



Essay

# Gender Is the Name of the Frame: Understanding Gender through the Lens of Relational Frame Theory

Lynn Farrell <sup>1,\*</sup>, Táhcita M. Mizael <sup>2</sup> and Evelyn R. Gould <sup>3</sup>

<sup>1</sup> Department of Psychology, School of Business, National College of Ireland, D01 K6W2 Dublin, Ireland

<sup>2</sup> UniSA Justice & Society, University of South Australia, Adelaide 5072, Australia; tahcitammizael@gmail.com

<sup>3</sup> New England Center for OCD and Anxiety, Melrose, MA 02176, USA; evelyn@newenglandocd.org

\* Correspondence: lynn.farrell@ncirl.ie

**Abstract:** While researchers continue to develop their understanding of gender as a complex and multifaceted concept, the detrimental impact of gender-related inequity and social injustice persists. This conceptual paper describes the potential benefits of incorporating Relational Frame Theory (RFT) as a contextual and pragmatic approach to gender. An RFT lens might enhance our understanding of gender as a language-based phenomenon, involving patterns of derived relational responding and rule-governed behavior. Such an understanding might then facilitate the development of assessments and context-sensitive interventions that support flexible and expansive experiences of gender that promote thriving. Despite the potential utility of an RFT approach, RFT has rarely been applied to gender-related concerns. This paper aims to provide a starting point for exploring gender from an RFT perspective, highlight relevant RFT studies, acknowledge limitations of current lines of research, and provide recommendations regarding future research. We hope that the paper will also act as a call to action for contextual behavioral scientists, as well as demonstrate how an RFT perspective might both align with, as well as add to, existing perspectives from other disciplines.

**Keywords:** gender; relational frame theory; behavior analysis; equity; diversity; inclusion



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## 1. Introduction

It is no easy task to comprehensively define and understand the complex and multifaceted concept of gender; however, it continues to be an important one. The concept of gender is typically discussed in terms of three components: gender identity (a person's felt sense and labeling of their own gender), gender expression (how one chooses to communicate their gender through, for example, appearance and behaviors), and gender roles and expectations (patterns of behavior, physical characteristics, etc., that a particular culture expects of gendered individuals, particularly in line with a binary concept of gender; [American Psychological Association 2015](#); [Wood and Eagly 2002](#)). Gender is a socially significant issue that impacts all of us, and the detrimental impact of gender-related inequity and social injustice has been well documented and includes health disparities (e.g., [World Health Organization 2021](#)), educational disparities (e.g., [UNESCO 2023](#)), economic disparities and differential levels of poverty (e.g., [Inequality.org n.d.](#)), differential levels of interpersonal and sexual violence (e.g., [World Health Organization 2021](#)), disparities in criminal justice (e.g., [United Nations Office on Drugs and Crime 2014](#)), increased housing insecurity (e.g., [Glick et al. 2020](#)), environmental disparities (e.g., [United Nations Environment Programme 2016](#)), mental ill-health (e.g., [Wittlin et al. 2023](#)), suicidality (e.g., [Valentine and Shipherd 2018](#)), and internalized oppression or stigma (e.g., [Puckett and Levitt 2015](#)). Much of the literature thus far has focused on the impact of binary concepts of gender, despite the increasing use of terms that describe gender identities and expressions that fall outside this binary conceptualization (such as gender fluid, genderqueer, or nonbinary; e.g.,

Diamond 2020; Galupo et al. 2017; Hegarty et al. 2018). The literature examining the experiences of non-binary (e.g., Schudson and Morgenroth 2022) and transgender individuals is still emerging (e.g., Marshall et al. 2019).

Historical and current events, including increased violence, discrimination and harmful policies against gender and sexual minorities around the globe, continue to highlight the need for a contextual, pragmatic, and social justice-oriented approach to understanding gender and developing tools that promote equity and inclusion, and empower marginalized groups. In this paper, we hope to describe such an approach, specifically illustrating the potential benefits of a Relational Frame Theory (RFT; Hayes et al. 2001) approach to gender. This contextual relational approach aligns well with theorizing from the broader academic literature, proposed by researchers within feminist theories, gender studies and social psychology, suggesting that gender is more fluid than previously understood (Powell et al. 2016), largely socially constructed, and performative, involving behavioral patterns enacted by individuals that are socially reinforced (e.g., Butler 1999; Eagly and Wood 2012; Morgenroth and Ryan 2021). While there is yet to be a consensus on the exact determinants of gender, a person's gender identity and expression is likely influenced by complex interactions between many genetic and environmental factors (e.g., Hyde et al. 2019; Polderman et al. 2018; Powell et al. 2016). The RFT approach described below acknowledges this interplay between biology and environment, while viewing gender as dynamic and influenced by our socio-cultural environment.

Our understanding of gender is continually evolving, and we do not claim to definitively cover all relevant dimensions. Rather we present this approach in the belief that it can enhance our understanding of gender by specifically explicating the contextual behavioral processes (specifically language processes) that underlie the formation and maintenance of gender relations influenced by our socio-cultural communities, which have become embedded in our social institutions. Interacting with our current and historical contexts, these gender relations impact on our behavior towards ourselves and others. We contribute to the literature as three people directly impacted by gender issues, and bring a diversity of identities and lived experience to this work, alongside any academic, applied, or clinical knowledge of this topic. However, we acknowledge that our voices do not represent all people or all ways of knowing about this topic; indeed, the people who most need their voices heard and who are most negatively impacted by gender issues are frequently absent from this conversation. We hope to invite continued discourse, highlight relevant RFT-based research, acknowledge limitations, and make recommendations regarding future exploration in this paper.

We will first provide a general introduction to RFT to familiarize readers with some of the core tenets of the theory. We will then move to provide a more in-depth exploration of behavior relevant to gendered experiences including social categorization, how gender terms function as sources of contextual control, an RFT account of rule-governed behavior in relation to gender, and a consideration of how we may influence arbitrarily applicable relational responding. Through this discussion we will highlight how gender is dynamic, contextual, and influenced by social contingencies. Gender beliefs and stereotypes (i.e., rules) can become part of our sense of self, contributing to our experience of our gender identity. We will also highlight how gender-based rules can limit our repertoire, and gender terms may act as a contextual cue for our own and others behavior at all levels, influencing our behavior in predictable ways. We conclude with a call to action for the field and researchers more broadly. This represents an important step in generating further research, activism and advocacy that may complement but also broaden interests beyond therapeutic applications of RFT to gender (see, for example, Skinta and Curtin 2016; Stitt 2020).

## 2. Overview of Relational Frame Theory

RFT is an account of language and cognition that finds its foundation in behavior analysis, which seeks to understand and influence behavior by identifying functional relationships between behavior and context. From a radical behavioral perspective, anything

a human does is considered behavior and, thus, subject to analysis, including behaviors that might be referred to as “cognition” (thinking, remembering, imagining, etc.) and “language” (overt or covert). Second, any behavior only “makes sense” in context (where context refers to all aspects of a person’s experience, including history, biology, social context, culture, emotions, thoughts, and so on; Hayes et al. 2021). Behavior analysts view gender (and other concepts such as race and class) as a social construct—a product of our socio-verbal community rather than something inherent to the individual (Ruiz 2003). Our conceptualization of gender must, thus, consider cultural practices that involve language, sources of environmental influence and broader layers of social context, including the intersectionality of social identities, cultures, and environments. Language appears to play a critical role in many important aspects of human experience, both the adaptive and the problematic. Language connects, empowers, affirms, heals, offers hope, and so on, but it is also involved in “othering”, to oppress, exclude, stigmatize, discriminate, disempower, and more. As writer and speaker, Ijeoma Iluo notes, “all oppression of race, class, gender, religion, ability, sexuality, etc.—it all began with words”.

RFT proposes that the establishment of arbitrary relations among stimuli is an important way by which stimuli can acquire different functions or “meaning” (including those associated with gender) and, thus, influence behavior in predictable ways (including gender-related behavior). From an RFT perspective, this relational behavior dominates how we form our societies and develop cultural practices that organize and influence our behavior: the words we use impact our understanding of gender across contexts and our behavior both influences and is influenced by the culture of the systems within which we operate. In this way, gender can be seen as relational and contextual.

With its focus on explaining and predicting behavior, RFT has broad utility; however, it has rarely been applied to study, understand, or address issues related to gender. Indeed, the field of behavior analysis as a whole has continued to demonstrate a lack of engagement in relation to addressing issues of gender within its own community (Baires and Koch 2020; though see Ruiz 1995, 1998, 2003, 2009). This paper discusses gender from a behavior-analytic perspective, specifically expanding on the existing literature by incorporating a contemporary RFT perspective of gender that also provides a point of entry for intervention and change. For example, this contextual behavioral approach may help us better understand how to effectively address beliefs and practices that support gender-related inequities and identify strategies that promote more flexible experiences of gender. We will briefly summarize the key features of RFT before discussing its relevance for gender in more detail.

According to RFT, we develop the ability to relate stimuli in arbitrary ways (as opposed to just based on physical, non-arbitrary properties). For example, we might relate to stimuli as if they were the same (“The word “ball” in Portuguese is “bola”, “ball” = “bola”), opposite (“Sad is the opposite of happy”), different (“A square is different than a circle”), a comparison (“Shostakovich is better than Mozart”), a hierarchy (“Dogs are part of the mammals category”), temporal (“Yesterday I ate a pie”), spatial (“The pants are in the drawer”), causal (“He got a traffic ticket because he ran a red light”), or deictic relations (“If I were you, I would call her”; e.g., Hayes et al. 2001). These are all examples of types of relational responding referred to as *relational frames*.

We acquire this ability by being exposed to numerous exemplars of stimulus pairs (typically from infancy via ongoing interactions with caregivers) that vary in most of their physical properties bar one, which enables the abstraction of that specific relation. For example, as a small child, parents may expose their children to different objects, and say things like “Look! This tennis ball is smaller than this cuddly toy”, or “This train is smaller than that doll’s house”, and, in other instances, ask their children “Which one is smaller: this doll or this dollhouse?”, among other questions, reinforcing correct choices (“That’s right! The doll is smaller than the dollhouse”). Over time and with exposure the frame of comparison is, thus, abstracted.

According to RFT, after individuals learn to relate and respond to relations based on physical properties, the use of contextual cues (such as “is”, “more”, “better”, etc.), prompts individuals to also respond correctly to arbitrary relations, such as choosing the correct coin when given the instruction “Which coin has more value: a 50 cent coin or a euro?”. Although the 50 cent coin is physically bigger, the euro has a greater monetary value at 100 cents. Therefore, the individual should respond to the coins’ arbitrarily assigned values as opposed to their physical properties (Hayes et al. 2001). In sum, according to RFT, humans increasingly respond arbitrarily, applying relational responses to any stimulus sets, including social categories such as gender, based on their learning history.

A key feature of this type of responding (called arbitrarily applicable relational responding; AARR) is transformation of functions. According to RFT, the functions of stimuli can transform according to the type of arbitrary relation established. For instance, a child might be taught that “boys are strong and don’t cry” and, without any direct training or instruction, the child may derive not only that “girls are weak and emotional”, but also that “crying is a sign of weakness” or “crying is bad”. The child may go on to behave in accordance with these new rules, relating to themselves and others in new (and potentially unhelpful and stereotyped) ways. This ability to learn or derive relations between stimuli even in the absence of direct instruction or experience with the relevant stimuli can be an important way to understand how we rapidly learn to categorize and respond to social stimuli. We turn now to consider an RFT perspective of gender in detail.

### 3. Gender and Social Categorization According to RFT

A key feature of gender is that it serves as a form of social categorization and is one of the first to emerge among young children (see Rhodes and Baron 2019). Social categorization allows us to make quick inferences about people and social groups, shaping how we engage with our social world by, for example, influencing our recall of relevant information (e.g., Dijksterhuis and Van Knippenberg 1995), how we interpret a person’s behavior (e.g., Kunda and Sherman-Williams 1993) and even how we evaluate their suitability for particular roles (e.g., Reuben et al. 2014). Therefore, based on perceived/presumed gender we may infer someone will behave a certain way, be interested in and value certain things, and so on.

Arbitrarily applicable relational responding facilitates the development of large and complex relational networks that influence how we move through or “make sense” of our social worlds. We quickly come to establish evaluative and descriptive relational networks about ourselves and other people (Hayes et al. 2001). The conceptualized self or self-as-content is a relational network consisting of self-rules, labels, beliefs, etc.—it is the story we develop about ourselves and our experiences over time (McHugh et al. 2019; Törneke 2010). For example, a person may have a self-rule, “I am a kind person”, based on their behavioral patterns across contexts that have been reinforced by their socio-verbal community as how a kind person behaves (e.g., offering help to others in need). They may then perceive other behavior they engage in through the lens of this belief, relating themselves consistently to “kind” behaviors and avoiding or reinterpreting any perceived “unkind” behavior to strengthen or reinforce their belief. The conceptualized other or other-as-content represents relatively enduring relations that form about other people’s behavior, characteristics, etc. (Hayes et al. 2001). For example, if you are on a date with someone and they treat the waiting staff badly, you might generate the belief that they are a “rude” person (disregarding any further contextual factors that may have influenced their behavior in that moment). Since rudeness is related to unpleasantness and is socially sanctioned in many contexts you may behave towards your date in accordance with this belief by avoiding a second date and declining to get to know them further. It is important to note that, from an RFT perspective, our sense of self involves repertoires of behavior including acts of observing, describing, and evaluating relevant stimulus relations via relational framing: “selfing” is something we are doing, as opposed to involving mental constructs (Styles and Atkins 2018). And of course, there can be no “I/me” without a “you”. Key to these forms of



intra- and interpersonal relating are deictic relational frames involved in perspective-taking and selfing. Deictic relating involves discriminating between interpersonal (I vs. you), spatial (here vs. there) and temporal (now vs. then) relational frames (McHugh et al. 2019).

Building on these elaborated networks of self- and other-as-content, we can come to construct conceptualized groups “when two or more individuals come to participate in a frame of coordination under the contextual control of one or more shared characteristics that are contained in a conceptualized self and conceptualized others” (Hayes et al. 2001, p. 198). The relational network constituting a conceptualized group such as gender can then function as relational contextual cues for our behavior, transforming the social functions of individuals in gender groups (e.g., how we behave towards someone from a particular gender group or how we expect them to behave; Hayes et al. 2001). For example, being told “You are a girl” as a child enables gender to become part of our conceptualized self, and we may derive that we are expected to behave “like a girl” and like “girls’ things”. This gendered behavior is reinforced by others in our socio-cultural community who have learned similar gender relations through exposure to shared cultural contingencies and gendered societal institutions or systems that reinforce often rigid, stereotypical binary expressions of gender that benefit some and harm others.

In line with this, binary gender labels have been found to emerge in most children’s language between 18 and 24 months (see Martin and Ruble 2010 for a review), influenced by the use of gender labels by significant figures (e.g., caregivers, siblings, educators) in a child’s life when referring to the behavior of the child themselves (e.g., “You’re such a good girl”) and others (e.g., “He’s a kind boy, isn’t he?”; see Zosuls et al. 2009). This gender categorization has been found to be associated with increased gender-typed behavior and is suggested to demonstrate self-socialization as children become aware of their sense of “self” and incorporate gender into their identity, seeking out related knowledge and guidance on how to behave accordingly (Zosuls et al. 2009). Around the age of 2–3, basic stereotypes involving frames of coordination (e.g., “boys are tough”) emerge, with more hierarchical stereotypes developing around the age of 8 years (e.g., “being tough and strong is a part of masculinity”; see Martin and Ruble 2010). This development in gender categorizing and gender-typing parallels the developmental trajectory of AARR with deictic (e.g., McHugh et al. 2004) and hierarchical (see Budziszewska et al. 2022 for a review) relational behavior, for example, improving from early to middle childhood. Furthermore, there is a body of research that supports the importance of deictic relations for an individual’s sense of self (McHugh et al. 2019) and conceptualization of others (Stiles and Atkins 2018). These developmental patterns point to the possibility of early intervention as significant individuals in a child’s life (e.g., caregivers, educators) might create contexts (from birth) that support more flexible gender relations.

Additionally, from an RFT perspective, gender relational networks interact with relational networks relevant to other social categories or identities (e.g., race, ethnicity, class, ability, sexuality, etc.) to transform the social functions of an individual (ourselves and others) in line with these combined networks under the control of particular contextual cues. That is, the way words function when we talk about and respond to ourselves (i.e., repertoires of “selfing”—relating ourselves to others and our own experiences; McHugh et al. 2019) and others is influenced by many aspects of our context (not just gender-related stimuli). Intersectional theory (Crenshaw 1989) highlights how social categories or identities (such as race, ethnicity, class, age, ability, sexuality, etc.) rarely, if ever, operate in isolation, and can change over time and across contexts, which finds parallels in radical behaviorism (DeFelice and Diller 2019). We must, therefore, always be considering the wider context and intersectionality when discussing gender-related issues. As just one example, the relation between agency and masculinity may be stronger among European Americans compared to African Americans (see O’Brien et al. 2015), and this difference can only be understood by looking at broader layers of context, including the consideration of historical factors and systems of power and oppression in the US. “The history and function of words matters a great deal when considering issues of DEI [Diversity, Equity,

and Inclusion]. Words create a “psychological present” that organizes [human] behavior in powerful ways—ways that can either promote or reduce suffering.” (Ming et al. 2023, p. 282).

RFT can help us understand the phenomenon of social categorization, as well as how categorization is involved in prejudice, stigma, bias, and “othering” (Lillis and Levin 2014). For example, the term “woman” has been related to fragility, submission, and purity but most often in reference to White women. When cues for “Black” are present, the functions of “woman” are transformed: Black women are related to qualities such as impurity, “sass” and strength, in line with common gendered racial stereotypes (e.g., Collins 2000). Further, who is doing the relating and in what context matters: “Black woman” will function differently for Black and White men or women depending on the context. Social class can also transform the social functions of an individual. For example, working-class women are more likely to be perceived as sexually promiscuous or labeled as “sluts” as opposed to being seen as pure (see Andersen 2006).

Additionally, even in matters that affect women in general, such as objectification, Black women are more objectified than White women, and in a more insidious way, from an earlier age. Portrayals of Black women in pornography, for example, echo their historical enslavement, with a high prevalence of bondage and submission to aggressive acts depicted as well as other dehumanizing acts (Collins 2000). As another example, Black men are more likely to be labeled as “aggressive” by healthcare professionals and are more highly medicated than White patients. They are also four times more likely to be diagnosed with schizophrenia than White patients, while being underdiagnosed with post-traumatic stress disorder and mood disorders (e.g., Gara et al. 2019). The experience of Black people differs across genders, in addition to their experiences differing from those of White people, as racial relations combine with gendered relations to provide additional contextual cues over relevant behaviors (see, for example, Settles et al. 2008; Settles 2006). Thus again, we must consider broader layers of context, including current and historical systems of power and cultural factors that influence and interact with gender.

Stereotypes and biases (including implicit bias; De Houwer 2019) result from the same repertoires of arbitrarily applicable derived relational responding. Early research modeling these forms of social thinking using stimulus equivalence<sup>1</sup> paradigms demonstrated that social categorization and stereotypes can influence responding towards a stimulus based on its relationship to other “socially loaded stimuli” as opposed to direct reinforcement (Watt et al. 1991). For example, Moxon et al. (1993) used a Matching to Sample (MTS) procedure in Northern Ireland to train participants to match stereotypically masculine occupations to nonsense syllables which were then matched to typical feminine names. For example, Builder = PUK = Suzanne. Based on this training (direct reinforcement), participants should have been able to match the feminine name to the masculine-typed occupation (e.g., Suzanne = Builder), forming an equivalence relation between these stimuli. However, when presented with comparison stimuli to choose between, many participants, particularly men, failed to form equivalence relations. Instead, they often chose to match the feminine name with a novel stimulus which was a stereotypically feminine occupation (e.g., Suzanne = Nurse). This relation had not been reinforced within the experimental setting but aligned with pre-established gender stereotypes within participants’ socio-verbal community. Moxon et al. (1993) suggested that this may represent evidence of the strength of control that stereotypic relations can exert over behavior. The finding that men particularly struggled to form these counter-stereotypical equivalence relations may also align with findings from the social-psychological literature that men are more likely to hold gender-stereotypical views (e.g., Brewster and Padavic 2000).

Though other early studies similarly demonstrated the utility of an RFT-based understanding of attitudes, bias, and stereotypes (e.g., Roche et al. 1997; Weinstein et al. 2008) there has been less contemporary pursuit of this program of basic research (with some notable exceptions, however, as we shall discuss later). These studies are important as they demonstrate how gender roles and stereotypes are socially mediated, relational behavior.

Crucially, these relations can form even if individuals do not have direct experience with the relevant stimuli as the contextual control over verbal relations can itself be verbal. Once relational networks are established, people can experience stereotyping, bias and stigma in any context where languaging exists, including with respect to themselves and their own identity groups (Masuda 2014). Further, this process of derived relational responding and subsequent transformation of stimulus functions is ongoing: words will continue to acquire various functions or meaning that either support or hinder DEI.

#### 4. Gender Terms as Sources of Contextual Control

Early research by Kohlenberg et al. (1991) in the US explored how gender terms themselves provide context for our behavior, including further languaging (or deriving) with respect to ourselves and others. The authors highlighted the practical implications of this work in terms of stereotyping and gender-biased behavior by considering the statement “X complained and complained”. When X is substituted by the word “woman” then “complain” may be related to words like “nag”, whereas when X is instead the word “man” then “complain” may be related to assertiveness in line with cultural gender stereotypes (e.g., Caprino 2017; Heilman 2012; Peus et al. 2015). Gender terms, thus, transform the function of various other words and events through the process of arbitrarily applicable derived relational responding, such that they evoke different behaviors, depending on the learning history of the speaker or listener with respect to those words and events. This aligns with social-psychological literature suggesting that gender stereotypes influence how we interpret and remember information (e.g., Dijksterhuis and Van Knippenberg 1995). Not only do equivalence/co-ordination relations form between gender terms and certain interests, roles, attributes, etc. (e.g., “Woman = emotional”) but frames of opposition are also reinforced (e.g., “Women = emotional”, “Men ≠ emotional”, etc.). Hierarchical, comparative, and deictic frames also emerge: individuals may view themselves or others as inferior or superior depending on how they frame themselves with respect to gender and relational rules around what is valued or acceptable in terms of how one looks, sounds, behaves, etc., within the dominant culture.

Using an RFT-derived measure of implicit relational responding, namely the Implicit Relational Assessment Procedure (IRAP; Barnes-Holmes et al. 2010), Cartwright et al. (2017) explored binary gender beliefs involving frames of coordination and opposition in an Irish context. The IRAP requires participants to respond quickly and accurately to the relation between label (e.g., women) and target stimuli (e.g., decisive) using the given response options (e.g., true or false) in line with predetermined rules. In some blocks the rule for responding will align with hypothesized pre-existing relational beliefs, while in the remaining blocks the rule will be inconsistent with these beliefs. The response latency differential between these blocks is used to infer a person’s implicit bias towards the stimuli influenced by historic and current contextual variables (Barnes-Holmes et al. 2010). In this way, the IRAP captures participants’ brief and immediate relational responding, which may involve high levels of coherence (i.e., overlapping with other patterns of relational responding in one’s repertoire) and lower levels of complexity, flexibility, and derivation (i.e., highly practiced responses) compared to explicit/self-report responses that are not collected under time pressure (Barnes-Holmes et al. 2017).

Cartwright et al. (2017) found that the label “men” was related to “masculine” traits such as “decisive” and the label “women” was related to “feminine” traits such as “nurturing”, but the label “men” was not related to “feminine” traits and the label “women” was not related to “masculine” traits. Participants responded quicker with “False” as opposed to “True” when these stimuli were presented together. Men also demonstrated stronger gender-binary-consistent biases than women. Again, these findings make sense given the broader context of Irish history, culture, and societal norms. Similarly, another behavior-analytic measure of verbal relations called the Function Acquisition Speed Test or FAST (O’Reilly et al. 2012) found evidence of binary relational responding (Cartwright et al. 2016).

Stronger gender bias among men echoes the earlier findings of [Moxon et al. \(1993\)](#) and coheres with the notion that masculinity may be more rigid as a social construct (at least in some cultures), with more severe punishment or aversive consequences for boys engaging in gender-atypical behavior (e.g., [Diekman and Eagly 2000](#); see [Cartwright et al. 2017](#)). A further study using the IRAP by [Rabelo et al. \(2014\)](#) in Brazil also found patterns of responding among children that seemed to reflect the differential consequences experienced by boys versus girls in relation to gender-typed play. Here, while there was not a gender bias in responding towards cars, dolls were significantly related with girls and not with boys among children aged 7–10 years old. This may reflect the social pressure (i.e., rigid gender-based rules) boys and girls experience in terms of conforming to gender stereotypes, such as in their choice of play activities (e.g., [Egan and Perry 2001](#)), and the differential consequences they may face when they “challenge” social norms around gender. Indeed, research shows that there is less acceptance of boys engaging in stereotypically “feminine” behaviors and that they may be punished more severely for this behavior (e.g., [Yu et al. 2017](#)). Gender stereotypes and bias (i.e., languaging around gender) can, thus, affect groups and individuals differently depending on the situation, affording advantages or privileges (flexibility) in some (or even many) contexts, while oppressing or restricting repertoires in others. This is particularly true when we take an intersectional lens: individuals or groups can be both oppressed and privileged, depending on their membership in particular groups or intersecting identities across contexts.

As [Cartwright et al. \(2017\)](#) note, the binary, oppositional framing of gender demonstrated by the IRAP can contribute to gender inequity. Men and “masculinity” are often coordinated with traits assigned a higher social value such as agency. If “femininity” is perceived as opposite to “masculinity”, then women may be perceived as less or not agentic. This can impact important life choices and how people are evaluated for social roles. We may derive, for example, that if men are agentic and so are scientists then science is for men and not women, since men and women participate in a frame of opposition (see, for example, [Carli et al. 2016](#)), thus transforming the functions of science-related stimuli such that they evoke gender-biased behavior. Subsequent research by [Farrell and McHugh \(2020\)](#) in Ireland using the IRAP has found some evidence of a relation between implicit Men-STEM (Science, Technology, Engineering and Math) bias and men being more frequently selected as the better performer on STEM-related tasks, reflecting behavior found in other studies (e.g., [Reuben et al. 2014](#)). Oppositional relations can serve to magnify differences between men and women, though there is substantial similarity between genders and substantial variability within gender categories ([Hyde 2014](#)). An oppositional binary framing also contributes to rigid gender relations that do not accommodate gender-diverse identities that may shift between concepts of masculinity and femininity or expand beyond these concepts (e.g., non-binary identities).

## 5. An RFT Account of Gender and Rule-Governed Behavior

[Hayes et al. \(2001\)](#) highlight the important role of rules and rule-governed behavior (RGB) in the formation and maintenance of conceptualized groups such as gender. Once language develops, rules can be generated by others or derived by oneself (sometimes we are our own listener!), and RGB has a pervasive influence on human behavior. From an RFT perspective, rules are verbal stimuli that both specify contingencies and transform the function of other stimuli and events ([Kissi et al. 2017](#)). Thus, they influence or organize the listener’s behavior in specific ways and evoke responding to multiple stimulus relations in certain ways ([O’Hora et al. 2004](#)). For example, in 1992, Teen Talk Barbie<sup>®</sup>, was released with a voice box that generated several phrases including, “Math class is tough”. Though the statement did not explicitly mention gender, controversy erupted with concerns from organizations (e.g., National Council of Teachers of Mathematics and American Association of University Women) viewing the message as perpetuating gender stereotypes ([McClary 2004](#)). From an RFT perspective, we can see how this rule “math class is tough” on its own (without the added Barbie context) could alter the probability that a



child will respond in certain ways with respect to math (e.g., giving up when presented with a challenging math problem in class, experiencing stimuli related to math class as aversive, etc.). Further, given the added context of Barbie, other potentially problematic rules may be derived with respect to gender. Barbie participates in a broad network of relations related to femininity and women/girls (specifically White Westernized ideals). Barbie (and everything related to Barbie) is now placed in relation to math and difficulty. Rules such as, “Math is tough for girls” or “Math is not for girls” and, ultimately, “I am a girl and therefore math isn’t for me” might be derived and reinforced, particularly given gender disparities in STEM careers (UNESCO 2023), with few women represented as mathematicians (then and now; e.g., Castaneda et al. 2019; Mendick et al. 2008). Ultimately, this phrase was removed from Barbie’s phrase bank following widespread push-back (The Associated Press 1992). However, gender-based rules are powerful, and biased rules about gender and abilities persist (e.g., Cimpian et al. 2016; Robinson-Cimpian et al. 2014) despite evidence that women and girls perform better at every level and every age group, from primary through secondary school, to university admissions and degree classifications in most middle- to high-income countries (Adams 2021; Reardon et al. 2019). As Professor Shelly Correll at Stanford University suggests: “Boys do not pursue mathematical activities at a higher rate than girls because they are better at mathematics. They do so, at least in part, because they think they are better” (American Association of University Women n.d.).

RGB does have several advantages over contingency-shaped behavior. For example, if a gender-diverse person is told by a friend that a university they were interested in is not gender-inclusive, they may decide they cannot study there without having to directly experience potentially hostile and prejudiced behavior as a student. However, RGB can also create problems. RGB is much less sensitive to and can even override or undermine environmental contingencies, resulting in rigid, inflexible patterns of behavior (e.g., see Kissi et al. 2020 for a review). For example, women across ages, cultures, races, ethnicities, and so on, continue to pursue or wrestle against unobtainable or harmful beauty standards (explicit and derived), regardless of the cost to women’s health and wellbeing, financial situation, etc. Following or rejecting a rule is influenced by a number of variables (Ming et al. 2023):

1. The rule must be understood (i.e., the listener must have the requisite repertoires of relational framing);
2. The process of transformation of functions will influence how and in what context stimuli will function as rules (i.e., whether the rule is followed or not);
3. Many environmental variables determine the likelihood of following a rule, including the listener’s history of rule-following, features of the rule itself, the source of the rule, and other elements of the current context.

In the case of rules around beauty standards, we can actively observe in the world around us how complex, variable, and persistent rule-following is across different contexts (including over time).

Gender stereotypes and beliefs may be viewed as types of rules and subsequent behaviors associated with those rules considered RGB. Additionally, gender-based rules will also interact in unique ways with rules related to other social identities, such as race/ethnicity, sexuality, and class. These rules specify or imply which behaviors will contact appetitive<sup>2</sup> consequences (e.g., gain social approval or privileges), and avoid aversive consequences. For example, the “strong Black woman” identity or “superwoman schema” prevalent among African American women, and socialized early in life, implies that Black women who appear physically and emotionally strong and self-sacrificing will be rewarded and valued in certain contexts (Allen et al. 2019). Following some of the rules implicit in this stereotyped identity (e.g., giving an impression of strength) has been found to buffer against the detrimental health effects associated with chronic racial discrimination. However, following other rules related to this stereotype (e.g., following the expectation or obligation to help others or put others first) may exacerbate the harmful health effects of racial discrimination (Allen et al. 2019).

Gender rules contribute to gendered cultural practices where new individuals in a culture are shaped and instructed by those already involved in the practice (Glenn 1988). RGB aligns with the social–psychological literature highlighting the prescriptive and proscriptive nature of gender stereotypes (Prentice and Carranza 2002), detailing what people should or should not do depending on their gender. People who violate gender norms or rules, thus, often experience aversive consequences, including personal and professional penalties (Rudman et al. 2012). Even more broadly, people are expected to conform to binary gender rules in terms of their gender identity and expression and face prejudice and discrimination when they do not (e.g., Broussard and Warner 2019). These rules can have serious consequences for people who identify as transgender, gender fluid or non-binary.

The punishment of gender-atypical behavior will reduce the likelihood of particular responses in certain contexts. Behavior that is reinforced persists, and gender-typical behavior is often reinforced (as evidenced by its prevalence and dominance across cultures and groups), which strengthens cultural stereotypes and provides fewer counter-stereotypical role models. For example, if a woman derives the rule that certain behavior is inappropriate for women (e.g., being assertive) based on socially mediated contingencies (e.g., media representations, peer and family groups' behavior, etc.), and she has a history of reinforcement for conforming to other rules regarding “being a woman” (in addition to identifying as a woman), she is likely to follow the rule (because similar rules have been “right”/reinforcing in the past), even without witnessing or hearing about other women contacting aversive consequences (like harassment or exclusion) for engaging in those “inappropriate” behaviors. Stimuli that previously functioned as cues for behaving in certain ways (e.g., behaving assertively) may now function as cues for other forms of “gender appropriate” behavior (e.g., staying silent, apologizing, seeking reassurance). Any aversive consequences she may come into contact with for following the rule are overridden by the reinforcement derived from rule-following and behaving “as a woman should/as women do”, which might also contribute to patterns of internalized or self-oppression (e.g., see Phutela 2022). Thus, people can continue to follow rules, including those that assume gender is fixed or innate (“this is just the way women/men are”), maintaining the status quo, regardless of what evidence there is to the contrary (in terms of the fluid and socially constructed nature of gender), or when doing so has detrimental effects for the individual or others and other ways of behaving may be more useful.

Gender rules which signal the punishment of gender-atypical behavior clearly present serious challenges for transgender and gender-nonconforming individuals. For example, gender-nonconforming and transgender individuals may be perceived as less likable and threatening to the status quo upheld by the boundaries of gender-binary beliefs, which has been related to higher anti-transgender prejudice, gender-essentialist beliefs, and traditional gender-role beliefs (Broussard and Warner 2019). Moss-Racusin and Rabasco (2018) found that transgender job applicants were rated as less likable and less hireable than identical cisgender job applicants. Gender-nonconforming transgender people also experience greater discrimination than gender-conforming transgender people (e.g., Miller and Grollman 2015). The higher level of discrimination and violence experienced by gender-nonconforming and transgender people is related to increased mental health challenges and health-harming behaviors such as attempted suicide, drug/alcohol abuse, and smoking (Miller and Grollman 2015; Valentine and Shepherd 2018).

Queer families also experience high levels of discrimination and stigma related to their challenging of gendered, heteronormative rules or cultural expectations (e.g., Hicks 2013; Novotny and Angaran 2020) related to families consisting of a female mother and a male father who perform gendered roles or functions within the family (e.g., father = breadwinner, mother = caregiver). For example, gay men may be viewed as inadequate caregivers on the basis of their gender (see Hicks 2013), while butch-identifying lesbians face stigma for not appearing feminine enough for motherhood (Epstein 2002). Queer same-gendered couples also face frequent questions reflecting expected gendered parenting roles, such as, “Who’s the man/woman in the relationship?” or “Who wears the trousers?”. How-

ever, Queer relationships (and in general, any relationships that challenge prescribed gender roles and expressions) also provide an opportunity for “degendering parenting” (e.g., [Schacher et al. 2005](#); [Ó Súilleabháin 2017](#)). Simply by existing, such relationships are evidence that caregiver roles and expectations are not “biologically determined” nor automatically delineated into binary gender roles (e.g., [Patterson et al. 2004](#)). Nevertheless, this flexibility can be constrained by the broader social context, which continues to reinforce gender conforming and heteronormative rules on relationships and families, contributing to continued patterns of gendered parenting defined by masculinity/femininity ([Hicks 2013](#)).

There are many other examples of how rules involving gender relations can transform the functions of a multitude of stimuli or events. For example, patterns of relations that constitute women’s gender roles (predominantly communal) and patterns of relations regarding leadership roles (predominantly agentic) are traditionally perceived as relatively incompatible or incoherent with one another. As a result of this, women leaders are less readily related to competency, and leadership positions are seen as less suitable for women, who may then find it more difficult to be promoted into leadership positions (e.g., [Rudman and Phelan 2008](#); [Eagly and Karau 2002](#)). Related to these gender-role relations or rules, it is suggested that men must be perceived as giving priority to agentic roles (e.g., career opportunities) and women must be perceived as giving priority to communal roles (e.g., caregiving) to avoid facing backlash and eliciting negative reactions from others ([Haines and Stroessner 2019](#)). Interestingly, the expectation that women should be communal may contribute towards findings that girls report higher levels of generalized pliance in certain cultural contexts (see [Stapleton et al. 2022](#)). Pliance is a pattern of RGB established through a history of socially mediated reinforcement for following rules. Pliance is more highly associated with contingency-insensitivity than other kinds of rule-following and may be implicated in many problems related to narrow, inflexible repertoires of behavior.

As a final example, exposure to rules such as “big boys don’t cry” may transform the functions of emotional expression such that emotional suppression becomes seen as “masculine” and desirable. Indeed, within the social–psychological literature, we see that vulnerability is stereotypically associated with and tolerated in women but strongly proscribed for men ([Prentice and Carranza 2002](#)). So, again, the same events can function differently for different individuals and groups given their exposure to and participation in different social contingencies ([Ruiz 2003](#)). Given the vast impact of gender relations and rules, it is, therefore, important to determine what contextual factors best influence relational responding and create environments that support flexible, supportive relational repertoires that promote thriving across contexts and genders.

## 6. Influencing Arbitrarily Applicable Relational Responding

The suggestion that gender terms and rules exert contextual control over behavior has implications for how we try to influence gender relations and stereotypes. [Kohlenberg et al. \(1991\)](#) suggest that we need to better understand how to disrupt existing equivalence relations or alter the contextual control over a person’s verbal relations to influence stereotypes (existing rigid, gender-based rules) and subsequent problematic patterns of behavior (rule-following). While a basic research program in this vein concerned with gender bias has not yet been explored, research by [Mizael and colleagues in Brazil \(Mizael et al. 2016, 2021; Mizael 2019\)](#) investigated ways to potentially disrupt existing socially relevant equivalence relations with respect to other forms of bias. [Mizael et al. \(2016\)](#) conducted translational research aimed at reducing racial bias in children. They recruited 13 children aged 8 to 10 years who demonstrated racial bias, usually in the form of relating faces of Black people with negative attributes (screening phase). The training included three literature-based parameters aimed at increasing the probability of equivalence-class formation between stimuli (for further detail see [Mizael et al. 2016](#)). Using this amended MTS paradigm, the children were trained to match positive and negative symbols to other separate abstract symbols. The abstract symbol previously trained to be related to a positive symbol was then trained to be related to Black faces while the other symbol was related to another abstract

symbol. After training (with feedback on responses) and testing these relations, children were assessed for equivalence relations between the positive symbol and the Black face and assessed via self-report to determine if they would now relate Black faces to positive attributes or negative attributes (as they had in the screening phase).

Contrary to previous research that attempted to establish stimulus equivalence with socially loaded stimuli (e.g., [Watt et al. 1991](#)), all participants acquired the targeted equivalence classes; that is, participants selected the positive attribute given a Black face, and vice versa ([Mizael et al. 2016](#)). A self-report measure demonstrated that pleasure levels elicited by Black faces increased and decreased for White faces, such that there was no longer a statistically significant difference between the faces' evaluation as there had been before training and testing. The procedural differences between [Mizael et al. \(2016\)](#) and previous similar studies targeting bias and prejudice (e.g., [de Carvalho and de Rose 2014](#); [Dixon et al. 2006](#); [Moxon et al. 1993](#)) may, at least in part, be responsible for the high number of participants that formed the equivalence relations despite their initial bias. This hypothesis is strengthened by the results of [Mizael et al. \(2021\)](#), which compared three groups each exposed to one of the three parameters thought to be important for stimulus equivalence to a control group that experienced a basic training procedure. The results showed that fewer children in the control group formed the racial equivalence classes and demonstrated less-pronounced bias reduction on the self-report measure.

Another important endeavor, apart from discovering how to disrupt equivalence relations, is to determine whether the newly formed relations remain beyond the initial training sessions. [Mizael \(2019\)](#) (Study 1) and [Mizael et al. \(2021\)](#) checked for maintenance of the established racial equivalence relations six weeks after participants were tested. Both studies showed that most children maintained the targeted equivalence relations. Although it is improbable that a brief training would completely override pre-experimental socially established relations involved in prejudice and bias, these studies by [Mizael et al.](#) present important findings that might inform future "anti-prejudice packages" aimed at reducing several types of bias, particularly early in children's development. The utility of this approach with an adult population requires further investigation ([Mizael et al. 2016](#)). While the aforementioned studies investigated race and not gender issues, it is likely that the behavioral processes underlying these types of prejudices are the same (or similar); that is, we could adapt the same procedures for use with gender relations.

Other research influenced by RFT has explored the malleability of gender relations (i.e., patterns of relational responding) measured implicitly and explicitly in relation to gender-STEM bias. Research in an Irish context using the IRAP has demonstrated that people hold strong pro-Men-STEM relations (responding quicker with "True" than "False" to relations such as "Men more suited to Science"; [Farrell et al. 2015](#); [Farrell and McHugh 2017](#)), supporting previous findings with other measures of implicit responding (e.g., [Smyth and Nosek 2015](#)). Explicit measures also indicated a Men-STEM/Women-Arts bias among participants. The IRAP provides information at the level of each relation targeted in the task and, so, was able to further reveal that participants also appeared to express a weak pro-Women-STEM implicit relation, which was statistically significant only among women studying STEM subjects ([Farrell and McHugh 2017](#); [Farrell and McHugh 2020](#)). This finding of a pro-Women-STEM relation among women in STEM was also recently supported by an IRAP study by [Moreira et al. \(2021\)](#) with a Brazilian sample. Though there were several procedural differences (e.g., different groupings of comparison subjects and label words), it is interesting to observe the partial support across cultural contexts of these relational patterns. The demonstration of this weak positive relation between women and STEM, among men in STEM, and men and women in non-STEM groups, appeared promising as elaborating an existing verbal network should be easier than establishing a new conflicting network ([Hayes et al. 2001](#); [Ming et al. 2023](#)) and may introduce greater flexibility in relational responding towards gender and STEM.

A study by [Farrell et al. \(2020\)](#) aimed to expose participants to contexts that supported strengthening this positive relation between women and STEM using three brief interven-



tions influenced by those commonly used in the social–psychological literature. These included exposure to counter-stereotypical exemplars, i.e., competent female scientists, psychoeducation about implicit bias and gender-STEM bias, and perspective-taking about a day in the life of a female scientist. Exemplars and psychoeducation were hypothesized to strengthen relations of coordination between women and competency and success in STEM and make particular patterns of desirable transformation of functions in line with these relations more likely—framing women and men as equally capable in STEM fields. Perspective-taking, on the other hand, involves both seeing yourself “in context” and “seeing” the world through the eyes of another (Todd et al. 2011). Repertoires of perspective-taking (including empathy and compassion) have been shown to be important in understanding and influencing prejudice, stigma, and bias (see Krafft et al. 2018; Masuda et al. 2012 for reviews) and may reduce some of the relations of opposition and distinction that may exist between groups (Edwards et al. 2017). It was hypothesized that providing individuals with further opportunities to derive a positive relation between women and STEM through each of the interventions might strengthen that relation (reflected on the IRAP as faster and more accurate pro-Women-STEM responding), increasing its likelihood of being emitted as a response (see Barnes-Holmes et al. 2010; Barnes-Holmes et al. 2017; Hughes et al. 2012) and perhaps increasing flexibility in relevant relational networks and providing context for less biased behavior.

Two hundred and ten adults (58.1% women) took part (Farrell et al. 2020). Implicit and explicit gender-STEM bias was assessed both immediately after the intervention and one day later. All the intervention groups exhibited a significant pro-Women-STEM response bias, with the exemplar and psychoeducation groups significantly differing from the control group. Additionally, all groups continued to exhibit a pro-Men-STEM response bias, which was positive as the aim of the interventions was not to lessen the belief that men are good at or suited to STEM subjects. The perspective-taking component had less of an impact, likely since participants simply wrote a general narrative about a day in the life of a female scientist, which may not have increased a positive relation between women and competency in STEM—a key component of gender-STEM bias. Additionally, as Farrell et al. (2020) did not assess participant perspective-taking skills or levels of empathy, participant deficits in these repertoires of relational responding may have impacted their performance or the effects of the perspective-taking component. Assessment and training of these repertoires may have enhanced this intervention or shed more light on its effectiveness. Indeed, other research has suggested that training in perspective-taking skills may positively influence prejudice and bias (e.g., Levin et al. 2016).

The next day (Time 2), it appeared that the effect of the interventions was generally maintained on the Women-STEM trial (Farrell et al. 2020). Unexpectedly, however, the control group exhibited a significant pro-Women-STEM response bias on the IRAP at Time 2. Greater rumination among this group or the experience of completing the IRAP may have influenced the control group’s responding, as participants may detect which relations they have more difficulty responding quickly to, for example, which may promote an increased awareness of their response biases (Farrell et al. 2020). It may be that a relation between women and STEM generally has a weaker relational history (i.e., a positive relation between women and STEM is less often derived), and that it is quite susceptible to current contextual factors, more so than established relations with a strong history of derivation and reinforcement. However, more research is required to parse out these explanations further (Farrell et al. 2020). Either way, an increase in bias awareness is unlikely to create lasting change in gender relations without further reinforcement. One brief intervention session is also unlikely to counter gender bias in the long-term, given the history of reinforcement of gender-biased relations. This is likely reflected in the finding that the interventions were less effective for explicit gender-STEM bias. These more elaborated relations may be quite resistant and require more consistent intervention, since participants readily admit to these gender biases and, therefore, felt justified in doing so. Further reinforcement within the wider socio-cultural environment is needed to support gender-inclusive behavior. This

study by [Farrell et al. \(2020\)](#) highlights contextual factors that may influence relational gender-STEM bias and support cultural change if implemented more widely, such as through positive depictions of women in STEM in the media.

It is important to consider that when addressing issues of gender bias, we may observe different relational patterns depending on the context under which responding occurred (e.g., under time pressure or not), and what this means in terms of its relation to other meaningful social behavior needs further exploration. We also need more longitudinal analyses akin to the maintenance checks completed by [Mizael \(2019\)](#) and [Mizael et al. \(2021\)](#) to better understand processes of change in relational responding—how soon do newly established or strengthened relations weaken and what does this mean for how we approach influencing more favorable or desirable patterns of relational responding within our culture more broadly? There have long been calls for such longitudinal analysis in the implicit-bias literature (e.g., [Lai et al. 2013](#)).

With its focus on targeting and expanding relational repertoires, RFT-informed interventions also potentially offer novel approaches to bias reduction that may be less prevalent in the broader non-behavior analytic literature. For example, [Levin et al. \(2016\)](#) suggest that empathy, perspective-taking and psychological inflexibility (rigid patterns of behavior in the presence of aversive private events, including thoughts and emotions) are important components to target in relation to the process of generalized prejudice. Interventions that address these components may, therefore, be a meaningful approach to gender and other social identity-related biases and discrimination. Acceptance and Commitment Therapy (ACT; [Hayes et al. 1999](#))-based interventions demonstrate some ways that this may be achieved.

ACT (considered a clinical application of RFT) views problematic patterns of behavior, including “psychopathology”, prejudice, bias, and so on, as involving problematic and inflexible patterns of responding to complex relational networks ([Dymond and Roche 2009](#)). ACT practitioners use language to target such problematic relational responding, altering how we relate to the cognitive processes (thoughts, feelings) underlying prejudice and bias rather than simply altering the form of existing biased relations. ACT-based interventions seek to foster psychological flexibility via acceptance, mindfulness, and values-based practices, including increasing the ability (for example) to respond flexibly in the presence of gender-biased rules and other stimuli that have previously evoked rigid and unhelpful patterns of behavior. For example, when a particular context cues a biased gender relation (e.g., “Women aren’t as smart as men”), this may elicit further relational responding (e.g., “That’s sexist” and “Sexism is bad”), which may evoke discomfort and/or negative feelings, particularly if the individual does not wish to relate to themselves as a “biased” or “bad” person (that is, the biased gender rule is incoherent with already-established rules or relations with respect to oneself). They may then avoid contexts that elicit biased responses, seek out contexts that reinforce their pre-existing biased beliefs, or act on their bias (despite potentially conflicting relations), narrowing their behavioral repertoire in relation to gender. ACT-informed interventions would go beyond exposing participants to anti-bias information (or psychoeducation) and train (potentially generalizable) response patterns that increase psychological flexibility even in the presence of bias cues or discomfort. ACT, thus, seeks to alter the function of biased thoughts or rules and uncomfortable emotions, such that individuals no longer avoid contexts that challenge their biases and elicit discomfort, instead choosing to behave in ways that align with values of equity and anti-bias. Additionally, individuals may be better equipped to engage in behaviors that counter gender rules (practicing more flexible responding around gender) despite possible aversive internal experiences, increasing their ability to engage in potentially more meaningful or effective behavior in a given context and contact more appetitive sources of contextual control.

Such ACT-informed interventions have had some success with reducing stigma towards those with mental health conditions ([Masuda et al. 2007](#)) and racial/ethnic prejudice ([Lillis and Hayes 2007](#)). In a recent study, [Davis et al. \(2021\)](#) found that a measure of perspective-taking predicted willingness to intervene to prevent gender-based

violence and to confront negative racial stereotypes. Acceptance- and mindfulness-based interventions that incorporate self-monitoring and performance feedback have also shown promise for reducing racist behaviors (Matsuda et al. 2020) and, thus, may hold promise for gender-based discrimination as well.

Finally, when implementing interventions to address complex social issues—even interventions we think might be effective—we need to be conscious of the relations brought to bear by contextual cues and how they may transform the functions of further relational behavior. For example, research has demonstrated how attitudes towards and support for gender-equity initiatives can be influenced by the way communications about these initiatives are framed—initiatives framed as providing benefits for men and women and as internally motivated by the value of gender diversity generated more positivity and support among STEM faculty (Farrell et al. 2021). Framing uses contextual cues to focus an individual's attention on salient aspects of an issue and can have an influence on subsequent attitudes towards that issue. If gender equity is only seen as “women's work” with no benefits for other gender groups, then there will be less engagement with STEM gender-equity initiatives, and it may be more difficult to implement necessary changes—particularly as many gatekeepers in senior leadership positions are men. Promoting more positive relations between opportunity, innovation and gender equity may influence subsequent relational behavior, such as how one chooses to evaluate and engage in equity initiatives (see Farrell et al. 2021).

There are numerous studies within the broader psychological literature that highlight the importance of considering language and contextual cues related to gender (see Formanowicz and Hansen 2022 for a relevant review). For example, Chestnut et al. (2021) demonstrated that when framing statements about children's ability, adults and children (aged 7–11) derived that the gender framed as the reference category (e.g., “Girls are as good as boys at X”—here boys are the reference category) had more natural ability even in novel, gender-neutral domains. The position of the gender term contained in the rule impacted the salience of the relations, with “as good as” functioning as a cue that the following gender group had superior ability that the other gender group had to work hard to catch up on. This effort to convey gender equality can, therefore, inadvertently establish and reinforce stereotypes or gender rules. When the statement was phrased as “Girls and boys are equally as good at X”, gender differences in ability were not inferred. Therefore, statements such as these without a reference group may more effectively communicate gender equity. Furthermore, Moty and Rhodes (2021) demonstrated how generic statements such as “Boys play football” can imply information about related social categories not mentioned when these statements are made by speakers perceived as knowledgeable (e.g., caregivers). From an RFT perspective, the statement “Boys play football” may coordinate all boys with football and that liking football is a part of being a boy/male. Given binary, oppositional gender relations, this may imply that girls do not play football, reinforcing social categorization and gender stereotypes. This tendency to infer further relational information emerged in children around four and a half years of age and increased with age (up to adulthood; Moty and Rhodes 2021), again paralleling development trajectories for AARR.

## 7. Call to Action

So far, we have outlined some of the existing research relevant to an RFT-based conceptualization of gender and expanded on some of the ways this may enhance our understanding of and approach to gender-related research. However, there remains much left to be explored and notable limitations to address. We, therefore, conclude by highlighting some (though certainly not all) of these important aspects for future research to take action on.

### 7.1. *Moving beyond Binary and Isolated Gender Categorization*

A key limitation in most of the current research and work discussed so far is the focus on the binary gender categories of men and women. This presents an incomplete understanding of gender that extends far beyond this binary framing in terms of identities and expression (see [Hyde et al. 2019](#)) and can only be understood in context. The experiences of non-binary, gender-expansive and transgender individuals continue to be an important avenue of exploration for RFT (and other) researchers. Additionally, we need to consider the framing of our research when comparing different gender identities—by focusing on differences, we may inadvertently contribute to an oppositional binary conceptualization of gender, as well as strengthening potential hierarchical relations or other relations that promote inequities and exclusion (e.g., one gender being superior or inferior to another). We need to actively expand the diversity of our samples, acknowledging where they are limited and considering how other relevant contextual factors may influence our findings.

Importantly, we must better consider the relationship between gender and other social identities and how their interaction can contribute to nuances in behavior across contexts. Often gender is considered in isolation in research, ignoring intersecting identities and broader layers of context. There continue to be calls to better utilize an intersectional lens (e.g., [Else-Quest and Hyde 2016](#)), and RFT may be uniquely placed to contribute to this endeavor with its contextual focus.

Considering these limitations in the literature, there is a need for more targeted recruitment in future research, such as stratified sampling. Intersecting factors should also be considered at the design stage. Related to this, inclusive representation on research teams, particularly of target populations, would better inform research in this space and serve to enrich our approaches and interpretations.

### 7.2. *Understanding Gender in the Context of Systems of Power and Privilege*

The covariance of gender terms as sources of contextual control with other functional patterns (or identities, such as race/ethnicity and class) can lead to differential experiences of power and privilege. [Baum \(2017\)](#) conceptualizes power as an aspect of a relationship, where power “concerns the degree of control each party exerts over the behavior of the other. When the parties benefit unequally from the relationship, the one who benefits more also has more power” (p. 201). Privilege may be conceptualized behaviorally as “a relative ratio of appetitive to aversive control governing an organism’s repertoire in a context” ([Sandoz et al. 2023](#), p. 63; see also [Louisiana Contextual Science Research Group 2022](#)). According to [Terry et al. \(2010\)](#), privilege and power are related, as privilege (i.e., differential access to important reinforcers and appetitive behavioral control) is assigned based on social-group membership and the power those social groups hold. Therefore, access to reinforcers may not be contingent on a person’s behavior. Any system of privilege is also created and maintained by systems of oppression centered around aversive control and coercion to constrain opportunities for contacting reinforcement, limiting choice and freedom. Both systems of oppression and privilege involve “inequitable and discriminatory practices, policies and power structures that disproportionately impact marginalized groups” ([Ming et al. 2023](#), p. 285).

The language processes highlighted by an RFT analysis are clearly relevant not only at the level of the self and individual, but also with respect to groups, systems, and culture. Language at all levels establishes and maintains systems of power, privilege, and oppression. For example, the most obvious gender-based system of power across many societies and cultures is what is commonly referred to as the “Patriarchy” ([Nash 2019](#)). When arbitrarily applicable relational responding concerning particular traits or roles considered “masculine or male” are highly reinforced, this contributes to the dominant patriarchal culture where masculinity is centered as the norm or viewed as favorable and rewarded. Other gender identities or expressions that do not fit this mold are devalued or even punished (see [Becker 1999](#)). A patriarchal culture continues to proliferate globally with men typically holding more power than women across most cultures ([Guterres 2020](#)).



When we say men, as a social group, hold power, we are saying that they hold “privilege”: they experience a high proportion of appetitive relative to aversive behavioral control in their environment (see [Sandoz et al. 2023](#)), with “unearned” or automatic access to resources and opportunities based on their membership in that group (i.e., their identity as a man). However, men can have more or less power and privilege, depending on their intersecting identities (e.g., race/ethnicity and class) and other contextual factors. When gendered relations are combined with or interact with other systems of oppression and privilege, such as those related to race/ethnicity, or other socio-economic and political systems (e.g., capitalism or neoliberalism), further inequities are reinforced. An investigation of gender would, therefore, benefit from an understanding and acknowledgement of how language related to gender and other identities contributes to and is influenced by systems of oppression, power, and privilege. RFT allows us to view individual and group identities (i.e., language) as context, as well as understanding our identities *in* context (at all levels). We can use this perspective to explore how relational networks involved in systems of power are established and reinforced in certain contexts, how these patterns of relational responding may shift and transform when interacting with other social identities (i.e., self-related patterns of relational responding), and how rigid or flexible they appear in a given context. This behavioral understanding might then highlight points of entry for intervention to reduce or counter the influence of problematic gendered relations. For example, if we can empirically identify contexts where gender and other socially relevant relations that reinforce the “Patriarchy” are a less salient source of influence over behavior, we may be better able to establish and reinforce contexts that support broader repertoires.

### 7.3. Considering Alternative Measures

We must also consider our measures. More work is needed to determine whether patterns of verbal relations captured on measures such as the IRAP and FAST predict meaningful social behavior—under what conditions do we find this link, when do we not, and why? There have been papers on this topic for similar measures such as the Implicit Association Test (e.g., [Kurdi et al. 2019](#)); however, these papers have not taken a behavioral stance in their analysis. The better we understand the relationship between socially relevant relational responses and subsequent overt behavior, the better able we become to predict and influence this relationship. We should also explore what other measures might be meaningful to supplement these tasks, as a multiple measurement approach may help protect against some of the extraneous noise in the data from a single measure (see [Lai et al. 2016](#)). More recently, for example, an extension of RFT known as Relational Density Theory ([Belisle and Dixon 2020](#)) has attempted to use a multidimensional scaling procedure to map the volume and strength/density of relational networks with implications for how resistant to change certain relational networks might be. A study by [Sickman et al. \(2023\)](#) examined how this approach may be applied to gender stereotyping, demonstrating how adjectives clustered along a binary gender dimension and positive and negative affective dimensions. Additionally, qualitative explorations of gendered verbal behavior could be a meaningful avenue. The Functional Self-Discrimination Measure ([Styles and Atkins 2018](#)), for example, has looked at self- and other-discrimination in language in line with an RFT approach to the self, which could perhaps have utility for gendered experiences if adapted. It could be used, for example, to explore patterns of relational responding and repertoires of “selfing” involved in self-reported experiences of gender identity.

### 7.4. Developing Behavioral Accounts of Gendered Relational Networks

While we have attempted to extend RFT to gender in terms of RGB and the transformation of stimulus functions, we acknowledge the overall lack of supporting empirical studies to date. We need more research examining the emergence and influence of gendered relational networks in different contexts. How has our interaction with and exposure to our social world (all the layers of context) influenced or arranged these gender relations? How

do various relations transform the function of other stimuli and events? And how do these processes operate or influence behavior at different levels? We see some of this reflected in the IRAP and MTS work discussed but more work is needed with a conscious focus on providing behavior-analytic conceptualizations of gendered behavior informed by RFT. For example, it would be interesting to further explore contingencies relevant to gendered power dynamics and how these relate to the social value attached to certain gendered characteristics. This work is starting to come to the fore, particularly from behavior analytic researchers in Brazil (e.g., Couto 2019; Nicolodi and Hunziker 2021) and the US (Louisiana Contextual Science Research Group 2021, 2022).

### 7.5. Addressing Gender Bias and Discrimination

This greater understanding of the relations involved in gendered behavior at various levels (from self to systems and culture) will also help us to understand how best to influence and address gender bias and discrimination. There is a real need for empirically based and theoretically driven interventions that effectively foster greater gender equity (see Devine and Ash 2022). The work of Mizael et al. (2016, 2021) and Mizael (2019) demonstrates how basic behavioral procedures may be used to reduce bias. Further research is required to explore how effective this approach is with gender relations and to determine how adults may respond, given their longer history of pre-established relational responding. It is also important to explore whether these findings generalize beyond the lab setting and impact on meaningful social behavior—will newly established relational responses provide context for new behaviors? When might they exert stronger contextual control over behavior than previous prejudiced relations or rules? Will this anti-bias behavior contact reinforcement in the world beyond the lab and generalize to other stimuli and events to have a broader impact on prejudiced behavior? These are all important questions in need of empirical answers.

The work of Farrell et al. (2020) also calls attention to the importance of understanding which relations are most relevant to the discriminatory behavior being targeted. Like most research to date, this research focused on relational responding and important contextual factors at the individual level; however, we need to scale up these interventions to effect long-term, wide-spread change. To carry this out, we might examine interventions targeting messaging in education and representations of gender in media and advertising, for example. That being said, it is also important to remember that groups are made up of individuals behaving, so work at the individual level can and will have an influence at other levels, (and vice versa). Individuals (interacting with other individuals) create, maintain, and shift culture, just as culture shapes and maintains individual behavior. If all of us take steps in our personal and professional lives to create a world that supports gender equity and freedom, change is possible.

When exploring interventions, we also need to move beyond just measuring beliefs and stereotypes and examine and develop ways of measuring relevant behavioral repertoires across relevant contexts. As discussed throughout this paper, we cannot understand gender or gendered behavior when it is removed from the context it exists within—both current and historical. We need a more in-depth understanding of how gender bias (i.e., patterns of relational responding, rule-deriving, rule-following, etc.) emerges and impacts different people and groups in different contexts.

As we have discussed, ACT-informed interventions may present relatively novel opportunities to influence how existing relational networks function and provide context for expanding more flexible relational repertoires by increasing psychological flexibility. From a behavior analytic (and thus RFT) perspective, we cannot “un-do” or “un-learn” established relational patterns but we can establish and reinforce new behaviors and expand relational networks such that they “compete” with old learning, thus increasing flexibility in responding. Being less “gender biased” might start with accepting and being aware of one’s learning history (e.g., noticing rules and ways they influence one’s behavior) and working towards being “anti-biased” as opposed to “not biased” (acknowledging that we

will never “arrive” at being “not biased”) and committing to taking action and learning new ways of languaging about gender that support flexibility and desired change with respect to values of DEI.

Levin et al. (2016) note that these kinds of interventions will need important adaptations, however, to effectively influence prejudice among those who are unaware of or unmotivated to change their prejudiced attitudes and behaviors. We need to carefully consider how we might reach populations who do not consciously hold values of gender equity or even those who actively oppose them. While not explicitly an RFT-based intervention, a small randomized controlled trial presented by Broockman and Kalla (2016) suggests that targeting deictic reframing (i.e., active perspective-taking) might be effective in influencing prejudice in such populations. They found that a focused door-to-door canvassing intervention in South Florida resulted in significant reductions in anti-transgender prejudice, increased acceptance of transgender people, and increased support for nondiscrimination law. Further, these changes were maintained over time (3 months post-intervention). More research on RFT- and ACT-informed interventions in relation to gender (and how gender intersects with other identities and systems of privilege) would be of interest, particularly given how embedded gender and gender categorization are across all levels of our lives. In order to develop interventions that support more flexible repertoires in relation to gender identity and expression, we need to incorporate more gender-diverse samples and consider how other intersecting identities impact gender-related behavior.

#### 7.6. Promoting Gender-Affirming Experiences

A small amount of recent work within behavior analysis has examined other practices that might promote more flexible, affirming experiences of gender. For example, Leland and Stockwell (2019) developed a self-assessment tool for cultivating affirming practices with transgender and gender-nonconforming (TGNC) clients, supervisees, students, and colleagues. In another example, Petronelli and Ferguson (2022) examined the positive impact of behavioral self-monitoring on the correct use of pronouns in the workplace. The correct use of personal pronouns is one potential method for establishing a more nurturing, gender-inclusive environment.

Clinical interventions, rooted in RFT, such as ACT may also offer potential avenues of support for TGNC individuals. Gender-affirming practices are strategies or actions that foster access to resources or reinforcers at similar rates to cisgender individuals, while maximizing choice under appetitive control, and minimizing coercive contingencies (Leland and Stockwell 2019). As a transdiagnostic, flexible, principles-based therapeutic framework, ACT has been shown to promote wellbeing and resilience across a diverse range of populations and issues (see Association for Contextual Behavioral Science 2023). ACT might be well-positioned to address the unique challenges and needs of TGNC individuals by increasing psychological flexibility (Skinta and Curtin 2016). For example, psychological flexibility has been shown to buffer against minority stress (Weeks et al. 2020), be related to lower internalized trans-negativity (Igarashi et al. 2022) and appears to moderate the relationship between life satisfaction and internalized transphobia and identity disclosure among TGNC individuals (e.g., Flynn and Bhambhani 2021). Additionally, psychological inflexibility appears to mediate the relationships between gender discrimination and depression, anxiety, and stress for TGNC individuals (Lloyd et al. 2019). However, although emerging evidence is promising with respect to ACT and the role of psychological flexibility in promoting positive experiences of gender, research is sparse, and methodological weaknesses limit findings and conclusions (Fowler et al. 2022). It is important for researchers to add to this literature, addressing these limitations and increasing our understanding of how ACT and psychological flexibility can support gender-affirming experiences—for whom is it most beneficial and in what contexts?

More flexible relational responding towards gender might increase opportunities for people to experience “gender pleasure”. Though less prevalent in the academic literature, *gender pleasure* is suggested as an extension to the term “gender euphoria”, which

comes from the LGBTQ+ community (Beischel et al. 2022). Gender euphoria has various definitions, though it can be understood as a feeling of joy and affirmation of one's own gender involving physical, psychological, and social components. Beischel et al. (2022) suggest gender pleasure could encompass gender euphoria and other positive gendered experiences. Though it may be harder to identify gender pleasure for cisgender people, it is suggested that people across the gender spectrum may be encouraged to recognize positive gendered experiences, which present differently depending on a person's context. Gendered experiences do not have to be restrictive and oppressive, particularly when people are empowered to respond flexibly across contexts, including across the lifespan.

Through the lens of RFT, an understanding of gender as dynamic, context-dependent and influenced by social contingencies can empower us to explore our own relationship with gender more flexibly, to consider how gender relations interact with other important social contextual cues that impact on our experiences of self and others in both helpful and unhelpful ways. This may help us to consider how gender relations function in different contexts for ourselves and others (at all levels). Additionally, we might identify ways to intervene on issues related to gender equity, diversity, and inclusion, impacting on behavior at the group, system, or cultural level (and vice versa), facilitating a more flexible understanding of gender and related contingencies. At the root of any intervention will be language (specifically relational responding) that promotes psychological flexibility and undermines bias and prejudice (Levin et al. 2016). From an RFT perspective, our emphasis is on promoting flexibility, as opposed to establishing different but similarly rigid, black and white rules around gender: flexing our rules (and deriving new ones) when and where it is safe and useful to do so.

## 8. Conclusions

RFT is a behavior-analytic theory of language and cognition that allows us to view gender as a relational contextual variable. Our sense of gender is established and influenced by a rich history of direct and indirect learning experiences, with gender relations participating in, and interacting with, increasingly large and complex relational networks that come to dominate a person's behavior and experience of the world. While there is a suggestion that brief interventions may be able to strengthen more positive, equitable relations, these interventions are competing with social contingencies in our socio-verbal community that by and large continue to reinforce binary gender stereotypes. It is our hope that this paper will act as a launching point for further, nuanced examinations in the domain of RFT and gender. Most importantly, we need to grapple with how we loosen the rigidity of problematic gendered relations and determine the contexts that support broader, more flexible repertoires that promote DEI, and reduce suffering for all. Expanding our individual lens to group-, systems- and community- level interventions and practices may be difficult but necessary if we are to achieve widespread change.

We need to evaluate our empirical efforts and come together collaboratively to contribute to this work with cultural humility, considering the ways in which gender and gender bias show up as a dynamic process that is shaped by socio-cultural contextual factors in complex ways. Just as language lies at the heart of gender-based stereotypes, prejudice, and bias, it can also be harnessed as a tool for social justice and change at all levels. We view our role as scientists as including activism, accompaniment and advocacy and use our science to create contexts that support DEI. However, we also acknowledge that we are the context for our work, and we are also in context. We each bring our own histories (including gender-related biases and stereotypes and intersectional identities) to our work, and, like our research subject matter, we participate in and are influenced by the systems and cultures that surround us. This limits our "knowing" about this topic. As contextual behavior scientists, we commit to a science that is "...characterized by shared values that include the equal dignity of all people, stewardship of the planet, and an emphasis on human rights and ecological sustainability over corporate profits" (Skinta and Williams 2016, p. 294). We, thus, acknowledge that behavior analysis is not the



only way of knowing about or understanding this topic and no one strategy will work across all contexts. The knowledge and wisdom of others, and collaboration beyond our field and specific scientific ways of knowing, will continue to guide, complement, and enhance what our science has to offer on the path to increasing DEI, while reducing suffering and supporting expansive experiences of gender that bring new possibilities and freedom.

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## Notes

- <sup>1</sup> Stimulus equivalence demonstrates how people may learn to respond similarly to two or more stimuli that have become related despite not sharing identical physical features nor having been directly reinforced. For example, if a child is trained to understand the word “dog”, then they are trained to point to a picture of a dog when they hear the word “dog”, they will derive that the picture of a dog means the same as the spoken word “dog”. If they are further trained to point to the written word “dog” when they see the picture of the dog, they will derive that the written word “dog” is the same as the spoken word “dog” (see Sidman 1971). For more details on stimulus equivalence, see Sidman (1994).
- <sup>2</sup> In behavior analysis, appetitive control describes the presence of appetitive functional relations between behavior and the context in which a behavior occurs (Louisiana Contextual Science Research Group 2023). Such functional relations involve stimuli or events that the organism will work to access or are “desirable”. Such stimuli are often termed “positive reinforcers”, where positive reinforcement refers to a process that results in increasing the probability or frequency of a behavior occurring due to increased contact with appetitive contexts or consequences. In contrast to aversive control, appetitive control supports broad flexible repertoires of behavior that are more sensitive to changing contingencies and result in the subjective experience of “freedom” or choice (Goldiamond 1975, 1976; Ming et al. 2023).

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