, p < .05, \eta^2_p = .25$. There was no significant main effect of distraction task on response time.

**Two-way interaction effects among adjusters.** The repeated measures MANOVA was examined for two-way interactions between target characteristics and distraction task on rejection and response time. Means and standard errors for these interactions are outlined in Table 11. A significant interaction effect was found between target characteristics and distraction task on rejection and response time, $F(2, 172) = 6.63, p < .01, \eta^2_p = .37$. As depicted in Figure 7, this effect was driven by a significant effect on rejection scores. Univariate tests revealed rejection was greater among adjusters when target characteristics were stereotype-inconsistent compared to stereotype-consistent, but only when the distraction task was present, $F(1, 24) = 13.80, p < .01, \eta^2_p = 0.37$. There was no significant interaction effect between target characteristics and distraction task on response time.

**Main effects among defaulters.** The repeated-measures MANOVA was examined for main effects of target characteristics and distraction task. Means and standard errors for these main effects are outlined in Table 12. The analysis demonstrated a main effect of target characteristics on rejection and response time, $F(2, 148) = 243.98 p < .001, \eta^2_p = .77$. This effect was driven by rejection such that univariate tests revealed rejection was greater when target characteristics were stereotype-inconsistent compared to stereotype-consistent, $F(1, 149) =$
There was no significant main effect of schema group on response time.

The repeated measures MANOVA demonstrated a main effect of distraction task on rejection and response time, \( F(2, 148) = 3.25, p < .05, \eta^2_p = .04 \). This effect was driven by a marginally significant effect on response time such that univariate tests revealed response time was faster when the distraction task was present (Task 2) compared to when it was absent, \( F(1, 148) = 3.68, p = .06, \eta^2_p = .02 \). There was no significant main effect of distraction task on rejection.

**Two-way interaction effects among defaulters.** The repeated measures MANOVA was examined for two-way interactions between target characteristics and distraction task on rejection and response time. There were no significant interaction effects between target characteristics and distraction task on rejection or response time. Means and standard errors for interaction effects are outlined in Table 12. Figure 7 shows the non-significant interaction among defaulters alongside the significant interaction found for the same effect among adjusters.

**Comparing adjusters and defaulters.** Non-parametric tests were conducted to explore differences between adjusters and defaulters in the absence of distraction on response time and in the presence of distraction on rejection and response time. There was a marginally significant difference between adjusters and defaulters on response time in the absence of distraction such that adjusters were faster than defaulters at making a gender attribution when the target had stereotype-inconsistent characteristics (\( U = 1448.00, p = .06 \)). Adjusters were less rejecting than defaulters when targets had stereotype-inconsistent characteristics when distraction was present (\( U = 869.50, p < .001 \)). There were no differences between adjusters and defaulters on response time when the distraction was present.
Summary

Study 3 examined whether adjusters' rejection scores would increase when they were distracted compared to when they were not distracted while rating target people with stereotype-inconsistent genitals and gender identity. Results supported the prediction of Hypothesis 1. Adjusters became more rejecting under cognitive load when judging targets with stereotype-inconsistent characteristics. The effect size for this effect was very large suggesting that the process of adjusting is unstable due to the cognitive attention required to adjust from otherwise automatic stereotypical thinking about gender (Bessenoff & Sherman, 2000; Boenke, 2003; Cooper, 2000; Devine, 1989). In support of the prediction in Hypothesis 2, defaulters remained just as rejecting under cognitive load as when no distraction was present. Defaulters were more rejecting when targets characteristics were stereotype-inconsistent regardless of the distraction task. This finding was expected considering the findings from the pervious studies and that defaulters made up such a large portion of the sample.

Interestingly, a marginally significant finding suggests that defaulters became faster at making a gender judgment in the presence of a distraction task compared to its absence. This outcome may be confounded by defaulters rehearsing the schema they applied during the first task making them more efficient at making gender attributions even in the presence of a distraction. But this effect was only marginally significant and had a small effect size.
Chapter 6:

Study 4 – Pilot Testing Gender Expression (Clothing) Items

Study 4 piloted new target gender characteristics having to do with clothing preferences. Study 5 used results from this study to test clothing as the moderating target factor described in the proposed model (Figure 1). To ensure that the clothing preferences manipulated in the vignettes of Study 5 paralleled each other, I assessed the extent to which different articles of clothing and accessories are perceived to be exclusively worn by women or exclusively worn by men.

Articles of clothing may be considered *peripheral* elements of social representations about gender since trends in clothing for each gender change over time. While a strong association may be made between clothing items and particular genders, these associations may be confounded by the social desirability of what is considered appropriate for each gender in American society at a given point in time. To ensure that social trends of certain clothing items would not confound people’s perceptions when making gender attributions, I also assessed the extent to which wearing an item of clothing is socially desirable for women or for men. Thus, I was able to control for both gender exclusivity and social desirability in current judgments about target clothing preferences in Study 5 by identifying clothing items that were strong on both measures through this pilot study. The characteristics with the strongest ratings were used in vignettes describing clothing preferences of target persons in Study 5. Since the pilot was exploratory and sought to identify variables used in the follow-up study, no hypotheses were proposed. Below is an explanation of the study design, results, and brief interpretation of the results for their application in Study 5.
Participants

Study 4 participants were 84 individuals from Amazon’s Mechanical Turk (MTurk) who received $0.25 each for their participation in the study. As in Study 2 and Study 3, the same parameters on MTurk were set to recruit participants. Of the 84 individuals recruited, 16 (19.1%) of the participants did not pass the quality checks. Therefore, the final sample used in Study 2 was 68 participants.

Table 13 shows full demographic data on the 68 participants in Study 4. Participants ranged in age from 19 to 62 years old ($M = 36.06$, $SD = 34.00$). Participants indicated a political orientation that was slightly liberal leaning or left of moderate ($M = 3.38$, $SD = 1.68$). Most participants did not have a gender identity independent from the gender assigned to them at birth, were assigned as female at birth, thought other people correctly perceive their gender, had a constant and clear attraction to people who are the binary opposite of the gender assigned to them at birth, did not identify as Hispanic or of Latin American decent, identified as White or Caucasian, described the area surrounding their current residence as suburban, and had a 4-year college degree or higher.

Method

For Study 4, participants were directed from MTurk to a Qualtrics survey where they were asked to determine the gender exclusivity and social desirability of various articles of clothing and accessories. These items are listed in Table 10. Items with the strongest ratings were considered for use in the vignettes describing target people’s clothing preferences in Study 5.

Gender Exclusivity. The gender exclusivity measure asked participants to determine the extent to which each item was only worn by women (Exclusively for Women; 1 = Never, 7 = Always) and the extent to which each item was only worn by men (Exclusively for Men; 1 =
Never, 7 = Always). The strength of an article of clothing or accessory on its gender exclusivity was defined by the mean difference between these two scores. Exclusively for Men scores were subtracted from Exclusively for Women scores to produce mean difference scores that were either positive or negative. Items with positive scores that were the farthest away from 0 were considered to have the strongest gender exclusivity for women. Items with negative scores that were the farthest away from 0 were considered to have the strongest gender exclusivity for men.

*Social Desirability.* The social desirability measure asked participants to determine the extent to which each item is desirable for women to wear (Desirable for Women; 1 = Never, 7 = Always) and the extent to which each item is desirable for men to wear (Desirable for Men; 1 = Never, 7 = Always). The strength of an article of clothing or accessory on its social desirability was defined by the mean difference between these two scores. Desirable for Men scores were subtracted from Desirable for Women scores to produce mean difference scores that were either positive or negative. Items with positive scores that were the farthest away from 0 were considered to have the strongest social desirability for women. Items with negative scores that were the farthest away from 0 were considered to have the strongest social desirability for men.

**Results**

Mean difference scores on Gender Exclusivity suggested that bras and tuxedos had the highest gender exclusivity ratings for women and men, respectively (see Table 14). Mean difference scores on Social Desirability suggested that dresses and cologne had the highest social desirability ratings for women and men, respectively (see Table 14). Correlations between gender exclusivity and social desirability for dresses, tuxedos, bras, and cologne are expressed in Table 15. Dresses for women and tuxedos for men are more highly correlated than any of the following: bras for women and tuxedos for men, dresses for women and cologne for men.
Summary

Study 4 explored and attempted to identify two opposing characteristics that would be viewed as similarly socially desirable for women and men to be used in vignettes for Study 5. To identify these clothing characteristics the mean difference scores for items' gender exclusivity and social desirability ratings, the correlations between the most exclusive and socially desirable items, and some contextual features of the items as they are worn in American society were all considered. Dresses and tuxedos were chosen to include in the vignettes for Study 5 for several reasons. First, both received high ratings on gender exclusivity and social desirability. On gender exclusivity, dresses ranked sixth for women and tuxedos ranked first for men. On social desirability, dresses ranked first for women and tuxedos ranked second for men. Although bras for women had a higher correlation between gender exclusivity and social desirability than dresses, dresses for women were still highly correlated on both these measures as were tuxedos for men. In the end, either bras or dresses could have been chosen based on statistics alone, but dresses were preferred since they are complementary to tuxedos in several ways. They could easily be adapted into a parallel narrative in the vignettes because they both are articles of clothing rather than accessories, they are worn on the majority of the body rather than a part of the body, and they are visibly worn on the outside of the body rather than as a scent or undergarment. Thus, dresses and tuxedos were selected as the strongest fit for inclusion in the vignettes in Study 5.
Chapter 7:

Study 5 – Gender Expression on Schema Adjustment

One way to understand the current state of social representations of gender in U.S. society is to assess the stability of adjusters’ gender schema under different conditions set by the characteristics of the target. The manipulation of cognitive load in Study 3 demonstrated that adjusters’ method for affirming target gender identity was destabilized by a cognitive manipulation. But does their method hold up when normative expectations of the target are manipulated? Kahneman and Miller (1986) suggested that social norms associated with a particular group can inform people’s visualizations of those groups. Adjusters supposedly use an identity-based schema when making gender attributions in the face of stereotype-inconsistencies between genitals and gender identity. New expectations based on their schema developed around the gender identity of the target have yet to be assessed. Research has suggested that expectations related to group norms often result in asymmetrical judgments between groups (e.g., Hegarty & Pratto 2001). If gender identity is a strong social representation of gender for adjusters, then adjusters should not become more rejecting when characteristics of the target (other than just genitals) are stereotype-inconsistent. If they do, then one interpretation is that adjustment using an identity-based schema results in the development of or strengthening of norms newly associated with gender identity.

As defined in the proposed model (Figure 1), gender exclusive and socially desirable clothing items from Study 4 were used to test clothing preferences as an additional feature of the target that adjusters may associate with the targets’ gender identity (Figure 1). There were three reasons for examining the impact of clothing. First, Study 1 did not distinguish between gender identity and clothing. Clothing was described and stereotypically-paired with descriptions of the
target’s gender identity. But for a multiplicity of reasons people do not always prefer to dress stereotypically in accordance with their gender, so they may be misgendered as a result. Second, Kessler and McKenna (1978) described clothing as the "cultural genital" because the association of certain types of clothing with certain genders led people to expect certain genitals to be there even when unseen. I was interested in determining the simultaneous impact of "seeing" (reading about) both genitals and information about clothing on people's gender judgments. Third, clothing preferences, unlike genitals, have to do with social norms. As such, clothing was a reasonable choice for manipulating norms to test its effects on adjusters’ rejection. Study 5 tested what would happen if these clothing-based expectations did not stereotypically match up with the person's gender identity and, instead, matched up with the targets’ genitals.

The added effect of clothing on rejection and response time was assessed in the context of targets who had stereotype-inconsistent genitals and gender identity. Study 5 specifically tested the extent to which adjusters' rejection scores and response times changed in this context when information about stereotype-inconsistent clothing was included. Originally, adjusters were grouped as such based on the fact that they had low rejection scores for targets with stereotype-inconsistent gender identity and genitals. In this context, stereotype-inconsistency between gender identity and clothing was predicted to result in higher rejection scores among adjusters. In other words, the conclusion could be made that gender identity is not a central social representation of gender for adjusters if a social norm (clothing) is prioritized in their judgments. If gender identity is truly central for adjusters, they should not become more rejecting in the face of target clothing preferences that are stereotype-inconsistent with target gender identity.

**Participants**
Study 5 participants were 236 individuals from MTurk who received $0.50 each for their participation in the study. As in Study 2 through Study 4, the same parameters on MTurk were set to recruit participants. Of the 236 individuals recruited, 24 (10.17%) did not pass the quality checks, similar to those used in Study 2 and 3, and were excluded. Two participants also did not complete all of the conditions in the study. Therefore, the final sample used in Study 5 was 210 participants.

See Table 16 for the full demographic data on participants in Study 5. Participants ranged from 18 to 74 years old ($M = 38.05$, $SD = 35.00$). Participants were politically oriented slightly liberal or left of neutral/moderate ($M = 3.34$, $SD = 3.00$). Most participants did not have a gender identity independent from the gender assigned to them at birth, were assigned as female at birth, thought other people correctly perceive their gender, and had a constant and clear attraction to people who are the binary opposite of the gender assigned to them at birth. On demographics, most participants described the area surrounding their current residence as suburban, did not identify as Hispanic or of Latin American decent, identified as White or Caucasian, and had less than a 4-year college degree. Most participants did not consider themselves to be allies to transgender people, but considered themselves to be allies to lesbian, gay, and bisexual (LGB) people. Most did not personally know a transgender or genderqueer person. Of the participants who did know a transgender person, most knew at least one person who identifies as a woman.

**Method**

Study 5 was conducted completely on the internet using MTurk which directed participants to a Qualtrics survey. Participants were presented with two sets of vignettes that they were asked to rate and then answered background information about themselves.
Vignettes. Study 5 employed the same design as Study 3 for the vignettes and ratings which attempted to reduce the possibility of rehearsal between each set of vignettes. Similar to Study 3, the design made gender less salient and rehearsal of a gender schema between sets was reduced in several ways: (a) participants rated targets on their personality and age, not just on their gender; (b) participants made ratings on a second screen page after forming an impression of the target person on the previous screen page; and (c) participants received two sets of vignettes describing target people with who identified as men in the first set and as women in the second set with genitals manipulated within each set (vagina/penis). The manipulation of genitals in each set resulted in genitals being stereotype-inconsistent with gender identity (woman/penis, man/vagina) or stereotype-consistent with gender identity (woman/vagina, man/penis).

The first set of vignettes included the following information: (a) genitals: stereotype-consistent/stereotype-inconsistent; (b) personality: likes attending big parties/spending time with one friend at a time on the weekend; and (c) age: enjoys reading the news on the internet/in the local newspaper for leisure. The second set of vignettes included the same characteristics plus another target characteristic: (d) clothing preference: prefers to wear a dress/prefers to wear a tuxedo. The following is an example of a vignette that appeared in the first set:

K. S. thinks of themself as a man and has a vagina.
K. S. likes to hang out with one friend at a time on the weekends.
For leisure, K. S. enjoys reading the news on the internet.

The following is an example of a vignette that appeared in the second set:

J. P. thinks of themself as a woman and has a vagina.
When attending formal engagements, J. P. prefers to wear a dress.
J. P. likes to hang out with one friend at a time on the weekends.
For leisure, J. P. enjoys reading the news on the internet.

A total of 6 vignettes were rated in the first set, but only 2 vignettes were relevant to analyses. As in Study 3, the 2 vignettes in each set that were paired with the gender rating scales
were used in analyses. For these vignettes, filler characteristics were held constant. The characteristics used for vignettes paired with gender ratings were also the same as in Study 3: (1) likes to attend big parties with friends on the weekends; and (2) enjoys reading the news on the internet for leisure. The remaining 4 filler vignettes were paired with two age ratings and two personality ratings. Filler characteristics for these vignettes were randomly distributed since age and personality ratings did not pertain to the research question.

A total of 12 vignettes were rated in the second set, more than the first set because of the inclusion of the additional clothing characteristic with two levels for each. Thus, 4 vignettes were relevant to these analyses. These 4 vignettes were paired with the gender rating scales. Filler characteristics were held constant—the same characteristics held constant in the first set. The remaining 8 vignettes were paired with 4 age ratings and 4 personality ratings. Filler characteristics for these vignettes were randomly assigned.

Response time. Similar to Study 3, Qualtrics was programmed to record two response times for participants that were averaged together to create one overall response time. These two times were: (1) the time it took perceivers to first read the vignettes; and (2) the time it took perceivers to rate the vignettes. Record of time started when the pages loaded and ended when the participant clicked to continue to the next survey page. Response times were recorded in seconds.

Rejection scores. Rejection scores were calculated in the same way as Study 3. Higher scores indicated greater rejection.

Adjusters and Defaulters. The first set of vignettes produced rejection scores in which participants were not given the clothing preference of the target person. Rejection scores from this first set were analyzed to create the schema group called adjusters. Participants were
categorized as adjusters when they scored low on rejection of target people's gender identity (1.00 to 1.99). In contrast, participants were categorized as defaulters when they scored high on rejection of target people's gender identity (2.00 to 7.00). Based on this criteria, a dummy-coded (binary) variable (“1” = adjusters, “0” = defaulters) was created indicating 15 participants in the Study 5 sample were adjusters and 195 were defaulters.

**Hypothesis and Analysis**

Study 5 sought to test the prediction that adjusters’ rejection scores will increase in the context of additional stereotype-inconsistent information, e.g., clothing, specifically about a target with stereotype-inconsistent genitals and gender identity. Clothing represents the moderating target factor described in the proposed model (Figure 1). The addition of stereotype-inconsistent clothing was predicted to result in greater rejection scores among adjusters in the context of targets whose genitals are stereotype-inconsistent and information about clothing is withheld or is stereotype-consistent. If this is the case, the interpretation can be made that clothing altered people's tendency to use an identity-based schema rather than a biology-based schema during the gender attribution process.

As in previous studies, genitals were considered *stereotype-inconsistent* with gender identity when having a penis was paired with identifying as a woman and having a vagina was paired with identifying as a man in the vignettes. Based on U.S. society's social representations of gender, clothing was considered *stereotype-inconsistent* with gender identity when preference for wearing a dress was paired with identifying as a man or when preference for wearing a tuxedo was paired with identifying as a woman in the vignettes. Clothing was also manipulated to either be absent or present in the vignettes. Clothing was *absent* when clothing preference for wearing either a dress or wearing a tuxedo *was not included* as a characteristic in the vignette.
Clothing was present when clothing preference for wearing either a dress or a tuxedo was included as a characteristic in the vignette.

Framework for testing the hypothesis. The hypothesis was tested on Study 5 data to determine the impact of information about clothing preference on adjusters' rejection scores. A 2 (genitals: stereotype-consistent/stereotype-inconsistent) x 3 (clothing: absent/present and stereotype-consistent/present and stereotype-inconsistent) repeated measures MANOVA was conducted on rejection and response time. This technique was first conducted among adjusters to test the hypothesis, then among defaulters to explore other outcomes. Main effects of genitals and clothing and the two-way interaction effect between these terms were examined and reported. No predictions were made about response time for this study. But since response time was relevant to gender attribution processes in previous studies, response time was explored in the analyses. Particular to the hypothesis were the main effect of clothing and the two-way interaction effect on rejection scores. Post hoc comparisons of rejection and response time were performed by Bonferroni t-tests (2-tailed) to adjust for the multiple comparisons (see Field, 2009; Tabachnick & Fidell, 2001). These comparisons on the main effect of clothing were examined to determine if rejection was greater for the presence of clothing that was stereotype-inconsistent compared to stereotype-consistent with target gender identity. The interaction effect was also examined to determine if adjusters’ rejection scores significantly increased in the presence of information about clothing specifically when judging stereotype-inconsistent genitals. The effect size of this interaction was examined to interpret its strength.

The same 2 x 3 repeated measures MANOVA on rejection and response time was then conducted among defaulters. Main effects of genitals and clothing and the two-way interaction effect between these terms were examined and reported. No predictions were made about
defaulters in this study. But their rejection scores and response times across factors were interpreted in light of the outcomes for adjusters. To further examine differences between adjusters and defaulters, non-parametric tests (Mann Whitney U) were conducted. Specifically differences in response time were explored when clothing was absent and differences in both response time and rejection were explored when clothing was present and stereotype-inconsistent or consistent. Differences in rejection when clothing was absent were not reported since this measure was used to distinguish the two group in the first place. Regular t-tests were also conducted to explore differences between adjusters and defaulters on various demographic variables and on other measures in the study (e.g., essentialism).

*Assumptions of MANOVA.* In contrast to the previous studies, the present study examined a factor with more than 2 levels and the assumption of sphericity was not met. The assumption of sphericity does not need to be met for a repeated measures MANOVA (O’Brien & Kaiser, 1985), but univariate test statistics were reported and do require that the assumption of sphericity is met. Thus, I reference the Greenhouse-Geisser corrections for all univariate statistics in the analyses (see Field, 2009; Stevens, 2009). Adjusters had a small sample size \( n = 15 \), but factors were only slightly non-normal on the outcomes and demonstrated light-tailed distributions. For the same reasons as described in Study 3, the MANOVA for adjusters was conducted without removing outliers and without data transformation. However, non-parametric tests were used when examining differences between adjusters and defaulters on rejection and response time.

**Results**

*Adjusters and defaulters.* See Table 16 for values describing differences between adjusters and defaulters on the above variables. Adjusters ranged from 18 to 58 years old and were not significantly different in age \( M = 34.87, SD = 12.52 \) in comparison to defaulters \( M = \)
38.30, $SD = 13.57), t (1, 208) = -0.95, ns. Adjusters were politically oriented slightly more liberal ($M = 2.33, SD = 1.23$) than defaulters ($M = 3.43, SD = 1.75$), $t (1, 208) = -2.37, p < .05$. Adjusters were less gender essentialist ($M = 3.41, SD = 1.55$) than defaulters ($M = 4.63, SD = 1.13$), $t (1, 208) = -3.92, p < .001$. There were no significant differences on authoritarianism between adjusters ($M = 2.64, SD = 1.20$) and defaulters ($M = 3.16, SD = 1.32$), $t (1, 208) = -.52, ns$. Of the 15 adjusters, a greater, marginally significant percentage of adjusters than defaulters had sexual attractions that were fluid, flexible, and gender-irrelevant or included same-gender attractions (sometimes exclusively). A significantly greater percentage of adjusters than defaulters described the area surrounding their current residence as urban and a marginally significant greater percentage of adjusters than defaulters identified their race as Black or African American. Adjusters and defaulters were not significantly different on gender identity independence from birth-assignment, gender assigned at birth, how they think others perceive their gender, ethnicity, education, status as an ally, or personally knowing a transgender or genderqueer person.

Since contact with transgender people affected rejection scores in Study 1, the gender identities of the people whom participants personally know may be important to understanding any differences on rejection between target person's who identify as women and target person's who identify as men. Thus, adjusters and defaulters were compared on differences in the gender identities of the transgender or genderqueer people they know. Of the participants who indicated personally knowing a transgender or genderqueer person, a greater percentage of defaulters than adjusters indicated personally knowing a transgender person who identifies as a woman. A greater percentage of adjusters than defaulters indicated personally knowing a transgender person who identifies as a man and a transgender person who identifies as genderqueer.
Adjusters did not differ from defaulters on knowing transgender people who identify in some other way.

*Main effects among adjusters.* The repeated-measures MANOVA was examined for main effects of genitals and clothing. Means and standard errors for these main effects are outlined in Table 17. The analysis demonstrated a main effect of genitals on rejection and response time, $F(2, 13) = 4.27, p < .05, \eta_p^2 = .40$. Univariate tests revealed rejection was higher when genitals were stereotype-inconsistent compared to stereotype-consistent with gender identity, $F(1, 14) = 8.66, p < .05, \eta_p^2 = .38$. A marginally significant effect of response time was found such that univariate tests revealed response time was slower when genitals were stereotype-inconsistent compared to stereotype-consistent with gender identity, $F(1, 14) = 4.12, p = .06, \eta_p^2 = .23$.

The repeated measures MANOVA demonstrated a main effect of clothing on rejection and response time, $F(2, 11) = 6.23, p < .01, \eta_p^2 = .69$. Univariate tests revealed rejection was higher when clothing was present compared to when clothing was absent, $F(1, 28) = 8.19, p < .01, \eta_p^2 = .37$. Bonferroni comparisons indicated that rejection was not significantly different when clothing was present and stereotype-inconsistent compared to when clothing was present and stereotype-consistent. There was marginal significance suggesting that rejection was higher when clothing was present and stereotype-consistent than when clothing was absent ($p = .06$). Additionally, rejection was significantly higher when clothing was present and stereotype-inconsistent compared to when clothing was absent ($p < .05$). Univariate tests also revealed response time was slower when clothing was absent compared to when clothing was present, $F(1, 28) = 4.79, p < .05, \eta_p^2 = .26$. Bonferroni comparisons indicated that response time was not significantly different when clothing was present and stereotype-inconsistent compared to when clothing was present and stereotype-consistent. Response time was faster when clothing was
present and stereotype-consistent than when clothing was absent \((p < .05)\). Response time was not significantly different when clothing was present and stereotype-inconsistent compared to when clothing was absent.

**Interaction effects among adjusters.** The repeated measures MANOVA was examined for interactions between genitals and clothing on rejection and response time. Means and standard errors for these interactions are outlined in Table 17. A significant interaction effect was found between schema group and genitals on rejection and response time, \(F(2, 11) = 6.94, p < .01, \eta_p^2 = .72\). As depicted in Figure 8, this effect was driven by a significant effect on rejection scores such that univariate tests revealed rejection was higher when genitals were stereotype-inconsistent and clothing was present compared to stereotype-consistent and absent regardless of the stereotype-(in)consistency of clothing, \(F(1, 28) = 13.54, p < .01, \eta_p^2 = 0.49\). There was no significant interaction effect between genitals and clothing on response time.

**Main effects among defaulter.** The repeated-measures MANOVA was examined for main effects of genitals and clothing. Means and standard errors for these main effects are outlined in Table 18. The analysis demonstrated a main effect of genitals on rejection and response time, \(F(2, 193) = 388.81, p < .001, \eta_p^2 = .80\). Univariate tests revealed rejection was higher when genitals were stereotype-inconsistent compared to stereotype-consistent with gender identity, \(F(1, 194) = 763.73, p < .001, \eta_p^2 = .80\). Univariate tests revealed response time was slower when genitals were stereotype-inconsistent compared to stereotype-consistent with gender identity, \(F(1, 194) = 9.34, p < .01, \eta_p^2 = .05\).

The repeated measures MANOVA demonstrated a main effect of clothing on rejection and response time, \(F(2, 191) = 11.92, p < .001, \eta_p^2 = .20\). Univariate tests revealed rejection was lower when clothing was present and stereotype-consistent than when clothing was absent, \(F(1,
Bonferroni comparisons indicated that rejection was greater when clothing was present and stereotype-inconsistent compared to when clothing was present and stereotype-consistent ($p < .001$). There was marginal significance suggesting that rejection was higher when clothing was absent than when clothing was present and stereotype-consistent ($p = .06$). Additionally, rejection was not significantly different when clothing was present and stereotype-inconsistent compared to when clothing was absent. Univariate tests also revealed response time was slower when clothing was absent compared to when clothing was present, $F(1, 388) = 12.47, p < .001, \eta_p^2 = .06$. Bonferroni comparisons indicated that response time was not significantly different when clothing was present and stereotype-inconsistent compared to when clothing was present and stereotype-consistent. Response time was faster when clothing was present and stereotype-consistent than when clothing was absent ($p < .001$). Response time was also faster when clothing was present and stereotype-inconsistent compared to when clothing was absent ($p < .01$).

**Interaction effects among defaulters.** The repeated measures MANOVA was examined for two-way interactions between genitals and clothing on rejection and response time. There were no significant interaction effects between genitals and clothing on rejection or response time. Means and standard errors for interaction effects are outlined in Table 18. Figure 8 shows the non-significant interaction among defaulters alongside the significant interaction found for the same effect among adjusters.

**Comparing adjusters and defaulters.** Non-parametric tests were conducted to explore differences between adjusters and defaulters in the absence of clothing on response time and in the presence of clothing on rejection and response time. Adjusters were less rejecting than defaulters when targets genitals were stereotype-inconsistent with gender identity ($U = 820.00, p$
< .01). Adjusters were less rejecting than defaulters when targets genitals were stereotype-inconsistent and clothing was stereotype-consistent with gender identity \((U = 928.00, p < .05)\). There was a marginally significant difference between adjusters and defaulters on rejection when just clothing was stereotype-inconsistent with gender identity such that adjusters were less rejecting than defaulters \((U = 1120.00, p = .08)\). There were no significant differences between adjusters and defaulters on response time in the presence or absence of information about clothing.

**Summary**

Study 5 examined the effect of presence or absence of clothing preference on rejection and response time among adjusters. The addition of information about stereotype-inconsistent clothing preference was predicted to increase the degree of rejection only in the context in which genitals were also stereotype-inconsistent with gender identity. Interestingly, results suggest that when genitals were stereotype-inconsistent adjusters' rejection scores were higher as a function of the mere presence of information about clothing. Rejection scores were higher regardless of whether the information about clothing was stereotype-consistent or inconsistent, just as long as clothing information was included in the targets’ description. Comparisons reflected this finding such that no differences in adjusters' rejection scores were found between clothing that was stereotype-consistent and clothing that was stereotype-inconsistent. This suggests that the impact of clothing went beyond what was hypothesized to occur. The presence of clothing, regardless of stereotype-(in)consistency, resulted in higher rejection rather than the prediction that just clothing that was stereotype-inconsistent would result in higher rejection. No predictions were made about the impact of genitals on rejection for adjusters, but genitals that were stereotype-inconsistent were found to result in higher rejection among adjusters regardless of clothing.
Together, these findings suggest that information about genitals was favored in the context of information about clothing for adjusters. Adjusters ended up expecting consistency between clothing and genitals similar to Kessler and McKenna's (1978) concept of the "cultural genital."

When comparing and contrasting adjusters and defaulters on rejection, defaulters were more rejecting when genitals were stereotype-inconsistent compared to stereotype-consistent with target gender identity. The magnitude of the effect size of genitals on rejection was much greater for defaulters than for adjusters. This suggests that genitals had a larger effect on the gender attribution process for defaulters than for adjusters. This makes sense considering adjusters were less rejecting than defaulters when targets’ genitals were stereotype-inconsistent in the first place before information about clothing was included. According to a marginally significant finding, defaulters, like adjusters, were more rejecting when clothing was stereotype-inconsistent compared to when it was stereotype-consistent with gender identity regardless of the stereotype-(in)consistency of target genitals. Stereotype-inconsistent clothing made defaulters somewhat more rejecting compared to when information about clothing was absent, but this finding was marginally significant. In other words, just stereotype-inconsistent clothing preferences made defaulters more likely to reject even when all else was stereotype-consistent. The magnitude of this effect of clothing on rejection was much smaller for defaulters than adjusters. In sum, adjusters’ rejection scores were more affected by clothing than genitals while the reverse was true for defaulters. Effect sizes suggested that defaulters’ rejection scores, in contrast, were more affected by genitals than by clothing.

No predictions were made about response times for adjusters or defaulters and findings were generally unsurprising. Findings for adjusters on response time had large effect sizes, while the findings for defaulters had small to medium effect sizes. Adjusters' response times were
slower and (marginal) defaulters' response times were slower (significantly) when genitals were stereotype-inconsistent compared to stereotype-consistent. Additional information about stereotype-consistent clothing made adjusters faster at making a gender attribution compared to when this information was absent, but not when it was stereotype-inconsistent. Since adjusters rely on gender identity to make their decision, they made a gender attribution more quickly when a greater number of stereotype-consistent characteristics were provided. In contrast, defaulters were faster at making a gender attribution when clothing was present rather than absent regardless of stereotype-(in)consistency. Since defaulters rely on genitals to make their decision, they rehearsed this default schema in the first set of vignettes so they were able to apply it more quickly to the second set of vignettes regardless of the clothing information.

To explore the data further, differences between adjusters and defaulters on demographics and other measures were examined. Adjusters and defaulters were different in political orientation, gender essentialist beliefs, sexual attractions, geographic location, and the transgender or genderqueer people they know. Adjusters were more liberal and less gender essentialist. Adjusters were more likely to have sexual attractions that were fluid, flexible, and gender-irrelevant or included same-gender attractions (sometimes exclusively). Adjusters were more likely to live in an urban area. Finally, adjusters were more likely to know transgender people who identified as men or as genderqueer, while defaulters were more likely to know transgender people who identified as women.
Chapter 8: Discussion

This program of research examined how social representations, cognitive processes, and individual attitudes and experiences predict cisgenderist outcomes in the gender attribution process. To examine the links between these factors, I proposed a model (Figure 1) that describes the role of gender visualization and schema application in perceiving and determining a target person's gender. Specifically, this model hypothesized that gender is initially processed at the cognitive level through visualizing a target's characteristics which automatically activates a default, biology-based schema. People then decide whether or not to apply this schema and arrive at a final gender attribution. Individual contact with outgroups, certain personality traits, gender-related beliefs, and general beliefs about society were predicted to act as moderators to this process. The model predicted that some people may attempt to control their automatic judgment of the target by consciously engaging in schema adjustment before arriving at a final gender attribution (called "adjusters"). To examine the centrality of social representations in gender attributions at the cognitive level, adjusters were predicted to revert to using a default, biology-based schema when under conditions of cognitive load (a distraction) or when considering an additional, stereotype-inconsistent target characteristic (clothing preference).

There were five different research studies conducted and analyzed to test the different pieces of this model. The results from these studies are described below in the context of the four research aims outlined in Chapter 2. In this section, I discuss study results as they relate to each of the study aims. Next, I discuss the limitations and future direction for research on this topic. I also discuss the implications of this research to the study of social representations and social
cognition. Last, I make some final conclusions with regard to experiences of cisgenderism in gender attributions.

**Findings and Implications by Aim**

**Aim 1 – Determine the relationships between target gender characteristics, rejection, and response time.** One aim of this dissertation was to determine the effect of social representations about gender on people's tendency to misgender others. In these studies, social representations about gender were described by stereotype-(in)consistencies in target persons' gender characteristics. The tendency to misgender was operationalized as the extent to which a target's gender identity was rejected, i.e., saying that a target person is a man when she self-identifies as a woman. Previously, Kessler and McKenna's (1978) studies found that people tend to rely on gender stereotypes associated with biological characteristics, particularly genitals and especially the penis, when making gender attributions about others (Kessler & McKenna, 1978). The current study found further support for what they found nearly 35 years ago. Genitals impacted the degree to which people rejected target people's self-designated gender. The current research also expanded on Kessler and McKenna's (1978) studies by examining the effects of chromosomes as a social representation affecting the tendency to misgender others. Perceivers' gender judgments were similarly affected by information about chromosomes as they were about genitals.

Results across multiple studies suggest that perceivers misgender others when biological characteristics (e.g., genitals and/or chromosomes) do not stereotypically match a target's gender identity. Speer (2005) found that when gender is perceived as ambiguous, people interpret contextual information about the target's gender to make an attribution. Similarly, the model proposed for the current research described how people use schemas to interpret gender
according to biology-based social representations of women and men. For example, the social representation that women have a vagina and XX chromosomes lead people to determine that a target who identifies as a woman and has a penis and/or XY chromosomes is "actually" a man. The effect sizes for both genitals and chromosomes on rejection of target gender identity were similarly large. The large effect sizes can be interpreted to mean that genitals and chromosomes define two core elements in Americans' social representations of gender. People consistently demonstrated a common sense understanding that women and men have distinct chromosomes and genitals and that they may view variations from these distinctions as not "real" (see Garfinkel, 1967). If people had instead thought that gender could only be determined by people's personal gender identities at any given point in time, then people would have been much less likely to misgender others.

Another aim of this dissertation was to expand on past research to learn more about the level of automaticity in people's cognitive processing of other people's gender. One of the ways the current research examined automaticity was through perceivers' response times as they judged different targets' genders. Past research on norm theory found that certain social groups are asymmetrically attended to because their characteristics and/or behaviors are seen as surprising or unexpected (Bruckmüller, Hegarty, & Abele, 2012; Hegarty, 2006; Hegarty & Buechel, 2006; Hegarty & Pratto, 2001; Hegarty & Pratto, 2004; Miller, Taylor, & Buck, 1991; Pratto, Hegarty, & Korchmairos, 2007). Research on schemas has also found that stereotype-inconsistencies tend to increase the amount of time people spend categorizing stimuli (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003).

In contrast, biological characteristics that were stereotype-inconsistent with expectations of women and men in the current research were not always attended to for longer. For example,
Wigboldus, Dijksterhuis, and Knippenberg (2003) found that dissimilar features of stimuli increase the time people spend making categorizations of that stimuli. But, as Augoustinos and Walker (1995) suggested, the present research found that this cognitive process may be context-dependent. There was an increase in the time it took people to categorize gender when target’s genitals were stereotype-inconsistent, but not when other characteristics were stereotype-inconsistent. For example, Study 1 found that people were more rejecting of stereotype-inconsistent chromosomes and gender identity, but they did not need more time to make this judgment. One interpretation is that chromosomes may not need to go through processes of gender visualization as the model proposes (Figure 1). Chromosomes are internal and non-physical perceivers, so they may have received little to no visualization time. In contrast, genitals are external, physical characteristics, so they received more visualization time. Differences in externality may explain why response time was not a factor for chromosomes when perceivers made a gender attribution, while response time was a factor for genitals. In partial contradiction to the proposed model, gender visualization may not always be a necessary procedure in the gender attribution process. Considering the very large effect sizes found for rejection; the effect sizes found for response time were negligible by comparison. This pattern was found across all studies. In general, people seemed to be quick to make a gender attribution, even when their expectations were not met.

Overall, results from the current research suggest a social-cognitive asymmetry in which people are more likely to misgender others when characteristics do not match up with stereotyped expectations. Response times suggest that gender attribution is generally a fairly quick process regardless of whether people's expectations are met. The quick speed at which people make judgments about other people's gender may suggest that gender attribution—
particularly rejecting people's gender identity—has become so habituated and automatic that we do not even notice we are doing it.

**Aim 2 – Determine the moderating effect of personality, transgender contact, transgender ally status, gender-related beliefs and general beliefs about society on the relationship between target gender characteristics, rejection, and response time.** Another aim of the current research was to examine the impact of various perceiver characteristics on their tendency to misgender others. Study 1 examined personality traits such as openness to experience and agreeableness to find out if they make people less rejecting of other people's gender. Openness and agreeableness had no effect on rejection. This finding was surprising because openness and agreeableness have previously been found to mediate the relationship between contact with outgroups and prejudice (e.g., Asendorpf & Wilpers, 1998). Study 1 also examined whether or not knowing a transgender person would make people less rejecting. There was a medium effect size suggesting that participants who knew at least one transgender person were less rejecting when targets had stereotype-inconsistent chromosomes. They were also faster at making these judgments particularly for targets who identified as women, but the effect size for response time was small.

This finding is congruent with previous research linking contact with outgroups to lower prejudice (Allport, 1954/1979; Pettigrew & Tropp, 2006). Knowing transgender people made people less rejecting when chromosomes were inconsistent with identity, but this effect was not found when genitals were inconsistent with gender identity. Perhaps interactions with transgender people caused them to view chromosomes as less changeable than genitals. Research has linked lower prejudice with perceiving group characteristics as immutable (see Haslam & Levy, 2006). Thus, participants who knew transgender people were less rejecting when
unchangeable characteristics conflicted with gender identity (e.g. chromosomes), but they were no different from people who did not know a transgender person when changeable characteristics conflicted (e.g., genitals). Considering the sample size for participants who knew a transgender person was small, the effect sizes for both rejection and response time suggest a trend worth further analysis in future studies. More contact with a diversity of individuals who self-designate their genders may increase understanding about the many different ways in which people express their genders regardless of the mutability of their characteristics.

In Study 2, knowing a transgender person was not found to be a significant moderator since chromosomes were not an assessed characteristic of the targets. But this study also assessed the extent to which identifying as a transgender ally makes participants less rejecting and judge faster. Participants who identified as an ally to transgender people were less rejecting in the context of targets whose genitals were stereotype-inconsistent with their gender identity. There were no differences with regard to response time. The finding for rejection was expected since past research has found that people are less prejudiced toward the groups to which they are allied (Stone, 2009; Stotzer, 2009). The effect size was medium for rejection, but there were no differences on response time. This finding suggests that decreases in rejection among allies were not due to differences in cognitive processing speed. Transgender allies were similar to non-allies in the time they spent processing gender (in)consistencies when making judgments, but their final decisions were less rejecting of target's self-designated gender regardless. The differences in rejection scores despite similar response times may suggest that allies and non-allies spend similar amounts of time processing gender, but at different stages of the gender attribution process. While non-allies may be trying to visualize the unexpected, stereotype-inconsistent information, allies may be focusing on trying to adjust and apply a schema to be less
rejecting. This hypothesis is congruent with research suggesting that stereotype-inconsistent information is attended to for longer than stereotype-consistent information in inferential and categorization processing (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003). Allies may be less likely to be slowed down by the stereotype-inconsistencies than non-allies considering their motivation to be gender-affirming. Their cognitive energy may, instead, be expended on applying a schema that will help them arrive at a less rejecting decision. If they were not motivated to put forth the cognitive effort to be less rejecting, they may end up rejecting in the same way that non-allies do. Efforts to reduce cisgenderism may try to focus on motivating people to be transgender allies so that they pay more attention to the schemas that they use that have a direct impact on misgendered groups.

Study 2 also measured the extent to which lower endorsement of gender essentialism makes participants less rejecting and judge gender faster. Participants with low endorsement of gender essentialism were less rejecting, but there were no differences with regard to response time. The effect on rejection is congruent with past studies which found that people who have essentialist beliefs tend to have a cognitive preference for stereotype-consistency over stereotype-inconsistency when making judgments about others (Bastian & Haslam, 2007). Similarly, participants with low gender essentialism were less rejecting in the context of targets whose genitals were stereotype-inconsistent with their gender identity. The effect size for the continuous variable of essentialism on rejection was very large, but response time was unaffected. The effect on response time has similar implications for those low in gender essentialism as it did for allies to transgender people. Decreases in rejection among people who endorse gender essentialism less were not due to differences in cognitive processing speed. Similar to allies, people low in gender essentialism may not respond the same way to stereotype-
inconsistencies because of their motivation to be less gender essentialist. They may expend their
cognitive efforts adjusting to and applying a schema that will be less rejecting. If they were not
motivated to put forth this cognitive effort to be less rejecting, they may end up being more
rejecting. Efforts to reduce cisgenderism may try to focus on motivating people to endorse less
gender essentialism in the schemas that they apply during the gender attribution process.

Study 2 also measured the extent to which biological gender beliefs and natural
attitudes/beliefs about gender increased rejection and slowed down judgments. These were not
found to be significant. Previously, biological gender beliefs were a predictor of support for
transgender people's rights, and not natural attitudes/beliefs about gender (see Tee and Hegarty,
2006). But these had never been tested on attribution processes that can lead to misgendering.
Also, Study 2 measured the extent to which authoritarianism and conservatism increased
rejection and slowed down judgments. These were not found to be significant either. Previously,
these measures had been found to predict sexual prejudice or anti-trans prejudice (Herek, 2000;
Tee & Hegarty, 2006; Whitley, 1999). Therefore, these measures do not relate to processes that
result in misgendering.

Overall, knowledge derived from knowing a transgender person plays an important role
in the extent to which people reject other's gender identities and how quickly their decision is
made. The diversification of knowledge through exposure to individuals and groups with many
ways of expressing gender may help reduce people's tendency to misgender. Also, the effects of
identifying as a transgender ally or being low in gender essentialism on response time gave
insight into the stages at which people focus their attention during the attribution process. If
people are motivated to focus on the schemas used to make a gender judgment rather than on
visualizing the stereotype-inconsistencies of the target, they may become less rejecting in their gender judgments.

**Aim 3 – Determine the effect of cognitive distraction on adjusters’ rejection among target with stereotype-inconsistent gender characteristics.** Building on the predictions and findings of the previous studies, another aim of this dissertation was twofold: The first was to identify individuals who engage in schema adjustment. Schema adjustment was considered to occur when people, called "adjusters," applied a schema that was based on affirming a target's gender identity (an "identity-based schema"). The second aim was to determine if adjusters would become more rejecting when distracted while making a gender judgment. Findings for this aim would lend credence to the idea proposed in Chapter 2 that people who are less prejudice will still demonstrate prejudice on an implicit level (see Gilbert, 1989). Study 3 found that, under conditions in which adjusters were cognitively distracted, their rejection scores increased. This finding was expected since past research on prejudice found that people who are otherwise less prejudiced become more prejudiced when under cognitive load (Cralley & Ruscher, 2005). In general, people who report less prejudice on self-report measures tend to demonstrate prejudice on implicit cognitive measures (Hoffman, Hawronski, Gschwendner, Le, & Schmitt, 2005; Greenwald, McGhee, & Schwartz, 1998; Nosek, et al., 2007; Plant & Devine, 1998). People who are motivated to be less prejudiced tend to still be prejudiced at an implicit level (Ajzen, 2005; Bargh & Chartrand, 1999; Devine, 1989; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). Similarly, adjusters were less rejecting of targets with stereotype-inconsistent genitals and gender identity, but they became more rejecting when they judged target gender while being distracted.
Interestingly, a marginally significant finding suggested that adjusters were faster than defaulters at making a gender attribution when they weren't distracted. Thus, adjusters may not be "adjusting" from a default schema to an identity-based schema as previously thought. If they were adjusting, they would have been the same speed or slower to apply an identity-based schema because they may have needed more time for the extra step of adjusting. Such a result would lend credence to the idea proposed in Chapter 2 that some people "correct" or adjust their attributions in a step-by-step process (see Gilbert, 1989). Gilbert (1989) described “correcting” as a sequential process in which people make an attribution first and then revise that attribution with a new one. Through the model depicted in Figure 1, I posited a similar process for gender attributions among adjusters. The faster response time among adjusters, although a marginally significant result, suggests that adjusters processed targets much more quickly than this sequential process would suggest. One interpretation of their faster response time is that adjusters were *blocking* information about genitals in order to more efficiently apply an affirming, identity-based schema to each target. Thus, adjusters may be more accurately called "blockers" than adjusters.

This process of blocking contrasts with the findings for transgender allies and people low in gender essentialism. Transgender allies and people low in gender essentialism in Study 2 took a similar amount of time to process stereotype-inconsistencies as those who were not transgender allies and were high in gender essentialism. An interpretation of their similar response times suggests that these groups may have been engaging in sequential adjustment as I had originally proposed might be the case for adjusters. In short, these studies described two methods that different people may apply to make a gender attribution that is less likely to be misgendering: (1) people who adjust their initial default, biology-based schema toward an identity-based one that is
more gender-affirming; and (2) people who block information about biology to apply an identity-based schema that is gender-affirming.

Blocking in Study 3 may have some similar characteristics to blocking as it is described in the literature on attention in learning (Kruschke, 2003). Kruschke (2003) posited that people learn methods that perfectly predict outcomes such that they tend not to associate new cues with that outcome; they block those cues out. In comparison, the process of blocking in Study 3 may suggest that some people have learned to associate gender identity as the perfect predictor of a person's gender. The difference between blocking in the literature on attention in learning and blocking in gender attributions is that, instead of blocking new cues, people block old and familiar cues that were presumably learned first (e.g., biological characteristics). Therefore, blocking may use up cognitive resources to a greater degree when making a gender attribution than when engaging in simple cognitive learning tasks. This may be why blocking was generally ineffective for people when the distraction task was present. The cognitive effort to block the default schema and apply an identity-based schema did not hold up when under cognitive load—adjusters became more rejecting.

Adjusters higher rejection scores while under cognitive load revealed that, on an implicit level, adjusters may still be impacted by knowledge about biology-based social representations of gender. Blocking out the default schema in order to apply an identity-based schema seems to be an explicit, controlled process that depletes cognitive resources and makes people susceptible to the effects of cognitive load. Thus, psychologists' and activists' attempts to establish gender identity as a biological, immutable characteristic (e.g., Diamond, 2002; Ungar, 1979) may not have successfully established itself as a central element in people's social representations. If it had, Moscovici (1984) would suggest that gender identity would be able to stand the test of any
situation. But adjusters' identity-based model for gender attribution did not hold up under cognitive load. Future research on adjusters should explore the direct impact of habitually asking unfamiliar people their gender identity on their tendency to misgender others thereafter. Perhaps automating this practice would reduce the cognitive effort needed to block out the current biological premise upon which social representations of gender are based.

**Aim 4 – Determine the effect of an additional stereotype-inconsistent gender characteristic on adjusters' rejection.** The final aim of this dissertation explored adjusters (suggested to be "blockers" in the conclusions for Study 3) further by adding a socially-normed gender characteristic that they would additionally have to be de-prioritized in order to apply an identity-based schema. While the previous study uncovered the instability of schema adjustment because of a cognitive distraction, Study 5 sought to expose the instability of schema adjustment because of a social norm. Kahneman and Miller (1986) suggest that social norms get associated with particular groups. Research has found that these associations often result in asymmetrical judgments about groups (e.g., Hegarty & Pratto 2001). Adjusters typically categorize people according to their gender identity. Such categorizations may still lead people to make normative or stereotyped associations based on those categorizations. Since Kessler and McKenna (1978) described clothing as the "cultural genital," clothing preferences were manipulated in Study 5 to determine their impact on adjusters’ judgment of targets who they otherwise categorize according to their gender identity.

I predicted that adjusters would be more rejecting when clothing was stereotype-inconsistent with gender identity in the context of stereotype-inconsistent genitals. I assumed that they would not be more rejecting when clothing was stereotype-consistent with gender identity in the context of stereotype-inconsistent genitals. Results from the study only supported this first
prediction. In the context of stereotype-inconsistent genitals, adjusters were more rejecting of target gender identity regardless of whether clothing was stereotype-inconsistent or stereotype-consistent. The presence of clothing caused adjusters’ stereotyped expectations about genitals to emerge. This may suggest an expansion on past research into the impact of norms on the judgments people make. At least for some people (in this case, adjusters), the mere presence or absence of certain stimuli may change the parameters upon which other stimuli get associated with stereotypes and then categorized.

Caution should be exercised when deriving conclusions from the above results. Recall that gender identity of the target was split between the first set of vignettes (clothing absent) and second set of vignettes (clothing present) in order to distinguish adjusters from the sample. Although somewhat post hoc, results may have been confounded by the fact that the gender identity of the target was not counterbalanced between presence or absence of clothing preference. Attempts were made to ensure that the clothing characteristics were both rated highly on gender exclusivity and social desirability. Attempts were also made to reduce the salience of these gender ratings in the design of the study. But the effect of order could not be discerned for certain and was not controlled for in this study. While order effects were not significant when testing vignettes that described target gender identity and genitals (see Study 2), order effects were not specifically tested on vignettes that included information about clothing.

Further exploration of the data revealed that adjusters were still less rejecting than defaulters in the presence of information about clothing. Both adjusters’ and defaulters' gender judgments were influenced by information about genitals in the presence of information about clothing, but adjusters were influenced by genitals to a lesser degree than defaulters. The effect sizes for the impact of genitals on rejection for adjusters and defaulters were both very large, but
much larger among defaulters. These results may be explained by differences between adjusters' and defaulters' in the gender identities of the transgender people they know. The sample sizes were too small to test the effects of knowing transgender people on the outcomes, but adjusters tended to know more transgender people who self-designate their gender as genderqueer than defaulters did. Genderqueer is a category sometimes used to define one's gender as independent from a binary identification as a woman or a man (see Nestle, Howell, & Wilchins, 2002). People who identify as genderqueer may express their genders (e.g., through clothing) in ways that are not easily categorized according to binary social representations of gender and that may change in their gender stereotyped-consistency over time and across contexts. Thus, adjusters may have interpreted certain targets as examples of people who are genderqueer—not distinctly a woman or distinctly a man—when they learned that their clothing preferences were inconsistent.

People have many reasons for self-identifying within the gender binary while expressing their gender in contrast to it (Ansara, 2010; Wilchins, 1997; Serano, 2007; Stone, 1991). Some people who, for example, identify as women and have a penis, may express their gender in masculine ways to protect themselves from violence because they do not easily "pass" as a woman or they cannot afford gender affirming hormones or surgeries to help them pass. Alternatively, violence may not be a factor—they may simply just like to express themselves as a masculine woman. If adjusters had greater exposure to the multiplicity of reasons people have for self-identifying their genders within the binary and continuing to express their genders in contrasting ways, they might not have become more rejecting in the presence of information about clothing.
Overall, adjusters’ identity-based schema did not hold up in the presence of information about clothing. Underlying stereotypes based on the biological determination of gender emerged in the presence of this socially-normed characteristic regardless of its stereotype-consistency or inconsistency. Knowledge about genderqueer identities may have influenced adjusters becoming more rejecting, but still not as rejecting, as defaulters. In the end, both groups were rejecting of targets who had characteristics that were stereotype-inconsistent. Both adjusters and defaulters may benefit from exposure to more diverse knowledge about the various ways in which people express their gender—including those who self-identify within the gender binary—and the reasons why they do. Such knowledge could help broaden people's understanding about others to whom they have less exposure, which may also reduce the effects of cisgenderism in all people's gender attributions.

**Implications for research on social representations and social cognition**

Rateau, Moliner, Guimelli, & Abric (2012) wagered that future research combining social representations and sociocognitive processes would "...be crucial to the development of our knowledge about the psychosocial functioning of individuals and groups" (p. 494). The above studies combined these two fields of thought by empirically manipulating different social representations of gender and testing their impact on cognitive processes. Social representations theory provided the framework for testing collective assumptions and expectations about gender through different combinations of stereotyped characteristics that described various target persons. Social cognition provided the focus on the attributions that perceivers made and the length of time it took them to make an attribution. This design allowed for a deeper understanding of the processes associated with both theories.
Cognitive manipulations and interpretation of their effects helped explain the current state of social representations of gender. Moscovici (1969; 1984) explained that social representations are generally stable over time, but have the ability to evolve through challenges made by individuals. Cognitive manipulations in the present studies were useful for understanding the extent to which gender identity is becoming integrated into people's collective social representations of gender. For a subgroup of the samples, gender identity predicted people's gender attributions regardless of stereotype-inconsistency with genitals, but only under conditions in which they were easily in control of the judgments they were making. Cognitive load was manipulated to determine the automaticity of making a gender judgment that affirmed target gender identity in this subgroup. Cognitive load caused this group to be more likely to misgender the target when genitals and gender identity were stereotype-inconsistent. In other words, this subgroup became much like the rest of the sample who relied on biological characteristics to make their gender judgments. This research suggested that biological characteristics are central to shared knowledge about gender, even among those who may be beginning to challenge these assumptions.

Social representations of gender via the manipulation of target characteristics helped emphasize the impact of context on the cognitive processing of gender. Research on norms found that people can be asymmetric in their judgments of others when they are marked as unexpected or surprising (e.g., Hegarty & Pratto). Asymmetries were similarly found in the current research, but the strength of these asymmetries depended on which features of the target were more strongly associated with social representations. There was a larger effect of genitals than chromosomes such that people were more likely to misgender when genitals were stereotype-inconsistent. Additionally, research on schema categorization has found that the more dissimilar
the features of a category are, the more time people take to categorize it (Rosch, 1978; Wigboldus, Dijksterhuis, & Knippenberg, 2003). Meta-analyses have found inconsistencies in the findings regarding response time in categorization (Rojahn & Pettigrew, 1992; Stangor & McMillan, 1992). The current research found that response time was relevant only to certain manipulations of certain types of target gender characteristics. Genitals rather than chromosomes made people slower at forming their judgments. Overall, genitals were processed differently than chromosomes at the cognitive level. This may have to do with the effort that goes into cognitively visualizing genitals especially when they are stereotype-inconsistent. This extra visualization process may be unnecessary for chromosomes since they are internal biological characteristics associated with gender while genitals are external. Chromosomes may be less strongly relevant and more quickly processed as a result.

Taken together, social representations theory and social cognitive processes complemented each other through both design and interpretation of the findings. Future research into complex sociological phenomenon (e.g., gender) may wish to integrate these two approaches in similar ways or using improved methods such as the suggestions described in the next section.

Limitations and future directions

This program of research involved several overarching as well as study-specific limitations. First, all studies involved issues of external validity since they had participants make judgments about fictional target people described in vignettes rather than make judgments about real people observed in everyday settings. However, being among the first of their kind, these studies attempted to isolate and manipulate variables previously found to be relevant to the gender attribution process (e.g. genitals; Kessler & McKenna, 2005) and test new variables (e.g.,
chromosomes) so that their specific impact in relation to gender identity could be examined. In this way, these studies married the methods of social cognitive research while contextualizing the findings within social expectations and assumptions about gender.

A few limitations to the studies have to do with the methods of analysis. For one, the rejection scores derived from the two Attribution rating scales in Studies 2, 3, and 5 limited analyses to understanding the extent to which people rejected, but not the reasoning behind their judgments. A benefit of the two separate scales that perceivers could attribute targets to being a woman and/or a man separately. They had the option to judge the target to be a woman and a man or neither a woman nor a man if they wanted. I took the average of these two rating scales together since any rejection of a target’s self-designated gender would be an instance of misgendering. This includes the suggestion through these rating scales that a target who identifies as a single gender (as a woman or as a man) is either both these gender simultaneously or neither of these genders. Nevertheless, I was unable to distinguish between judging the target as both or as neither by averaging the two scales together. Future studies may seek to examine differences in nuance between the judgments that people make by interpreting differences in the reasoning behind their judgments and subsequent ratings.

Research is needed to further understand who “adjusters” are, what causes adjusters to be more rejecting, and how schema adjustment and/or "blocking" operates across different information provided about the target person’s gender. Since the identity schema did not hold up when under cognitive load and when additionally learning about a target person’s clothing preference, this calls into question the distinctiveness of adjusters from defaulters across contexts. Although this finding implies that schema adjustment and/or blocking may be even rarer and more unstable than previously thought, continuing to identify and explore the instances
in which certain people do engage in schema adjustment or blocking will help build an understanding of the social representations that act implicitly to perpetuate or reduce cisgenderist outcomes in our gender attributions.

Future studies should counterbalance gender identity of the target in order to accurately determine the effect of clothing preference on adjusters' rejection of the target's gender identity. Alternatively, future studies could identify a group of likely adjusters/blockers prior to testing and then test the effects of clothing and genitals on rejection for both targets who identify as men and targets who identify as women. Circular reasoning was at risk when I chose to distinguish adjusters as such strict “accepters” of target gender identity using the same measure that was used in the main analyses. Distinguishing adjusters in this way, however, ensured that the group I was assessing truly represented the group that was the least rejecting in the sample. Future studies may attempt to avoid the risk of circular reasoning by recruiting a larger sample and/or focusing recruitment efforts on populations who are more likely to be adjusters/blockers. The demographic differences between adjusters/blockers and defaulters found in Study 3 and 5 may help with recruitment strategizing to this end.

Findings from this research also provide a foundation upon which to test additional target characteristics' impact on gender attributions. Future studies can test the extent to which gender attributions are affected by differences in the tone of people's voices, in presence/absence or coarseness of hair on peoples bodies, in the structure of people's faces, and other external attributes associated with gender. These studies were also limited by their focus on targets who think of themselves on the gender binary as either a woman or a man. A more diverse spectrum of gender identities may be used. Open-ended questions may ask people to indicate the target's
gender allowing for more flexibility in their responses by way of removing the possible priming effect of anchoring target gender along a continuum of being a woman or being a man.

Future studies may retest characteristics of the target used in the current studies in order to determine their centrality to social representations across time and across cultures. Moscovici (1981) emphasized that social representations are mutable and transformative across time as objectification processes incorporate new information that push assumptions and common sense realities in novel directions. Chromosomes may be an example of this in U.S. society today since people responded to chromosomes differently than genitals on rejection and response time. Also, social representations are central to the communications and knowledges of cultures. Therefore, taking these same or similar studies and applying them cross-culturally may reveal characteristics other than biological ones (e.g., "spirit gender" in indigenous North American cultures; Jacobs, Thomas, Lang, 1997) that influence people's gender judgments.

The current research also provided a foundation upon which to test additional characteristics of the perceiver and their impact on the gender attribution process. For one, the design of these studies did not include direct measures of participants' emotional response, e.g., anger and disgust, in reaction to the targets gender characteristics. The reason for excluding measures of affect were described in Chapter 2, but future research should propose and test a model that includes affect as a potential moderator to the gender attribution process.

Cisgenderism has been differentiated from measures of emotion-laden forms of prejudice such as transphobia (see Ansara & Hegarty, 2012). Social representations that lead to cisgenderist responses are said to operate implicitly on the gender attribution process, regardless of emotional response. Therefore, this study predicted cisgenderist responses to be found both among people more likely to have positive emotions toward individuals affected by misgendering (e.g., allies to
transgender people) as well as those with potentially more negative feelings toward those individuals (e.g., people with authoritarian beliefs). But these were indirect tests of emotional response. At the extreme end of the spectrum, past research has found that people are motivated to respond violently toward transgender people as a result of their negative emotions toward them (Stotzer, 2009). But are people motivated to misgender people as a result of having these kinds of negative emotions? Some research has suggested that people are motivated to misgender in order to socially maintain a heteronormative status quo (see Schilt & Westbrook, 2009). To further understand the role of emotions in the gender attribution process, future studies may focus deliberately on people's emotional responses to targets with stereotype-inconsistent and stereotype-consistent gender characteristics. Hill & Willoughby's (2005) self-report measure of transphobia may be a starting point for this analysis.

Final conclusions regarding cisgenderism in gender attributions

For this dissertation, cisgenderism was defined as the delegitimization of people’s designations of their own genders by relying on social representations to make that designation for them. As expected, the vast majority of participants in the current research misgendered others because they made stereotyped associations about their biological characteristics. Surprisingly, genitals and chromosomes were similar bases upon which people's genders were judged. They also rejected others’ genders fairly quickly despite the unexpectedness of a target's characteristics. Knowing people who are misgendered (e.g. transgender people) lessened people's tendency to misgender others and even helped them make a judgment faster. At the same time, the knowledge communicated through these interactions sometimes limited people's judgments in new ways. While they were less rejecting toward some people (e.g., people with stereotype-inconsistent chromosomes), they were still rejecting toward others (e.g., people with stereotype-
inconsistent genitals). Both identifying as an ally to transgender people and having less gender essentialist beliefs were associated with less rejection. People with these characteristics may have been less rejecting because they were consciously trying to overcome the stereotype-inconsistencies in the target's gender that they automatically recognized. This hypothesis was supported when people who tended to be more gender affirming of others became more rejecting when conditions (via distraction) constrained their cognitive efforts not to misgender.

These findings illuminate the ways in which cisgenderism may operate implicitly, or beyond our control, on the gender judgments that we make. Social representations of gender cause people to judge gender based on biological characteristics above or instead of personal gender identity, unless they consciously attempt to disregard those social representations. But attempts to disregard them were found to be easily destabilized. The reliance on biology-based social representations will need to be replaced by a new model in order to stabilize people's efforts to be more gender affirming. To overcome the implicit effects of cisgenderism, current social representations will need to be replaced by a new schematic model that prioritizes people's own gender self-designations. Ultimately, social representations need to allow people the right to designate their own genders, without institutionalized barriers, throughout the lifespan.

Efforts to work toward this goal may start by challenging and falsifying people's common sense understandings that women and men are biologically distinct and that gender is simple and stable in humans (e.g., Garfinkel, 1967). For example, educational efforts at the institutional and interpersonal levels could focus on increasing awareness around the many kinds of chromosomal combinations and the spectrum of genital size, shape, color, etc. in humans (see Fausto-Sterling, 2000). Additionally, educational efforts may draw attention to the multiplicity of gender self-designations and expressions in humans (see Wilchins, 2004). The potential benefits of these
efforts are supported by the findings in this dissertation. Exposing people to new knowledge to motivate them to be less gender essentialist may contribute to lowering people's tendency to reject others' gender identities. Additionally, familiarizing people with the experiences of others who have unfamiliar gendered backgrounds may contribute to lowering people's tendency to reject others' gender identities.

Efforts to work toward this goal may also attempt to motivate people to focus their attention on counteracting the assumptions that they make about other people's genders in everyday social interactions. A sense of social responsibility could be instilled to act in accordance with ethical guidelines put forth by the APA (2008) encouraging the social and legal recognition of people's gender identities. In keeping with these guidelines, the practice of asking people their gender identities, and affirming those identities, should become common practice in everyday interactions between individuals and with social services or government organizations. This dissertation's findings suggest that we may have automated the process of assigning people to a gender without asking them first. However, if we take the time to ask the person's gender identity, we may be able to reverse this process. People, including those who are resistant to the practice at first, may find that their automatic assumptions about people's genders are incorrect more often than they would have known them to be otherwise. For example, people may not be so quick to judge the gender of people like Balpreet Kaur whose story was described in Chapter 1 of this dissertation. Instead, gender attributions could be based on the personal gender identities of the individual rather than on any other ascribed characteristics. Over time, a cultural prioritization of self-designations of gender may help reduce the effects of cisgenderism both institutionally and interpersonally.
Appendix A:

Full measures used in moderation analyses for Study 1 & Study 2

**Gender Essentialism scale** (modified Essentialist Beliefs scale, Haslam & Levy, 2006)

1. Gender is a category with clear and sharp boundaries: People are either women or men.
2. Women and men each have necessary or defining characteristics, without which they would not be women or men.
3. Women and men are not fundamentally different. (*)
4. People who do not consistently act like one gender are fooling themselves and should just make up their minds
5. Knowing that someone is a woman or a man tells you a lot about them
6. Gender is caused by biological factors for women and men.
7. Whether a person is a girl or boy is set early on.
8. People cannot change their gender.
9. Gender has innate and genetically-based characteristics.

(*) counter-balanced items

**Beliefs about gender scale** (Tee & Hegarty, 2006)

1. There are only two genders, women and men
2. Only these two genders are morally acceptable and legitimate in our society
3. All adults identify as either women or men
4. If you are either a woman or a man, then you are that gender for all time
5. All women have a vagina and all men have a penis.
6. It is just a social norm to assign babies to a gender based on what their bodies are like
7. Anyone who is not naturally a woman or a man is a freak of nature
8. If someone says they are changing their gender, they are most likely just making a joke or play acting
9. Even a person with ambiguous genitalia is still either female or male
10. Possession of a vagina, even one that is man-made through surgery, entitles a person to consider themselves female

**Trans persons beliefs scale** (Tee & Hegarty, 2006)

1. Gender is determined by biological factors, such as genes and hormones, before birth
2. Whether a person sees himself/herself as male or female is largely a matter of upbringing
3. Transvestites are people who gain pleasure from cross-dressing
4. Transsexual people are basically transvestites who wear the clothes of the opposite sex all of the time
5. All mammals have a physical sex, but only humans have a gender identity
6. If someone wants a sex reassignment, their doctor or psychologist can talk them out of it
7. Male to female transsexuals are practically all attracted to men and not to women
8. Transsexual people are fooling themselves in believing that they, and not their bodies, determine what their gender identity should be
9. There are only three factors that determine gender: internal gonads (e.g. testes), external genitalia (e.g. penis) and chromosomes (i.e. xx—female and xy—male)
10. If someone has a sex change operation they have genuinely changed their gender
11. Transsexual people should be tolerated but it is difficult to accept them as normal people
12. In countries where sex reassignment surgery is not readily available, nobody worries about their gender identity

Right-wing authoritarianism, short version, modified (RWA, Zakrisson, 2005)

1. Our country needs a powerful leader, in order to destroy the radical and immoral currents prevailing in society today.
2. Our country needs free thinkers, who will have the courage to stand up against traditional ways, even if this upsets many people. (*)
3. The “old-fashioned ways” and “old-fashioned values” still show the best way to live.
4. Our society would be better off if we showed tolerance and understanding for untraditional values and opinions. (*)
5. God's laws about abortion, pornography and marriage must be strictly followed before it is too late, violations must be punished.
6. It would be best if newspapers were censored so that people would not be able to get hold of destructive and disgusting material.
7. Many good people challenge the state, criticize the church and ignore “the normal way of living”. (*)
8. Our forefathers ought to be honored more for the way they have built our society, at the same time we ought to put an end to those forces destroying it.
9. People ought to put less attention to the Bible and religion, instead they ought to develop their own moral standards. (*)
10. There are many radical, immoral people trying to ruin things; the society ought to stop them.
11. It is better to accept bad literature than to censor it. (*)
12. Facts show that we have to be harder against crime and sexual immorality, in order to uphold law and order.
13. The situation in the society of today would be improved if troublemakers were treated with reason and humanity. (*)
14. If the society so wants, it is the duty of every true citizen to help eliminate the evil that poisons our country from within.

(*) counter-balanced items

Conservatism (Brewer, 2003)

Egalitarianism subscale

1. Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed;
2. we have gone too far in pushing equal rights in this country(*)
3. This country would be better off if we worried less about how equal people are(*)
4. It is not really that big a problem if some people have more of a chance in life than others(*)
5. If people were treated more equally in this country we would have many fewer problems;
6. One of the big problems in this country is that we don’t give everyone an equal chance.

*Moral traditionalism subscale*

1. The newer lifestyles are contributing to the breakdown of society
2. The world is changing and we should adjust our view of moral behavior to those changes(*)
3. We should be more tolerant of people who choose to live according to their own moral standards even if they are very different from our own(*)
4. This country would have fewer problems if there were more emphasis on traditional family ties

(*) counter-balanced items
Appendix B:

Clothing items rated in Study 4

Sun hats
Fine jewelry
Panties
Boxers
Bras
Briefcase
Dresses
Ties
Baseball Caps
Loafers
Cuff links
High heels
Tuxedos
Purse
Tight jeans
Cologne
Muted colors
Ballet flats
Stockings
Sneakers
V-neck sweater
Pants
Loose jeans
Swim trunks
Bright colors
Perfume
Bikini
Collared dress shirt
Table 1

*Study 1 Descriptives of Categorical Participant Characteristics, N = 127*

<table>
<thead>
<tr>
<th></th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>84 (66.1)</td>
</tr>
<tr>
<td>Male</td>
<td>40 (31.5)</td>
</tr>
<tr>
<td>MTF</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Questioning</td>
<td>2 (1.6)</td>
</tr>
<tr>
<td><strong>Sexuality</strong></td>
<td></td>
</tr>
<tr>
<td>Bisexual</td>
<td>6 (4.7)</td>
</tr>
<tr>
<td>Gay/Lesbian</td>
<td>6 (4.7)</td>
</tr>
<tr>
<td>Straight</td>
<td>88 (69.3)</td>
</tr>
<tr>
<td>Did not respond/Refused to answer</td>
<td>27 (21.3)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>34 (26.8)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>18 (14.2)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>26 (20.5)</td>
</tr>
<tr>
<td>Middle-Eastern/Indian</td>
<td>9 (7.1)</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>36 (28.3)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Did not respond/Refused to answer</td>
<td>3 (2.4)</td>
</tr>
<tr>
<td><strong>Grew up in NYC</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>83 (65.4)</td>
</tr>
<tr>
<td>No</td>
<td>44 (34.6)</td>
</tr>
<tr>
<td><strong>Household income</strong></td>
<td></td>
</tr>
<tr>
<td>Under 25,000</td>
<td>23 (18.1)</td>
</tr>
<tr>
<td>25,001-50,000</td>
<td>43 (33.1)</td>
</tr>
<tr>
<td>50,001-75,000</td>
<td>27 (21.3)</td>
</tr>
<tr>
<td>75,001-100,000</td>
<td>20 (15.7)</td>
</tr>
<tr>
<td>Over 100,000</td>
<td>15 (11.8)</td>
</tr>
<tr>
<td><strong>Current Religion</strong></td>
<td></td>
</tr>
<tr>
<td>Atheist/Agnostic/None</td>
<td>37 (29.1)</td>
</tr>
<tr>
<td>Buddhist</td>
<td>4 (3.1)</td>
</tr>
<tr>
<td>Catholic</td>
<td>28 (22.0)</td>
</tr>
<tr>
<td>Hinsu/Jain</td>
<td>3 (2.4)</td>
</tr>
<tr>
<td>Jewish</td>
<td>10 (7.9)</td>
</tr>
<tr>
<td>Muslim</td>
<td>5 (3.9)</td>
</tr>
<tr>
<td>Protestant/Christian</td>
<td>34 (26.8)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>3 (2.4)</td>
</tr>
<tr>
<td>Did not respond/Refused to answer</td>
<td>3 (2.4)</td>
</tr>
</tbody>
</table>
Table 2

Study 1 Means (M) and Standard Errors (SE) for 2x2 Interactions Between Target Gender Characteristics on Rejection and Response

Time, N = 127

<table>
<thead>
<tr>
<th></th>
<th>Genitals</th>
<th>Chromosomes</th>
<th>Sexual attraction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vagina</td>
<td>Penis</td>
<td>XX M (SE)</td>
</tr>
<tr>
<td>Woman identity</td>
<td>2.11a (.08)</td>
<td>4.10b (.12)</td>
<td>2.24a (.08)</td>
</tr>
<tr>
<td>Man identity</td>
<td>4.26b (.12)</td>
<td>2.18a (.08)</td>
<td>4.11b (.13)</td>
</tr>
<tr>
<td>Vagina</td>
<td>-</td>
<td>-</td>
<td>3.25 (.08)</td>
</tr>
<tr>
<td>Penis</td>
<td>-</td>
<td>-</td>
<td>3.10 (.10)</td>
</tr>
<tr>
<td>XX Chromosomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>XY Chromosomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Column</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

|               |           |             | Response Times (s) |             |             |
|---------------|----------|-------------|---------------------|-------------|
|               |          |             | Woman identity      | Man identity|
|               | Vagina   | Penis       | 19.64a (1.11)       | 22.18b (1.00) |
|               | 19.92 (.97) | 21.91 (1.27) | 20.71 (1.02)       | 21.11 (1.05) |
|               | 20.66 (.98) | 20.41 (1.07) | 21.16 (1.07)       |            |
| Vagina        | -        | -           | 19.32a (.97)       | 23.00b (1.37) |
| Penis         | -        | -           | 19.46a (.87)       | 19.77 (.95) |
| XX Chromosomes| -        | -           | 21.04 (1.07)       | 20.41 (.84) |
| XY Chromosomes| -        | -           | 20.22 (1.11)       | 20.34 (.92) |
| Column        | -        | -           | 21.06 (1.02)       | 20.51 (.90) |

a,b,c significant differences between values are represented by different superscripts
Table 3

*Study 1 Means (M) and Standard Errors (SE) for 2x2x2 Interactions Between Target Gender Characteristics on Rejection and Response Time, N = 127*

<table>
<thead>
<tr>
<th></th>
<th>Genitals</th>
<th></th>
<th></th>
<th></th>
<th>Response Time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vagina</td>
<td>Penis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chromosomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td>XY</td>
<td>XX</td>
<td>XY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td></td>
</tr>
<tr>
<td>Woman identity</td>
<td>1.24 (.05)</td>
<td>2.98 (.14)</td>
<td>3.24 (.14)</td>
<td>4.95 (.16)</td>
<td>3.10 (.08)</td>
</tr>
<tr>
<td>Man identity</td>
<td>5.26 ( .15)</td>
<td>3.26 ( .14)</td>
<td>2.97 ( .15)</td>
<td>1.38 ( .07)</td>
<td>3.22 ( .08)</td>
</tr>
<tr>
<td>Column</td>
<td>3.25 ( .08)</td>
<td>3.12 ( .09)</td>
<td>3.10 (.10)</td>
<td>3.17 (.08)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response Time (s)</th>
<th>Woman identity</th>
<th>Man identity</th>
<th>Column</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.38 (1.12)</td>
<td>22.26 (1.36)</td>
<td>19.32 (1.10)</td>
</tr>
<tr>
<td></td>
<td>22.89 (1.76)</td>
<td>23.11 (1.64)</td>
<td>23.00 (1.37)</td>
</tr>
<tr>
<td></td>
<td>23.45 (1.32)</td>
<td>19.27 (1.49)</td>
<td>21.36 (1.14)</td>
</tr>
<tr>
<td></td>
<td>20.92 (1.26)</td>
<td>17.99 (1.02)</td>
<td>19.46 (0.87)</td>
</tr>
<tr>
<td></td>
<td>20.91 (0.92)</td>
<td>20.66 (0.98)</td>
<td></td>
</tr>
</tbody>
</table>

Note: a,b,c significant differences between values are represented by different superscripts; x,y,z marginally significant differences between values are represented by different superscripts (p < 1.0)
<table>
<thead>
<tr>
<th></th>
<th>Transgender contact</th>
<th>Transgender contact</th>
<th>Transgender contact</th>
<th>Transgender contact</th>
<th>Transgender contact</th>
<th>Transgender contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td></td>
<td>Woman identity</td>
<td>2.66 (.14)</td>
<td>2.16&lt;sup&gt;a&lt;/sup&gt; (.15)</td>
<td>3.15&lt;sup&gt;b&lt;/sup&gt; (.24)</td>
<td>2.27&lt;sup&gt;a&lt;/sup&gt; (.09)</td>
<td>4.24&lt;sup&gt;c&lt;/sup&gt; (.14)</td>
</tr>
<tr>
<td></td>
<td>Man identity</td>
<td>2.96 (.15)</td>
<td>3.56&lt;sup&gt;b&lt;/sup&gt; (.24)</td>
<td>2.36&lt;sup&gt;a&lt;/sup&gt; (.16)</td>
<td>4.30&lt;sup&gt;c&lt;/sup&gt; (.14)</td>
<td>2.31&lt;sup&gt;a&lt;/sup&gt; (.09)</td>
</tr>
<tr>
<td></td>
<td>Column</td>
<td>2.81 (.13)</td>
<td>3.18 (.07)</td>
<td>3.14 (.08)</td>
<td>3.18 (.08)</td>
<td>3.14 (.08)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Response Time (s)</th>
<th>Response Time (s)</th>
<th>Response Time (s)</th>
<th>Response Time (s)</th>
<th>Response Time (s)</th>
<th>Response Time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Woman identity</td>
<td>18.59 (1.80)</td>
<td>20.10&lt;sup&gt;x&lt;/sup&gt; (1.91)</td>
<td>17.07&lt;sup&gt;x&lt;/sup&gt; (2.47)</td>
<td>19.85&lt;sup&gt;x&lt;/sup&gt; (1.11)</td>
<td>23.53&lt;sup&gt;x&lt;/sup&gt; (1.43)</td>
</tr>
<tr>
<td></td>
<td>Man identity</td>
<td>18.54 (1.92)</td>
<td>18.23 (2.24)</td>
<td>18.86 (2.12)</td>
<td>21.62 (1.30)</td>
<td>21.12 (1.23)</td>
</tr>
<tr>
<td></td>
<td>Column</td>
<td>18.56 (1.71)</td>
<td>19.16 (1.82)</td>
<td>17.96 (1.92)</td>
<td>20.74 (1.05)</td>
<td>22.33 (1.11)</td>
</tr>
</tbody>
</table>

<sup>a,b,c</sup> significant differences between values are represented by different superscripts; <sup>x,y</sup> marginally significant differences between values are represented by different superscripts (p < 1.0)
Table 5

*Study 2 Descriptives of Categorical Participant Characteristics, N = 190*

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender Identity independent from birth-assignment</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7 (3.7)</td>
</tr>
<tr>
<td>No</td>
<td>180 (94.7)</td>
</tr>
<tr>
<td>Unsure of gender identity</td>
<td>1 (.5)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td><strong>Gender assigned at birth</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>100 (52.6)</td>
</tr>
<tr>
<td>Male</td>
<td>84 (44.2)</td>
</tr>
<tr>
<td>Intersex</td>
<td>1 (.52)</td>
</tr>
<tr>
<td>I was not assigned a gender</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td><strong>How they think others perceive their gender</strong></td>
<td></td>
</tr>
<tr>
<td>Correctly</td>
<td>185 (97.4)</td>
</tr>
<tr>
<td>Incorrectly</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.0)</td>
</tr>
<tr>
<td><strong>Sexual attraction</strong></td>
<td></td>
</tr>
<tr>
<td>A constant and clear attraction to other gender</td>
<td>153 (80.5)</td>
</tr>
<tr>
<td>A constant and clear attraction to same gender</td>
<td>7 (3.7)</td>
</tr>
<tr>
<td>A constant and clear attraction to both women and men</td>
<td>8 (4.2)</td>
</tr>
<tr>
<td>A variable or fluid attraction to women and men</td>
<td>9 (4.7)</td>
</tr>
<tr>
<td>A constant, clear attraction to people regardless of gender identity/expression</td>
<td>8 (4.2)</td>
</tr>
<tr>
<td>I am asexual/have no attraction to any gender</td>
<td>1 (.5)</td>
</tr>
<tr>
<td>I am unsure about which gender(s) I am attracted to</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td><strong>Area surrounding current residents</strong></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>65 (34.2)</td>
</tr>
<tr>
<td>Suburban</td>
<td>85 (44.7)</td>
</tr>
<tr>
<td>Rural</td>
<td>38 (20.0)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>Hispanic or of Latin American decent</td>
<td>10 (5.3)</td>
</tr>
<tr>
<td>Not Hispanic or of Latin American decent</td>
<td>176 (92.6)</td>
</tr>
<tr>
<td>Unknown</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>10 (5.3)</td>
</tr>
<tr>
<td>Asian</td>
<td>4 (2.1)</td>
</tr>
<tr>
<td>Race</td>
<td>Count (Percentage)</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>1 (.5)</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>165 (86.8)</td>
</tr>
<tr>
<td>Other (Persian, Multi-racial, Hispanic, Arab)</td>
<td>6 (3.2)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a 4-year degree</td>
<td>103 (54.2)</td>
</tr>
<tr>
<td>A 4-year degree or higher</td>
<td>85 (44.8)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consider themselves to be an &quot;ally&quot; to Transgender people</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>93 (48.9)</td>
</tr>
<tr>
<td>No</td>
<td>95 (50.0)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consider themselves to be an &quot;ally&quot; to LGB people</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>113 (59.5)</td>
</tr>
<tr>
<td>No</td>
<td>75 (39.5)</td>
</tr>
<tr>
<td>Did not respond</td>
<td>2 (1.1)</td>
</tr>
</tbody>
</table>
Table 6

Study 2 Means (M) and Standard Errors (SE) for Main Effects of and Interaction between Target Gender Identity and Genitals on Rejection and Response Time, N = 190

<table>
<thead>
<tr>
<th>Target Gender Identity</th>
<th>Rejection</th>
<th>Response time</th>
<th>Row M (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vagina M (SE)</td>
<td>Penis M (SE)</td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>1.19 (.05)</td>
<td>5.26 (.13)</td>
<td>3.22 (.07)</td>
</tr>
<tr>
<td></td>
<td>17.87 (0.92)</td>
<td>23.56 (1.97)</td>
<td>20.72 (1.12)</td>
</tr>
<tr>
<td>Man</td>
<td>5.33 (.13)</td>
<td>1.15 (.05)</td>
<td>3.24 (.07)</td>
</tr>
<tr>
<td></td>
<td>23.53 (1.27)</td>
<td>18.08 (.98)</td>
<td>20.81 (0.89)</td>
</tr>
<tr>
<td>Column M (SE)</td>
<td>3.26 (.07)</td>
<td>3.20 (.07)</td>
<td>20.70 (0.83)</td>
</tr>
</tbody>
</table>

*a,b* significant differences between values are represented by different superscripts
Table 7

Study 2 Means (M) and Standard Errors (SE) for Main Effects of and Three-Way Interaction Between Perceiver Gender Essentialism, Target Gender Identity and Target Genitals on Rejection and Response Time, n = 188

<table>
<thead>
<tr>
<th></th>
<th>Low Essentialism</th>
<th>High Essentialism</th>
<th>Rejection</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>Vagina</td>
<td>Penis</td>
<td>Vagina</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td>Woman M (SE)</td>
<td>1.20\textsuperscript{a} (0.06)</td>
<td>5.38\textsuperscript{b} (0.12)</td>
<td>1.13\textsuperscript{a} (0.08)</td>
<td>4.81\textsuperscript{b} (0.17)</td>
<td>1.28\textsuperscript{a} (0.08)</td>
</tr>
<tr>
<td>Man M (SE)</td>
<td>5.47\textsuperscript{b} (0.12)</td>
<td>1.18\textsuperscript{a} (0.05)</td>
<td>4.80\textsuperscript{b} (0.16)</td>
<td>1.12\textsuperscript{a} (0.07)</td>
<td>6.14\textsuperscript{c} (0.17)</td>
</tr>
<tr>
<td>Column M (SE)</td>
<td>3.34 (0.06)</td>
<td>3.28 (0.06)</td>
<td>2.96 (0.08)</td>
<td></td>
<td>3.65 (0.08)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Low Essentialism</th>
<th>High Essentialism</th>
<th>Response time (s)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vagina</td>
<td>Penis</td>
<td>Vagina</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td>Woman M (SE)</td>
<td>17.30\textsuperscript{a} (1.01)</td>
<td>24.88\textsuperscript{b} (2.16)</td>
<td>16.32 (1.37)</td>
<td>22.70 (2.95)</td>
<td>18.29 (1.47)</td>
</tr>
<tr>
<td>Man M (SE)</td>
<td>22.66\textsuperscript{b} (1.40)</td>
<td>18.61\textsuperscript{a} (1.08)</td>
<td>22.80 (1.91)</td>
<td>18.36 (1.48)</td>
<td>22.53 (2.05)</td>
</tr>
<tr>
<td>Column M (SE)</td>
<td>19.98 (0.91)</td>
<td>21.75 (1.29)</td>
<td>20.05 (1.22)</td>
<td></td>
<td>21.69 (1.30)</td>
</tr>
</tbody>
</table>

\textsuperscript{a,b,c} significant differences between values are represented by different superscripts
Table 8

Study 2 means (M) and standard errors (SE) for main effects of and three-way interaction between perceiver transgender ally status, target gender identity, and target genitals on rejection and response time, n = 188

<table>
<thead>
<tr>
<th>Perceiver Gender</th>
<th>Ally Vagina M (SE)</th>
<th>Not Ally Vagina M (SE)</th>
<th>Ally Penis M (SE)</th>
<th>Not Ally Penis M (SE)</th>
<th>Row M (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman M (SE)</td>
<td>1.20a (.06)</td>
<td>1.21a (.08)</td>
<td>2.19 (.06)</td>
<td>2.68c (.17)</td>
<td>3.29 (.06)</td>
</tr>
<tr>
<td>Man M (SE)</td>
<td>5.47b (.12)</td>
<td>4.88b (.17)</td>
<td>6.27c (.16)</td>
<td>1.08a (.07)</td>
<td>3.33 (.06)</td>
</tr>
<tr>
<td>Column M (SE)</td>
<td>3.34 (.06)</td>
<td>3.02 (.08)</td>
<td>3.60 (.08)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceiver Gender</th>
<th>Ally Vagina M (SE)</th>
<th>Not Ally Vagina M (SE)</th>
<th>Ally Penis M (SE)</th>
<th>Not Ally Penis M (SE)</th>
<th>Row M (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman M (SE)</td>
<td>17.30a (1.01)</td>
<td>17.81 (1.46)</td>
<td>28.54 (3.14)</td>
<td></td>
<td>21.09 (1.23)</td>
</tr>
<tr>
<td>Man M (SE)</td>
<td>22.66b (1.40)</td>
<td>23.54 (2.04)</td>
<td>21.79 (1.57)</td>
<td></td>
<td>20.64 (.99)</td>
</tr>
</tbody>
</table>

a,b significant differences between values are represented by different superscripts (p < .001); Ally = identified as an ally to transgender people; Not Ally = did not identify as an ally to transgender people
Table 9

Study 2 Order Effects of Vignettes Presented First on Response Time (Log Transformed) for Each Subsequent Vignette

<table>
<thead>
<tr>
<th>Vignette:</th>
<th>Targets who identify as women</th>
<th></th>
<th>Targets who identify as men</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
<td>Not first</td>
<td></td>
<td>First</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>MP response time</td>
<td>1.12</td>
<td>.20</td>
<td>89</td>
<td>1.26</td>
</tr>
<tr>
<td>MV response time</td>
<td>1.22</td>
<td>.20</td>
<td>89</td>
<td>1.36</td>
</tr>
<tr>
<td>WV response time</td>
<td>1.13</td>
<td>.20</td>
<td>89</td>
<td>1.26</td>
</tr>
<tr>
<td>WP response time</td>
<td>1.26</td>
<td>.24</td>
<td>89</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Note: Degrees of freedom in italics were derived from a significant Levene's Test such that equal variance was not assumed; MP = vignette describing targets who identify as men and has a penis; MV = vignette describing targets who identify as men and has a vagina; WV = vignette describing targets who identify as women and has a vagina; WP = vignette describing targets who identify as women and has a penis.
### Table 10

**Study 3 Descriptives of Categorical Participant Characteristics and Differences Between Adjusters and Defaulters, N = 176**

<table>
<thead>
<tr>
<th></th>
<th>Total Sample (N = 176)</th>
<th>Defaulters (n = 151)</th>
<th>Adjusters (n = 25)</th>
<th>X² for Defaulters and Adjusters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender Identity independent from birth-assignment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (2.3)</td>
<td>2 (1.3)</td>
<td>2 (8.0)</td>
<td>4.30*</td>
</tr>
<tr>
<td>No</td>
<td>172 (97.7)</td>
<td>149 (98.7)</td>
<td>23 (92.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender assigned at birth</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>91 (51.7)</td>
<td>73 (48.7)</td>
<td>18 (72.0)</td>
<td>4.67*</td>
</tr>
<tr>
<td>Male</td>
<td>84 (47.7)</td>
<td>77 (51.3)</td>
<td>7 (28.0)</td>
<td></td>
</tr>
<tr>
<td>Did not respond</td>
<td>1 (0.6)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td><strong>How they think others perceive their gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly</td>
<td>174 (98.9)</td>
<td>150 (99.3)</td>
<td>24 (96.0)</td>
<td>2.13</td>
</tr>
<tr>
<td>Incorrectly</td>
<td>2 (1.1)</td>
<td>1 (0.7)</td>
<td>1 (4.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Sexual attraction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A constant and clear attraction to other gender</td>
<td>151 (85.8)</td>
<td>134 (88.7)</td>
<td>17 (68.0)</td>
<td></td>
</tr>
<tr>
<td>A constant and clear attraction to same gender</td>
<td>10 (5.7)</td>
<td>8 (5.3)</td>
<td>2 (8.0)</td>
<td></td>
</tr>
<tr>
<td>A constant and clear attraction to both women and men</td>
<td>1 (0.6)</td>
<td>1 (0.7)</td>
<td>0 (0.0)</td>
<td>14.09*</td>
</tr>
<tr>
<td>A variable or fluid attraction to women and men</td>
<td>2 (1.1)</td>
<td>1 (0.7)</td>
<td>1 (4.0)</td>
<td></td>
</tr>
<tr>
<td>A constant, clear attraction to people regardless of gender identity/expression</td>
<td>11 (6.3)</td>
<td>7 (4.6)</td>
<td>4 (16.0)</td>
<td></td>
</tr>
<tr>
<td>I am unsure about which gender(s) I am attracted to</td>
<td>1 (0.6)</td>
<td>1 (0.0)</td>
<td>1 (4.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Area surrounding current residence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>49 (27.8)</td>
<td>42 (27.8)</td>
<td>7 (28.0)</td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>96 (54.5)</td>
<td>82 (54.3)</td>
<td>14 (56.0)</td>
<td>0.06</td>
</tr>
<tr>
<td>Rural</td>
<td>31 (17.6)</td>
<td>27 (17.9)</td>
<td>4 (16.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic or of Latin</td>
<td>11 (6.3)</td>
<td>10 (6.6)</td>
<td>1 (4.0)</td>
<td>0.43</td>
</tr>
<tr>
<td>American decent</td>
<td>164 (93.2)</td>
<td>140 (92.7)</td>
<td>24 (96.0)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1 (0.6)</td>
<td>1 (0.7)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>13 (7.4)</td>
<td>11 (7.3)</td>
<td>2 (8.0)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>17 (9.7)</td>
<td>15 (9.9)</td>
<td>2 (8.0)</td>
<td></td>
</tr>
<tr>
<td>Native Hawaiian or Other</td>
<td></td>
<td></td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>138 (78.4)</td>
<td>118 (78.1)</td>
<td>20 (80.0)</td>
<td></td>
</tr>
<tr>
<td>Other (Persian, Multi-racial, Hispanic, Arab)</td>
<td>7 (4.0)</td>
<td>6 (4.0)</td>
<td>1 (4.0)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a 4-year degree</td>
<td>101 (57.4)</td>
<td>87 (57.6)</td>
<td>14 (56.0)</td>
</tr>
<tr>
<td>A 4-year degree or higher</td>
<td>75 (42.6)</td>
<td>64 (42.4)</td>
<td>11 (44.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trans ally status</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>106 (60.2)</td>
<td>88 (58.3)</td>
<td>18 (72.0)</td>
</tr>
<tr>
<td>No</td>
<td>70 (39.8)</td>
<td>63 (41.7)</td>
<td>7 (28.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LGB ally status</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>123 (69.9)</td>
<td>105 (69.5)</td>
<td>18 (72.0)</td>
</tr>
<tr>
<td>No</td>
<td>53 (30.1)</td>
<td>46 (30.5)</td>
<td>7 (28.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knows or has known a trans or genderqueer person(s)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57 (32.4)</td>
<td>47 (31.1)</td>
<td>10 (40.0)</td>
</tr>
<tr>
<td>No</td>
<td>119 (67.6)</td>
<td>104 (68.9)</td>
<td>15 (60.0)</td>
</tr>
</tbody>
</table>

| Know transgender person who identifies as woman      | 46 (80.7)| 37 (78.72)| 9 (90.0) | 0.67     |
| Know transgender person who identifies as man        | 24 (42.1)| 15 (31.91)| 9 (90.0) | 11.05**  |
| Know transgender person who identifies as genderqueer| 14 (24.6)| 8 (17.02)| 6 (60.0) | 8.22**   |
| Know transgender person who identifies some other way| 4 (7.0) | 2 (4.26) | 2 (20.0) | 3.03^    |

^ = marginal significance (p < 1.0); * p < .05, **p < .01
Table 11

*Study 3 Means (M) and Standard Errors (SE) Among Adjusters for Main Effects and 2x2 Interaction Between Target Characteristic and Distraction Task on Rejection and Response Time, n = 25*

<table>
<thead>
<tr>
<th></th>
<th>Rejection Scores</th>
<th>Response Times (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distraction Task</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Absent</td>
<td>Present</td>
</tr>
<tr>
<td>Genitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consistent</td>
<td>1.32(^a) (.21)</td>
<td>1.10(^a) (.06)</td>
</tr>
<tr>
<td>Inconsistent</td>
<td>1.06(^b) (.03)</td>
<td>2.72(^b) (.48)</td>
</tr>
<tr>
<td>Column</td>
<td>1.19(^a) (.09)</td>
<td>1.91(^b) (.12)</td>
</tr>
</tbody>
</table>

Note: \(^a,b\) significant differences between values are represented by different superscripts.
Table 12

*Study 3 Means (M) and Standard Errors (SE) Among Defaulters for Main Effects and 2x2 Interaction Between Target Characteristic and Distraction Task on Rejection and Response Time, n = 150*

![Table with rejection scores and response times](https://example.com/table.png)

<table>
<thead>
<tr>
<th>Target Characteristics</th>
<th>Distraction Task</th>
<th>Rejection Scores</th>
<th>Response Times (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M (SE)</td>
<td>M (SE)</td>
</tr>
<tr>
<td></td>
<td>Absent</td>
<td>Present</td>
<td>Row</td>
</tr>
<tr>
<td>Consistent</td>
<td>1.52 (.08)</td>
<td>1.53 (.09)</td>
<td>1.52&lt;sup&gt;a&lt;/sup&gt; (.07)</td>
</tr>
<tr>
<td>Inconsistent</td>
<td>5.12 (.14)</td>
<td>4.88 (.16)</td>
<td>5.00&lt;sup&gt;b&lt;/sup&gt; (.13)</td>
</tr>
<tr>
<td>Column</td>
<td>3.32 (.07)</td>
<td>3.20 (.09)</td>
<td></td>
</tr>
</tbody>
</table>

Note: <sup>a,b</sup> significant differences between values are represented by different superscripts
Table 13

*Study 4 Descriptives of Categorical Participant Characteristics, N = 68*

<table>
<thead>
<tr>
<th>Total Sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>n</em> (%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender Identity independent from birth-assignment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4 (5.88)</td>
</tr>
<tr>
<td>No</td>
<td>64 (94.12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender assigned at birth</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>28 (41.2)</td>
</tr>
<tr>
<td>Male</td>
<td>38 (55.9)</td>
</tr>
<tr>
<td>Intersex</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>I was not assigned a gender</td>
<td>1 (1.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How they think others perceive their gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly</td>
<td>67 (98.51)</td>
</tr>
<tr>
<td>Incorrectly</td>
<td>1 (1.49)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual attraction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A constant and clear attraction to other gender</td>
<td>52 (76.47)</td>
</tr>
<tr>
<td>A constant and clear attraction to same gender</td>
<td>3 (4.41)</td>
</tr>
<tr>
<td>A constant and clear attraction to both women and men</td>
<td>3 (4.41)</td>
</tr>
<tr>
<td>A variable or fluid attraction to women and men</td>
<td>3 (4.41)</td>
</tr>
<tr>
<td>A constant, clear attraction to people regardless of gender identity/expression</td>
<td>2 (2.94)</td>
</tr>
<tr>
<td>I am unsure about which gender(s) I am attracted to</td>
<td>1 (1.47)</td>
</tr>
<tr>
<td>I am asexual/have no attraction to any gender</td>
<td>1 (1.47)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area surrounding current residence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>14 (20.6)</td>
</tr>
<tr>
<td>Suburban</td>
<td>33 (48.5)</td>
</tr>
<tr>
<td>Rural</td>
<td>21 (30.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic or of Latin American decent</td>
<td>6 (8.8)</td>
</tr>
<tr>
<td>Not Hispanic or of Latin American decent</td>
<td>60 (88.2)</td>
</tr>
<tr>
<td>Unknown</td>
<td>2 (2.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>2 (2.9)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>2 (2.9)</td>
</tr>
<tr>
<td>Asian</td>
<td>3 (4.4)</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>2 (2.9)</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>58 (85.3)</td>
</tr>
<tr>
<td>Other (Mixed)</td>
<td>1 (1.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a 4-year degree</td>
<td>33 (48.6)</td>
</tr>
<tr>
<td>A 4-year degree or higher</td>
<td>35 (51.4)</td>
</tr>
</tbody>
</table>
Table 14

*Study 4 Mean Differences for Clothing Items on Gender Exclusivity and Social Desirability, N = 68*

<table>
<thead>
<tr>
<th>Clothing item</th>
<th>Gender Exclusivity</th>
<th>Social Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dresses</td>
<td>5.05</td>
<td>5.49</td>
</tr>
<tr>
<td>Bras</td>
<td>5.41</td>
<td>5.36</td>
</tr>
<tr>
<td>Purse</td>
<td>5.07</td>
<td>5.22</td>
</tr>
<tr>
<td>High Heels</td>
<td>5.12</td>
<td>5.42</td>
</tr>
<tr>
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<td>2.57</td>
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Table 15

Study 4 Correlations Between Gender Exclusivity and Social Desirability of Dresses, Tuxedos, Bras, and Cologne for Women and Men, N = 168

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<tr>
<th>Gender Exclusivity</th>
<th>Dresses for women</th>
<th>Tuxedos for women</th>
<th>Dresses for men</th>
<th>Tuxedos for men</th>
<th>Bras for women</th>
<th>Cologne for women</th>
<th>Bras for men</th>
<th>Cologne for men</th>
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<td>-.21</td>
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<td>-</td>
<td>-</td>
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<td>-.35**</td>
<td>-.61**</td>
<td>.48**</td>
<td>.63**</td>
<td>-.41**</td>
</tr>
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<td>-</td>
<td>-</td>
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<td>-.42**</td>
<td>.17</td>
<td>.57**</td>
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<td>-</td>
<td>-</td>
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<td>-.19</td>
<td>-.35**</td>
<td>.34**</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-.67**</td>
<td>.46**</td>
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<td>-</td>
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<th>Tuxedos for women</th>
<th>Dresses for men</th>
<th>Tuxedos for men</th>
<th>Bras for women</th>
<th>Cologne for women</th>
<th>Bras for men</th>
<th>Cologne for men</th>
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<td>.47**</td>
<td>-.25*</td>
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<td>.41**</td>
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<td>-.39**</td>
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<td>.39**</td>
<td>-.13</td>
<td>-.28*</td>
<td>.09</td>
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<td>-.27*</td>
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<td>-.31**</td>
<td>-.38**</td>
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<td>.57**</td>
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<td>.35**</td>
<td>.42**</td>
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<tr>
<td>Bras for men</td>
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<td>.56**</td>
<td>-.34**</td>
<td>-.45**</td>
<td>.17</td>
<td>.46**</td>
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Table 15 (continued)

Study 4 Correlations Between Gender Exclusivity and Social Desirability of Dresses, Tuxedos, Bras, and Cologne for Women and Men, $N = 168$

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<th>Dresses for men</th>
<th>Tuxedos for men</th>
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<th>Cologne for women</th>
<th>Bras for men</th>
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<td>.28**</td>
<td>.47**</td>
<td>-.25*</td>
<td>-.34**</td>
<td>.29**</td>
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<td>.15</td>
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<td>-.28*</td>
<td>.09</td>
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Table 16

*Study 5 descriptives of categorical participant characteristics and differences between adjusters and defaulters, N = 210*

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<tr>
<th></th>
<th>Total Sample (N = 210)</th>
<th>Defaulters (n = 195)</th>
<th>Adjusters (n = 15)</th>
<th>X² for Defaults and Adjusters</th>
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<tr>
<td>independent from</td>
<td></td>
<td></td>
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<tr>
<td>birth-assignment</td>
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<td>0 (0.0)</td>
<td>0 (0.0)</td>
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<td>195 (100.0)</td>
<td>15 (100.0)</td>
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<tr>
<td><strong>Gender assigned at</strong></td>
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<td></td>
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<tr>
<td>birth</td>
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<td></td>
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<tr>
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<tr>
<td>perceive their gender</td>
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<td>Correctly</td>
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<td>15 (100.0)</td>
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<td>170 (87.2)</td>
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<td>1 (6.7)</td>
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<td>9 (4.6)</td>
<td>2 (13.3)</td>
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<td>2 (13.3)</td>
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<td>1 (0.5)</td>
<td>1 (6.7)</td>
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<td>2 (13.3)</td>
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<tr>
<td>Not Hispanic or of Latin</td>
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<td>1 (0.5)</td>
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<td>-------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>--------</td>
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<tr>
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<td>4 (2.1)</td>
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<td>Less than a 4-year degree</td>
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<tr>
<td>A 4-year degree or higher</td>
<td>86 (41.0)</td>
<td>80 (41.0)</td>
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<tr>
<td>Knows or has known a trans or genderqueer person(s)</td>
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<td></td>
<td></td>
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<tr>
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<td>56 (26.7)</td>
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<td>7 (46.7)</td>
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<td>154 (73.3)</td>
<td>147 (74.9)</td>
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<tr>
<td>Know transgender person who identifies as woman</td>
<td>44 (78.6)</td>
<td>41 (83.7)</td>
<td>3 (42.9)</td>
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<tr>
<td>Know transgender person who identifies as man</td>
<td>20 (35.7)</td>
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<td>Know transgender person who identifies as genderqueer</td>
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<td>8.42**</td>
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<td>Know trans person who identifies some other way</td>
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<td>1 (2.0)</td>
<td>1 (14.3)</td>
<td>2.67</td>
</tr>
</tbody>
</table>

*= marginal significance (p < 1.0); **p < .05, **p < .01
Table 17

Study 5 Means (M) and Standard Errors (SE) for Main Effects and 2x2 Interaction Between Genitals and Clothing Among Adjusters on Rejection and Response Time, n = 15

Note: a,b significant differences between values are represented by different superscripts; ƚ marginal significance (p < 1.0) was found between values

| Genitals | Clothing       |  |  |
|----------|----------------|--------------------------|
|          | Absent         | Present and Consistent   | Present and Inconsistent | Row   |
| Genitals | M (SE)         | M (SE)                  | M (SE)                   | M (SE) |
| Consistent | 1.33^a (.5)   | 1.07^a (.07)           | 1.33^a (.21)              | 1.24^a (.15) |
| Inconsistent | 1.10^a (.05) | 3.40^b (.66)          | 3.33^b (.63)              | 2.61^b (.43) |
| Column   | 1.22^a (.13)  | 2.23^b (.34)           | 2.33^b (.32)              |         |

| Genitals | Consistent |  |  |
|----------|------------|--------------------------|
|          | Response Times (s) |  |  |
| Genitals | Consistent  |  |  |
|          | 20.32 (1.57) | 15.86 (1.98) | 14.52 (1.17) | 16.90^f (.96) |
| Inconsistent | 24.11 (3.92) | 15.34 (1.41) | 21.67 (2.96) | 20.37^f (1.78) |
| Column   | 22.21^a (2.07) | 15.60^b (1.30) | 18.10 (1.63) |         |
Table 18

Study 5 Means (M) and Standard Errors (SE) for Main Effects and 2x2 Interaction Between Genitals and Clothing Among Defaulters on Rejection and Response Time, n = 195

<table>
<thead>
<tr>
<th>Genitals</th>
<th>Clothing</th>
<th>Absent M (SE)</th>
<th>Present and Consistent M (SE)</th>
<th>Present and Inconsistent M (SE)</th>
<th>Row M (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent</td>
<td></td>
<td>1.56 (.09)</td>
<td>1.38 (.06)</td>
<td>1.81 (.09)</td>
<td>1.58&lt;sup&gt;a&lt;/sup&gt; (.06)</td>
</tr>
<tr>
<td>Inconsistent</td>
<td></td>
<td>5.15 (.11)</td>
<td>4.96 (.13)</td>
<td>5.21 (.12)</td>
<td>5.11&lt;sup&gt;b&lt;/sup&gt; (.10)</td>
</tr>
<tr>
<td>Column</td>
<td></td>
<td>3.35&lt;sup&gt;a&lt;/sup&gt; (.07)</td>
<td>3.17&lt;sup&gt;b&lt;/sup&gt; (.07)</td>
<td>3.51&lt;sup&gt;b&lt;/sup&gt; (.07)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genitals</th>
<th>Consistent</th>
<th>Response Times (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present and Consistent</td>
<td>22.82 (1.96)</td>
</tr>
<tr>
<td>Inconsistent</td>
<td>26.75 (1.17)</td>
<td>19.95 (.89)</td>
</tr>
<tr>
<td>Column</td>
<td>24.78&lt;sup&gt;a&lt;/sup&gt; (1.21)</td>
<td>18.97&lt;sup&gt;b&lt;/sup&gt; (.90)</td>
</tr>
</tbody>
</table>

Note: a<sup>b</sup> significant differences between values are represented by different superscripts; i<sup>†</sup> marginal significance (p < 1.0) was found between values.
Figure 1

(In)consistency processing model of gender attribution

Individual differences in cognitive processing
1. Contact with transgender
2. Openness to experience & agreeableness
3. Essentialism
4. Biological gender beliefs
5. Authoritarianism
6. Moral traditionalism & Egalitarianism

Gender visualization (automatic)
Consistency between target biology and identity

Default Schema (automatic)
Biology determines gender

Schema adjustment (explicit)
Identity determines gender

Gender attribution (Outcome)
1. Rejection of target gender identity
2. Acceptance of target gender identity

Moderating cognitive factor
Presence of distraction

Moderating target factor
Consistency between additional target characteristic and identity

X

A

B

C

D

Y

Z

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Note: XX = XX chromosomes; XY = XY chromosomes; V = vagina, P = penis; W = identifies as a woman; M = identifies as a man
Figure 3

Study 1 Interaction Between Transgender Contact, Chromosomes and Gender Identity on Rejection and Response Time

Note: C = contact with transgender people, NC = no contact with transgender people; XX = XX chromosomes. XY = XY chromosomes; W = identifies as a woman; M = identifies as a man
Study 2 Interaction Between Target Gender Identity and Genitals on Rejection and Response

Time

Note: The lines depicting targets who identify as women and targets who identify as men may be difficult to distinguish because they are so similar. W = identifies as a woman; M = identifies as a man; V = has a vagina; P = has a penis.
Figure 5

Study 2 Interaction Between Essentialism, Target Gender Identity, and Genitals on Rejection and Response Time

Note: The lines for rejection are included for both targets who identify as women and targets who identify as men in this graph, but they may be difficult to distinguish because they are so similar. LE = low essentialism; HE = high essentialism; W = identifies as a woman; M = identifies as a man; V = Vagina; P = Penis
Figure 6

Study 2 Interaction Between Transgender Ally Status, Target Gender Identity and Genitals on Rejection and Response Time

Note: The plot for rejection among targets who identify as women is included in this graph, but it is difficult to distinguish from the plot for rejection among targets who identify as men because they are so similar. A = Identifies as an ally to transgender people; NA = Does not identify as an ally to transgender people; W = Identifies as a woman; M = Identifies as a man; V = Vagina; P = Penis
Note: C = Target characteristics were stereotype-consistent (woman/vagina, man/penis); INC = Target characteristics were stereotype-inconsistent (woman/penis, man/vagina)
Study 5 Interactions Between Genitals and Clothing on Rejection and Response Time for Adjusters and Defaulters

Note: C = Stereotype-consistent with gender identity; INC = Stereotype-inconsistent with gender identity
References


approaches to stereotype formation, maintenance, and change (pp. 299–319). Mahwah, NJ: Erlbaum.


