

Re-assessing the Role of Gender-Related Cognitions for Self-Esteem: The Importance of Gender Typicality for Cisgender Adults

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Abstract Gender-related cognitions have been central to accounts of well-being in children and adults in the United States. Yet, the child and adult literatures are currently not aligned in how they measure these experiences, creating an asymmetry in scientific understanding. The current investigation aligns these literatures by using the short-form of the Bem Sex Role Inventory (BSRI; Bem 1981) (adult literature) and a modified version of Egan and Perry's (2001) Gender Typicality Scale (child literature) with cisgender (i.e., those whose current gender identity is the same label as their birth-assigned category) adult participants. These measures were used to determine the relative contributions of each to self-esteem using nonprobability samples of heterosexual and queer (i.e., lesbian, gay, bisexual, pansexual, and asexual) women and men in the United States. The analyzed groups consisted of cisgender individuals: heterosexual women ($N=97$), heterosexual men ($N=90$), queer women ($N=83$), and queer men ($N=51$). All groups showed significant contributions of adult gender typicality to self-esteem, over and above the BSRI dimensions. Thus, both self-reported gender typicality and self-reported endorsement of certain BSRI dimensions are important indicators of well-being in cisgender adults in the United States.

Keywords Gender · Gendertypicality · Self-esteem · Bem sex role inventory · Cisgender · Heterosexual · Queer

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Introduction

The question of whether gender-related information (e.g., cognitions, behaviors, attitudes) contributes to (or at least covaries with) general psychological well-being in adults has been a topic of research study mostly in the United States since the 1970s (e.g., Abrahams et al. 1978; Bem 1974, 1981, 1993; Spence et al. 1975). The prevailing answer to this question has been that gender-related cognitions (at least) do appear to be integral to the experience of well-being (e.g., Bem 1974, 1981; Spence et al. 1975; Whitley 1983, 1984, 1988). The prevailing answer is supported, in part, by meta-analyses (Whitley 1983, 1984) of studies that used the Bem-Sex Role Inventory (Bem 1974) as the measure of gender-related cognitions in adults and several different well-being measures, including the Rosenberg Self-Esteem scale (Rosenberg 1965). However, as developed below, the BSRI may not be a measure of gender-related cognitions at all. Instead, the BSRI may simply index two different personality traits that covary with respondent gender groups (Helgeson 1994; Spence 1984). If the BSRI does not index gender-related cognitions as such, then an open question becomes: Do gender-related cognitions in fact covary with or contribute to self-esteem? The goal of this article was to answer this question by using a face-valid measure of gender-related cognitions for adults—one that was adapted from an existing, validated measure in the child literature.

The adapted, face-valid measure of gender-related cognitions for adults that we used was an individual's self-reported evaluation of self-other similarity to those in one's gender ingroup, also known as self-reported *gender typicality* (Egan and Perry 2001). We used self-reports of agency and communion traits from the BSRI to determine whether these dimensions contributed to self-esteem by themselves and then when considering gender typicality in the same statistical model.

The participants in this investigation were all *cisgender* adults (i.e., those whose current gender identity label is the same as their birth-assigned category label). Cisgender is the logical counterpart to *transgender spectrum* (i.e., those whose current gender identity is a different label than their birth-assigned category labels; Tate et al. 2013). From the Tate et al. (2013) results, one can generalize that cisgender adults comprise 97–99 % of general survey respondent populations in the United States, thereby being the most common developmental profile of gender identity in that country. Consequently, the present study focused on the research questions for the majority group in terms of gender identity profile, which is likely the group on which both the child and adult literatures in the U.S. have been focusing without making this reference explicit.

The question of whether gender-related cognitions account for variance in self-esteem is an important question for several different scholarly disciplines (e.g., gender studies, psychology, sociology) to the extent that gender is one of the most pervasive categories by which societies across the world organize social information (cf. Wood and Eagly 2010). Such a pervasive social concept across human cultures might covary with psychological influences on general mental health that are further specified by any particular culture, and even further specified by individual experiences with gender in that particular culture (cf. Costa et al. 2001; Tobin et al. 2010). It is from this perspective that the present article proceeds in order to demonstrate that gender-related cognitions may contribute to a specific aspect of mental health (i.e., self-esteem) in a specific cultural context (i.e., the United States). Accordingly, unless otherwise noted, all cited empirical studies are based on U.S. samples of children or adults. Yet, the logic presented is likely applicable, with appropriate nuance, to different cultures.

Gender, Personality, and Well-Being in the United States

The distinguishable constructs that together comprise “gender” may be important sources of psychological information that inform aspects of psychological adjustment for children (Egan and Perry 2001) and adults (Bem 1993; Spence and Helmreich 1979, 1981) in the United States. Yet, the child and adult literatures on the link between gender and well-being are currently not aligned with respect to their foci. The seminal findings for adults (from the 1980s) are that adults tend to experience well-being as a function of traits that are stereotypically and culturally associated with gender groups (e.g., assertiveness, which is associated with males, and sensitivity, which is associated with females; see Bem 1993; Spence and Helmreich 1981, 1984; Helgeson 1994; Whitley 1983, 1984, 1988). The seminal findings for the child literature (from the 2000s) are that children tend to experience well-being as a function of their typicality with respect to other children who have the same gender label (Carver et al. 2003; Egan and Perry 2001; Smith and Leaper 2005; Yunger et al. 2004). The non-

alignment of the literatures means that there has not been an investigation of whether gender typicality specifically could also be a predictor of well-being in adults. The goal of the present investigation was therefore to align the literatures by examining the potential link between gender typicality and well-being in cisgender adults. Moreover, we designed the current study to estimate this typicality and well-being link relative to the established finding that agency and communion traits are associated with self-esteem within the adult literature in the United States. Below, we discuss the specifics of the measures and findings from the child and adult literatures.

Children, Gender Typicality, and Well-Being

In the developmental psychology literature, Egan and Perry (2001) have examined how gender-related cognitions in middle childhood (i.e., 4 through 8 years old) are associated with adjustment. Importantly, Egan and Perry (2001) approached children’s experience of gender as a multidimensional construct—being comprised of four different dimensions: (a) felt gender typicality (i.e., being typical of one’s gender ingroup), (b) contentment with gender assignment, (c) felt pressure for gender stereotype conformity, and (d) intergroup bias. In the same investigation, Egan and Perry (2001) found that self-rated gender typicality was positively correlated with a child’s global self-worth and acceptance from peers.

Carver et al. (2003) extended this work by showing that boys and girls who perceived themselves as gender atypical (or different from their ingroup) reported higher levels of distress and dissatisfaction with their social lives. Yunger et al. (2004) examined preadolescents in a 3-year longitudinal study of their self-rated gender typicality and psychological well-being and found that lower gender typicality predicted reduced levels of well-being over time, with initial levels controlled. Smith and Leaper (2005) further extended this work by showing that peer acceptance partially mediates the relationship between perceived gender typicality and self-worth for adolescents. Taken together these investigations provide consistent support for the idea that self-reported gender typicality is associated with well-being from childhood to adolescence. Tobin et al. (2010) have summarized these findings with children and adolescents around what they term the *gender self-socialization model* (GSSM). One of the tenets of this model is that gender typicality is thought “to foster both the adoption of [gender] stereotypes and the projection of one’s own attributes onto same-sex others” (Tobin et al. 2010, p. 609). In brief, and extending this to adults, if a woman does not feel typical of other women, this is a statement that she is less likely to construct her self-view around the social attributes that she believes that other women have and she is less likely to project her own attributes onto other women. According to the GSSM, increasing perceptions of gender typicality should lead to a sense of security in social

interactions with same gender peers, and this perceived security is correlated with better psychological adjustment.

Adults, Gender-Associated Traits, and Well-Being

Social/personality psychologists have also examined gender-related constructs and well-being for adults (e.g., Bem 1974, 1981; Helgeson 1994; Spence and Helmreich 1979, 1981; Spence 1984; Whitley 1983, 1984, 1988). However, social/personality theorists have only recently created an explicitly multifaceted model of gender for adults that is parallel to and expands the multidimensional model used by developmentalists for children (Tate et al. 2014). Specifically, Tate et al. (2014) have characterized theorizing on gender as a bundle of constructs that include: (a) birth-assigned gender category (viz. natal sex); (b) current gender identity (viz. self-categorization into a gender group)—which may or may not correspond to one's birth-assigned category (Tate 2012, 2014; Tate et al. 2013); (c) gender stereotypes and roles (Bem 1974; Spence et al. 1975), and other social expectations associated with genderhood (e.g., manhood, womanhood; Vandello et al. 2008); (d) social presentation associated with gender categories, including attire-based visual appearance (Kessler and McKenna 1978); and finally, (e) gender evaluations, which are both intragroup—such as ingroup identification (Tropp and Wright 2001)—and intergroup—such as sexism (see Glick and Fiske 1996, 1999). It is worth noting that adult literature also features collective identity models (e.g., Ashmore et al. 2004) that explicitly emphasize multidimensionality in the understanding of any social identity. While these models can be applied to gender, they are meant to be general enough to apply to any social identity. In any case, Tate et al. (2014) have made the parallel argument to Egan and Perry (2001) that gender is a multidimensional construct for adults.

The bulk of the empirical research on gender and well-being for adults has focused on gender stereotypes and gender role adherence (e.g., Spence 1984; Whitley 1983, 1984, 1988). The BSRI in particular was developed to facilitate empirical research on psychological androgyny (i.e., endorsing both male-associated and female-associated traits) as it was Bem's belief that adherence to stark *sex roles*—now more appropriately referred to as *gender roles*—may lead to negative behavioral and social consequences that would decrease overall psychological health for adults (Bem 1974, 1975, 1981). Research on adults using the BSRI has shown that greater endorsement of the assumed male-stereotyped traits (masculinity) is consistently associated with higher scores on well-being indices (Whitley 1983, 1984). However, the assumed female-stereotyped traits (femininity) were less strongly and less consistently correlated with well-being indices (Whitley 1983, 1984). Nevertheless, a lingering issue for the adult literature has been the construct validity associated with the BSRI. The BSRI has been critiqued on several accounts

including: theoretical rational and item selection procedures (Hoffman 2001; Hoffman and Borders 2001; Spence and Helmreich 1981), score interpretation (Hoffman 2001), factor analysis/dimensionality (Choi, Fuqua, and Newman 2008), and the validity of respondents' categorization into four profiles or types (i.e., feminine, masculine, androgynous, undifferentiated; Abrahams et al. 1978; Myers and Gonda 1982). Thus, exactly what the BSRI is measuring is still open for debate. Bem (1981) claimed that the BSRI was a measure of masculinity and femininity as well as an individual's propensity to view the world using gender as a lens. Yet, Spence and Helmreich (1981) argued that the BSRI is a measure of *instrumentality* (rather than masculinity) and *expressiveness* (rather than femininity). Instrumentality (also, *agency*) is roughly, being assertive, self-reliant, and tending toward independence, while *expressiveness* (also *communion*) is roughly, being emotionally expressive, other-oriented, and tending toward interdependence (see also Spence 1984). In the past two decades and to the present, other theorists have followed this agency/communion reasoning (e.g., Gonzalez et al. 2012; Helgeson 1994; Laurent and Hodges 2009; Witt and Wood 2011). Consistent with the current trend, we refer to the dimensions captured by the BSRI as *agency* (in place of masculinity) and *communion* (in place of femininity). Moreover, using the agency and communion understanding, Helgeson (1994) argues that each dimension should be related to well-being, while noting that the sources of and reasons for these relationships might be distinct. Helgeson (1994) details existing evidence that agency is correlated with the reduction of negative symptoms (e.g., anxiety, depression) while communion is correlated with social support, among other interpersonal constructs, that might facilitate mental health (p. 415). Helgeson believes, in line with Bakan (1966), that agency and communion might be foundational aspects of human social experience that have over time and different cultures become associated with gender expectations. Accordingly, even if the BSRI does not truly measure gender-related cognitions, its underlying dimensions may in fact be related to self-esteem and other aspects of psychological adjustment in adults.

The Question of Measurement Validity Across the Literatures

Contrasting the social/personality and developmental literatures on gender-related cognitions, one can see an important distinction between the two most common measurement tools. Egan and Perry's (2001) gender typicality scale has face validity concerning gender. Participants are asked to estimate their degree of typicality with either other boys or other girls (e.g., "I feel like I am good at what most other boys are good at" or "I feel like I am good at what most other girls are good at"). In contrast, the BSRI asks participants to rate the extent to

which they possess specific traits (i.e., “to what extent does this adjective describe you?”). On the BSRI, the traits themselves do not explicitly state that there is a gender group associated with them. An example BSRI item is that a person rates how *assertive* they are on a 1 to 7, ascending Likert scale (Bem 1974, 1981). Notice that assertiveness is never explicitly paired with a gender group in the phrasing of the item. Thus, the face validity of the BSRI items as they concern gender is questionable (see Abrahams et al. 1978; Hoffman and Borders 2001; Spence and Helmreich 1981). Additionally, Pedhazur and Tetenbaum (1979) argued that people’s self-ratings of their instrumental (agentic) and expressive (communal) traits do not correlate highly with their self-ratings of how “masculine” and “feminine” they feel, respectively.

Tobin et al. (2010) have attempted to resolve the validity controversy of the BSRI by siding with the arguments of Spence and colleagues and have moved forward describing the BSRI as a measure of agency and communion personality traits. As noted above, Helgeson (1994), Laurent and Hodges (2009), Witt and Wood (2011), for example, have made the same arguments in the adult literature. We agree with the perspective that the BSRI dimensions are most likely measuring agency and communion trait endorsement and we name our dimensions accordingly. Moreover, while it was not our main goal to resolve the controversy surrounding what constructs the BSRI actually measures, our design does offer a unique perspective toward a resolution. By using a face valid measure of gender-related cognitions (i.e., gender typicality) to determine its association with well-being for adults in addition to using the BSRI agency and communion dimensions, we can establish either divergent or convergent validity by exploring the correlations between gender typicality and the BSRI dimensions. Recall that because the adult gender typicality measures are calibrated to the respondent’s gender ingroup (see Appendix), correlations will initially be established for women and men separately. If there are high correlations between gender typicality and at least one of the BSRI dimensions, then researchers can reasonably argue that one measure is almost completely redundant with the other—indicating convergent validity. However, if there are modest or small correlations between gender typicality and the BSRI dimensions, then this would be empirical evidence for divergent validity—that the BSRI is measuring something other than (but overlapping to a small degree with) gender typicality. Our current results therefore add to the literature by determining whether (and to what extent) the BSRI dimensions and gender typicality are similar or distinct.

Overview of the Present Research

The overarching goal of this investigation was to align the developmental and social/personality literatures in their approaches to the association between gender-related cognitions

and psychological well-being. To accomplish this goal, we sampled cisgender adults of two different sexual orientation groups—heterosexual and queer, for reasons explained below—and had them complete an adapted form of the Egan and Perry (2001) gender typicality measure (see the Method section) as well as the short-form of the BSRI (Bem 1981). Because gender identity is the necessary foundation for sexual orientation identity, even though the two constructs are not the same (Tate 2012), we wanted to determine whether queer participants’ perceptions of gender typicality were also associated with well-being at the same degree as they were for heterosexual participants. It is possible that queer participants feel less typical than heterosexual participants because most (cis) women and (cis) men report being heterosexual (see Diamond 1993). In fact, there is already reason to think that self-rated gender typicality might vary by sexual orientation. Carver et al. (2004) sampled U.S. children and adolescents from the 4th to 8th grades and showed that those who questioned their heterosexuality had lower self-reported typicality scores than those who did not. Yet, it is unclear whether the Carver et al. (2004) study was actually measuring sexual orientation or some other developmental experience (cf. Hegarty 2009). Consequently, the purpose of including queer-identified respondents was to determine whether gender typicality could be used equally well for participants who have the same gender identities, the same profile of gender self-categorization, but different sexual orientations (e.g., heterosexual cis women and lesbian cis women). Considering the BSRI and sexual orientation groups, Carlson and Steuer (1985) have shown that the BSRI can be used for lesbians and gay men to predict adjustment outcomes. Our present study extends the use of the BSRI to other non-heterosexual orientations—namely, *bisexual* women and men, *asexual* women and men, and *pansexual/anthroposexual* women and men, all with cisgender self-categorization profiles (see Method).

The statistical model for this investigation is a sequential linear regression using self-esteem scores as the outcome measure being predicted from the BSRI agency and communion dimensions and self-reported gender typicality. (Some readers may know this technique as “hierarchical regression”; however, current practice is to use the name “sequential regression” see Tabachnick and Fidell 2013, pp. 144–146). Sequential regression was chosen for two reasons. First, this modeling is a theory test in which some predictors are given priority entry into the statistical model and later predictors must then account for unique (non-shared) variance over and above the first predictors (Tabachnick and Fidell 2013). Second, sequential regression allows the researchers to determine the priority of entry. Our interest was in testing whether self-rated gender typicality provides unique variance over and above the agency and communion trait endorsements because agency endorsement, at least, is a known and reliable correlate of self-esteem

(Whitley 1983, 1984) and communion endorsement is a theorized (but less consistent) correlate (Helgeson 1994). Gender typicality has not yet been explored with adults and, consequently, the use of sequential regression delivers a specific numerical estimate of how much variance in self-esteem gender typicality can account for over and above the established BSRI dimensions for adults. We created our sequential regression using two steps. Step 1 included self-reported BSRI agency and BSRI communion endorsement. Step 2 included self-reported gender typicality.

Research Predictions

For our investigation, we created six research predictions based on previous literature:

- Prediction 1: BSRI agency will be associated with self-esteem. For all groups, BSRI agency should account for a significant amount of variance in self-esteem, such that higher ratings will be associated with higher self-esteem scores. This prediction is based on the separate arguments from Helgeson (1994, p. 415) and Whitley (1983, 1984) that agency trait endorsement should be related to increases in self-esteem (as well as decreases in negative psychological states) because agency functions as a protective factor against stress and negative emotions (see also Nezu et al. 1986). This prediction will be evaluated using the zero-order correlations presented in the [Results](#) section.
- Prediction 2: BSRI communion may be associated with self-esteem. Helgeson (1994) argues that communion trait endorsement is associated with social-support, which is known to facilitate well-being (p. 415). However, Whitley (1983) found little support for BSRI communion scores being associated with self-esteem specifically. Whitley's (1983, Table II) meta-analysis showed that, when statistically separated from agency scores, BSRI communion scores have an effect size of near zero with the Rosenberg Self-Esteem Scale (Rosenberg 1965) for women and men. Thus, Prediction 2 can be viewed as a contrasting prediction between two perspectives to be empirically investigated. This prediction will be evaluated using the zero-order correlations presented in the [Results](#) section.
- Prediction 3: Gender typicality will be associated with self-esteem. For all groups, gender typicality should account for a significant amount of variance in self-esteem, such that higher typicality ratings will be associated with higher self-esteem scores. This prediction is based on the underlying logic of the gender typicality construct as presented by Tobin et al. (2010). If gender typicality is a measure of a person's social comparison to others in the gender ingroup that indexes security through self-other similarity, then gender typicality should be positively correlated with self-esteem because self-esteem is conceptualized to require security, in part (Rosenberg 1965). This prediction will be evaluated using the zero-order correlations presented in the [Results](#) section.
- Prediction 4. BSRI Agency will still be associated with self-esteem when gender typicality and communion are controlled. Extending Prediction 1, for all groups, agency endorsement should still be positively associated with self-esteem, holding gender typicality and communion trait endorsement constant. If agency trait endorsement and gender typicality are distinguishable constructs, the relationship between self-esteem and agency trait endorsement should hold across the samples in this study, even when considering other predictors. This prediction will be evaluated in the sequential regression analyses presented in the [Results](#) section.
- Prediction 5. BSRI Communion may still be associated with self-esteem when gender typicality and communion are controlled. Extending Prediction 2, communion endorsement may still be positively associated with self-esteem, holding gender typicality and agency trait endorsement constant, for all groups. If communion trait endorsement and gender typicality are distinguishable constructs, and the relationship of communion to self-esteem is robust, then the relationship found in previous studies should hold across the samples in this study even when considering other predictors. Recall, however, that there are inconsistent findings about the relationship of communion trait endorsement and self-esteem (see Prediction 2). Accordingly, there may be no detectable relationship between communion trait endorsement and self-esteem when other predictors are controlled. This prediction will be evaluated in the sequential regression analyses presented in the [Results](#) section.
- Prediction 6. Gender typicality will still be associated with self-esteem when agency and communion are

controlled. Extending Prediction 3, for all groups, self-rated gender typicality should be positively associated with self-esteem, holding agency and communion trait endorsement constant. This prediction is a stringent test of the contribution of gender typicality to self-esteem for adults, and one that presumes that gender typicality is relatively separable from the agency and communion dimensions. This prediction will be evaluated using the sequential regression analyses presented in the [Results](#) section.

Relationship of Interest

Additionally, we tracked and commented on the correlation between gender typicality and the BSRI dimensions to determine whether they are assessing similar constructs (e.g., high correlation) or different constructs (e.g., low correlation) because there is no prior use of these scales in the same sample. This relationship of interest will be tracked using zero-order correlations in the [Results](#) section.

Method

Overview

We recruited two different, non-overlapping groups of heterosexual- and queer-identified participants using the same sampling methodology. Specifically, we used nonprobability Internet listservs and forums as the common survey mode to make the heterosexual [participants](#) as comparable as possible to the queer participants in terms of mode of access and recruitment cities. No deception was used in recruitment; all participants were recruited with the cover story that the researchers were interested in assessing the relationship of personality characteristics to well-being. Participants were informed that they would complete several survey measures about their traits, behaviors, and attitudes, and that the entire study would take approximately 45 min. As there was no monetary compensation for participants, we told participants that they would be contributing to a better scientific understanding of the factors related to well-being.

In order to recruit an adequate sample size of queer-identified individuals given the number of predictors in our model, we followed the common nonprobability procedures of other studies that recruit lesbian, gay, and bisexual (LGB) populations and used a combination of Internet *venue-based* and *snowball* sampling methods (see Meyer and Wilson 2009, for definitions). Specifically, we recruited from listservs and Internet forums in the United States that are social networking venues that feature high concentrations of LGB populations (e.g., Yahoo! and Facebook groups for lesbians and gay men;

Craigslist forums *w4w* [women for women], *m4m* [men for men] in Seattle, San Francisco, Los Angeles, Denver, New Orleans, Chicago, and New York City) as well as on Internet participant recruitment listservs maintained by academic psychology societies (e.g., Division 44 of the American Psychological Association [Lesbian, Gay, Bisexual, and Transgender Psychology]). At the end of the survey, we encouraged participants to pass the survey link to acquaintances and friends who were queer-identified. To create a parallel procedure for recruiting heterosexual-identified participants, we posted links to the survey on listservs and Internet forums in the United States that are social networking venues that feature high concentrations of heterosexual populations (e.g., Yahoo! and Facebook groups for sports and fashion; Craigslist forums *w4m* [women for men], *m4w* [men for women] in Seattle, San Francisco, Los Angeles, Denver, New Orleans, Chicago, and New York City) as well as on Internet participant recruitment listservs maintained by academic psychology societies (e.g., Division 8 of the American Psychological Association [Social and Personality Psychology]). At the end of the survey, we encouraged participants to forward the study link to friends and acquaintances—many of whom we presumed would be heterosexual. Specifics of each study sample are also reported below in this section.

Participants

Heterosexual-identified

We initially recruited 215 cisgender individuals (135 cis women, 98 cis men) as participants from the United States. Cis women and men were chosen to estimate the relationship between the variables of interest because cisgender profiles are numerically more common than transgender spectrum profiles (comprising 97–98 % of general survey samples; see Tate et al. 2013). Therefore, it is reasonable to assume that Whitley's (1983, 1984) meta-analyses were largely based on cis women and cis men even though psychologists did not measure these identities with precision until recently. Additionally, only heterosexual participants were chosen for the analysis to isolate the relationship between gender typicality and the other variables for the numerical majority sexual orientation. Finally, we only included respondents who had complete data for all four measures of interest (i.e., no missing data for any item were imputed). As a result, the analyzed data came from 187 heterosexual cisgender individuals (97 cis women and 90 cis men). Participants ranged in age from 18 to 71 years old ($M_{\text{age}}=26.40$, $SD_{\text{age}}=9.99$, $Mdn_{\text{age}}=23$).

Queer-identified

We initially recruited 152 cisgender individuals (91 cis women and 61 cis men) as participants. Cis men and women were

chosen to hold this variable constant across the samples included in this study. Additionally, only participants who identified as *gay man*, *lesbian*, *bisexual*, *pansexual/anthroposexual*, *asexual*, or *other*, were chosen for the analysis. We chose to be inclusive in our data collection and analysis to avoid further marginalizing minority sexuality identities other than lesbian and gay. We collectively refer to this sample as *queer*, which is an accepted usage of this term in other scholarship (see Factor and Rothblum 2008, p. 236). Including only queer-identified individuals and only respondents who had complete data for all four measures of interest (i.e., no missing data for any item were imputed), the analyzed sample was 134 cisgender individuals (83 cis women, 51 cis men). (Also, 18 participants in this sample identified as *heterosexual* and were therefore excluded.) Participants ranged in age from 18 to 70 years old ($M_{\text{age}}=32.1$, $SD_{\text{age}}=12.3$, $Mdn_{\text{age}}=28$).

Measures

Two-Question Assessment of Gender Identity

Participants completed the two-question assessment of gender identity (2QAGI; Tate et al. 2013) to determine their gender self-categorization. The 2QAGI asks participants to indicate both their current gender identity and birth-assigned gender category as separate items. The first item asked: *What is your current identity?* The response options were *female*, *male*, *transgender female*, *transgender male*, *genderqueer*, *intersex*. The second item asked: *What gender category were you assigned at birth?* The response options were *female*, *male*, and *intersex*. Using the 2QAGI, researchers can determine *cisgender profiles* (same response to both questions) as well as *transgender spectrum profiles* (different responses to both questions) (see Tate et al. 2013). The 2QAGI has a missing data rate between 0 and 0.16 %; for comparison, using a single question with four response options (i.e., *female*, *male*, *transgender*, *other*) to ask about gender identity has a 1.26 % missing data rate (see Tate et al. 2013).

Sexual Orientation Question

Participants completed a single item assessment of sexual orientation, which asked participants “What is your sexual orientation?” The answer choices were *heterosexual*, *gay man*, *lesbian*, *bisexual*, *asexual*, *pansexual/anthroposexual*, and *other (please specify)*. For the heterosexual sample recruitment method, participants who chose *heterosexual* were included in that analysis. For the queer sample recruitment method, participants who chose any other option, excluding *heterosexual*, were included in that analysis. As noted above (Method Overview), the samples were non-overlapping.

Bem-Sex Role Inventory

Participants completed the short-form of the Bem Sex Role Inventory (BSRI; Bem 1981). This 30-item measure assesses the endorsement of personality traits associated with *communion* (also called femininity), *agency* (also called masculinity), and with neither communion nor agency (filler items). There are 10 communion items, 10 agency items, and 10 filler items. All participants were asked to rate how much a specific trait or phrase describes them on the following scale: 1 (*never or almost never true*) to 7 (*always or almost always true*). Example agency traits are *independent*, *forceful*, *assertive*. Example communion traits are *affectionate*, *sympathetic*, and *tender*. Example filler items are *truthful*, *reliable*, and *conventional*. In the heterosexual sample, the agency items showed good internal consistency ($\alpha=0.85$), as did the communion items ($\alpha=0.86$). In the queer sample, the agency items showed good internal consistency ($\alpha=0.89$), as did the communion items ($\alpha=0.87$). Higher scores indicate more of the trait.

Adult Gender Typicality

Participants completed a 6-item measure of adult gender typicality (AGT) that we adapted from Egan and Perry’s (2001) measure of gender typicality. Based on their responses to the current identity question on the 2QAGI (see above), participants saw typicality questions for their stated current gender identity. For women, a sample item on the AGT was “I feel that my personality is like most women’s personalities.” For men, the parallel sample item on the AGT was “I feel that my personality is like most men’s personalities.” Participants responded to each question on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale. In the heterosexual sample, the AGT was internally consistent across the gender of respondents ($\alpha=0.87$), and showed similar internal consistency coefficients for heterosexual cis women ($\alpha=0.87$) and heterosexual cis men ($\alpha=0.88$). In the queer sample, the AGT was internally consistent across the gender of respondents ($\alpha=0.86$), and showed similar internal consistency coefficients for queer cis women ($\alpha=0.86$) and queer cis men ($\alpha=0.87$). Moreover, high internal consistencies were obtained for cis women only (across sexual orientations) ($\alpha=0.86$) and cis men only (across sexual orientations) ($\alpha=0.87$). (For comparison, Egan and Perry (2001) found overall $\alpha=0.78$ across both genders of children). For all AGT items, see Appendix. Higher scores indicate more typicality.

Rosenberg Self-Esteem

Participants completed the Rosenberg Self-Esteem Scale (RSES; Rosenberg 1965). The RSES features 10 items designed to assess respondents’ feelings of global, personal

esteem. Example items are “I feel that I have a number of good qualities” and “All in all, I am inclined to think I am a failure” (reverse scored). Participants responded on a 1 (*strongly agree*) to 4 (*strongly disagree*) Likert scale. After reverse coding appropriate items, all ten items were averaged to form a composite score for each participant. The RSES had good internal consistency in the heterosexual sample ($\alpha=0.85$) and in the queer sample ($\alpha=0.92$). RSES scores were rescaled so that higher values indicated higher self-esteem.

Procedure

Participants logged onto the survey after receiving a link that either (a) appeared on their listserv or forum, or (b) was e-mailed to them by an acquaintance or friend. The survey was constructed in and delivered by the Internet survey software Qualtrics. In terms of survey flow, all participants first completed the 2QAGI, then completed a series of filler measures (e.g., Big Five Mini-Markers). The main measures were imbedded among the filler measures. The BSRI and AGT were counterbalanced across participants so that half the time the AGT appeared before the BSRI and half the time the AGT appeared after the BSRI. The RSES always appeared after both the AGT and BSRI—separated by two filler measures. The sexual orientation question always appeared as one of the last questions, which assessed other demographic information (e.g., income, location within the U.S., age).

Exploratory Data Analysis and Model Building

Exploratory data analysis (EDA; Tukey 1977) as zero-order correlations among predictors was used before running the main analyses to determine the appropriateness of the data structure for the sequential regression analysis. Based on the zero-order correlations, and confirmed using tolerance statistics, we neither anticipated nor encountered severe collinearity problems when using the regression analysis. In the separate regression models run below, all tolerances were ≥ 0.883 within each cisgender sexual orientation group.

Results

Table 1 shows the means, standard errors, and effect size estimates (η^2_p) for each variable in the common statistical model across the heterosexual and queer samples. Table 1 also shows the results of a multivariate analysis of variance (MANOVA) with both predictor and outcome variables treated as dependent variables and the sexual orientation and gender of respondent variables as independent variables.

The results are presented in two parts to test the six hypotheses for this investigation. Predictions 1–3 were tested using

Table 1 Group comparisons of participants' scores by sexual orientation and cisgender identity

Measure	Heterosexual		Queer		F	η^2_p	Heterosexual		Queer		F	η^2_p
	Women M (SE)	Men M (SE)	Women M (SE)	Men M (SE)			Combined M (SE)	Combined M (SE)				
BSRI agency	4.95 (0.10)	5.10 (0.10)	5.04 (0.10) _a	4.47 (0.13) _a	11.7*	0.036	5.03 (0.07) _b	4.76 (0.08) _b	6.33*	0.020		
BSRI communion	5.67 (0.08) _c	5.32 (0.09) _c	5.46 (0.09)	5.27 (0.12)	1.65	0.005	5.49 (0.06)	5.37 (0.074)	1.72	0.005		
Adult gender typicality	5.01 (0.13)	5.19 (0.13)	3.32 (0.14)	3.34 (0.17)	0.007	0.000	5.10 (0.09) _d	3.33 (0.11) _d	153*	0.325		
Rosenberg self-esteem _g	3.17 (0.06)	3.21 (0.06)	3.18 (0.06) _e	2.95 (0.08) _e	5.02*	0.016	3.19 (0.05) _f	3.06 (0.05) _f	4.14*	0.013		

Means (M) and standard error (SE) estimates for each variable that be included in the main analysis. Means and standard errors with the same subscript are significantly different from each other. Sample size for heterosexual participants was cis women $n=90$ ($N=187$) and for cis men $n=97$ and for cis women $n=83$ and for cis men $n=51$ ($N=134$). *Queer* was operationalized as any of the following responses for sexual orientation: *gay man, lesbian, bisexual, pansexual, asexual, or other* (the latter excluding listed “heterosexual” responses) *F* and η^2_p values are derived a multivariate analysis of variance performed on these data. * $p < 0.05$, all others $ps \geq 0.052$. η^2_p is the measure of effect size associated with the mean difference per row. All *F* values have degrees of freedom (1, 317)

Table 2 Zero-order correlations between predictors and self-esteem for cisgender heterosexual participants

Measure	Adult gender typicality	BSRI agency	BSRI communion	Rosenberg self-esteem
Adult gender typicality	–	0.226*	0.309**	0.252*
BSRI agency	0.235*	–	0.273**	0.088
BSRI communion	0.154	0.335**	–	0.199
Rosenberg self-esteem	0.421**	0.340**	0.339**	–

All zero-order correlations are based on listwise deletion. Heterosexual cis women ($N=97$) are listed in the top diagonal of the correlation table and heterosexual cis men ($N=90$) are listed in the bottom diagonal

* $p<0.05$, ** $p<0.01$

the zero-order correlations among the predictor and outcome variables. Predictions 4–6 were tested using sequential regression analysis. The relationship of interest was tested using the zero-order correlations.

Zero-Order Correlations

Heterosexual-identified Participants

Table 2 shows the zero-order correlations for the predictor and outcome measures for heterosexual cis women (top diagonal) and cis men (bottom diagonal). Each correlation matrix used a listwise deletion for all included measures. Of note, the BSRI agency and communion scores modestly correlated for heterosexual cis women ($r=0.273$) and for heterosexual cis men ($r=0.335$) (see Table 2).

Considering self-esteem and the BSRI dimensions, for heterosexual cis women, neither BSRI agency scores, $r(95)=0.088$, $p=0.392$, nor BSRI communion scores, $r(95)=0.199$, $p=0.051$, were significantly correlated with self-esteem—even though the communion-self-esteem correlation was marginally significant (see Table 2, top diagonal). These results do not support Predictions 1 or 2 (at $p<0.05$). Yet, for heterosexual cis men, both agency scores, $r(88)=0.340$, $p=0.001$, and communion scores, $r(88)=0.339$, $p=0.001$, were significantly correlated with self-esteem (see Table 2, bottom diagonal). These results support Predictions 1 and 2.

Considering self-esteem and AGT scores, these variables were significantly correlated for heterosexual cis women, $r(95)=0.252$, $p=0.013$, and for heterosexual cis

men, $r(88)=0.421$, $p<0.001$ (see Table 2). These results support Prediction 3.

Considering AGT scores and BSRI dimensions, for heterosexual cis women, AGT scores correlated modestly with BSRI agency scores ($r=0.226$) and BSRI communion scores ($r=0.309$) (see Table 2, top diagonal). For heterosexual cis men, AGT scores correlated modestly with the BSRI agency scores ($r=0.235$) and weakly with BSRI communion scores ($r=0.154$) (see Table 2, bottom diagonal). These results provide traction on the relationship of interest and suggest that the BSRI dimensions and gender typicality show low construct validity (i.e., they are likely measuring different constructs).

Queer-identified Participants

Table 3 shows the zero-order correlations for the predictor and outcome measures for queer cis women (top diagonal) and cis men (bottom diagonal). Each correlation matrix used a listwise deletion for all included measures. Of note, the BSRI agency and communion scores weakly correlated for queer cis women ($r=0.189$) and modestly for queer cis men ($r=0.285$) (see Table 3).

Regarding self-esteem and BSRI dimensions, for queer cis women, both agency scores, $r(81)=0.374$, $p<0.001$, and communion scores, $r(81)=0.341$, $p<0.001$, were significantly correlated with self-esteem (see Table 3, top diagonal). These results support Predictions 1 and 2. Similarly, for queer cis men, both agency scores, $r(49)=0.633$, $p<0.001$, and communion scores, $r(49)=0.281$, $p=0.046$, were significantly

Table 3 Zero-order correlations between predictors and self-esteem for cisgender queer participants

Measure	Adult gender typicality	BSRI agency	BSRI communion	Rosenberg self-esteem
Adult gender typicality	–	–0.149	0.274**	0.218*
BSRI agency	0.097	–	0.189	0.374**
BSRI communion	–0.062	0.285*	–	0.341**
Rosenberg self-esteem	0.281*	0.633**	0.281*	–

All zero-order correlations are based on listwise deletion. Queer cis women ($N=83$) are listed in the top diagonal of the correlation table and queer cis men ($N=51$) are listed in the bottom diagonal. (Queer was operationalized as *gay/lesbian*, *bisexual*, *asexual*, and *pansexual*). * $p<0.05$, ** $p<0.01$

correlated with self-esteem (see Table 3, bottom diagonal). These results support Predictions 1 and 2.

Regarding self-esteem and AGT scores, these variables were significantly correlated for queer cis women, $r(81)=0.218$, $p=0.048$, and for queer cis men, $r(49)=0.281$, $p=0.046$ (see Table 3). These results support Prediction 3.

Regarding AGT scores and BSRI dimensions, for queer cis women, AGT scores correlated weakly with BSRI agency scores ($r=-0.149$) and modestly with BSRI communion scores ($r=0.274$) (see Table 3, top diagonal). For queer cis men, AGT scores correlated very weakly with BSRI agency scores ($r=0.097$) and with BSRI communion scores ($r=-0.062$) (see Table 3, bottom diagonal). These results provide further support for the idea that the BSRI dimensions and gender typicality show low construct validity (i.e., they are likely measuring different constructs).

Regression Analyses

The three predictors—BSRI agency, BSRI communion, and AGT scores—were entered into a sequential regression analysis predicting self-esteem scores using two steps. In the first step, the BSRI dimensions were entered simultaneously. In the second step, AGT scores were entered to determine whether they contributed to the variance accounted for in self-esteem over and above the BSRI dimensions. Four separate analyses were conducted for heterosexual cis women (Table 4), heterosexual cis men (Table 5), queer cis women (Table 6), and queer cis men (Table 7). (For those interested in an analysis of these results that is more comparable to the Whitley (1984)

Table 4 Gender-related cognitions predicting rosenberg self-esteem scores for cisgender heterosexual women

Predictors	ΔR^2	ΔF	b^*	sr^2
Step 1	0.041	2.00		
BSRI agency			0.036	0.001
BSRI communion			0.189	0.033
Step 2	0.039*	3.95*		
BSRI agency			0.004	.000 ^a
BSRI communion			0.133	0.015
Gender typicality			0.210*	0.039
Total R^2	0.080 [†]	2.69 [†]		

$N=97$. b^* s are standardized regression coefficients from each step of the equation. ΔR^2 is the change in the multiple correlation coefficient between each step. ΔF is the test associated with the null hypothesis test of zero change for each step. sr^2 is the squared semipartial correlation for each predictor with the outcome (removing the other predictors) in that step. ^a=effect size coefficient too small to depict in three digits; actual effect size is 0.000016

[†] $p=0.051$, * $p\leq 0.05$, ** $p\leq 0.01$

Table 5 Gender-related cognitions predicting rosenberg self-esteem scores for cisgender heterosexual men

Predictors	ΔR^2	ΔF	b^*	sr^2
Step 1	0.172**	9.06*		
BSRI agency			0.255**	0.058
BSRI communion			0.253*	0.057
Step 2	0.111*	13.29*		
BSRI agency			0.184**	0.029
BSRI communion			0.224*	0.044
Gender typicality			0.344*	0.111
Total R^2	0.283**	11.33**		

$N=90$. b^* s are standardized regression coefficients from each step of the equation. ΔR^2 is the change in the multiple correlation coefficient between each step. ΔF is the test associated with the null hypothesis test of zero change for each step. sr^2 is the squared semipartial correlation for each predictor with the outcome (removing the other predictors) in that step * $p<0.05$, ** $p<0.01$

methods, see the Online Supplemental Materials at <http://online.sfsu.edu/ctate2/typicality-esteem-cisadults.html>.)

Heterosexual Cisgender Women

Table 4 displays the regression coefficients and R^2 values for the heterosexual cis women in both steps of the sequential regression. In the first step, the BSRI dimensions were not a significant set of predictors for self-esteem scores, together accounting for 4.1 % of the total variance in self-esteem scores, $F(2, 94)=2.00$, $p=0.141$, $R^2=0.041$. Adding AGT scores to the second step, contributed 3.9 % new variance accounted for above step 1, which was a statistically significant change, $F(1, 93)=3.95$, $p=0.050$, $\Delta R^2=0.039$. In the

Table 6 Gender-related cognitions predicting rosenberg self-esteem scores for cisgender queer women

Predictors	ΔR^2	ΔF	b^*	sr^2
Step 1	0.216**	11.00**		
BSRI agency			0.321**	0.099
BSRI communion			0.280**	0.076
Step 2	0.040*	4.29*		
BSRI agency			0.366**	0.123
BSRI communion			0.213*	0.040
Gender typicality			0.214*	0.040
Total R^2	0.256**	9.07**		

$N=83$. b^* s are standardized regression coefficients from each step of the equation. ΔR^2 is the change in the multiple correlation coefficient between each step. ΔF is the test associated with the null hypothesis test of zero change for each step. sr^2 is the squared semipartial correlation for each predictor with the outcome (removing the other predictors) in that step. * $p<0.05$, ** $p\leq 0.01$

Table 7 Gender-related cognitions predicting rosenberg self-esteem scores for cisgender queer men

Predictors	ΔR^2	ΔF	b^*	sr^2
Step 1	0.412**	16.79**		
BSRI agency			0.602**	0.333
BSRI communion			0.109	0.011
Step 2	0.054*	4.73*		
BSRI agency			0.573**	0.297
BSRI communion			0.132	0.016
Gender typicality			0.234*	0.054
Total R^2	0.465**	13.64**		

$N=51$. b^* s are standardized regression coefficients from each step of the equation. ΔR^2 is the change in the multiple correlation coefficient between each step. ΔF is the test associated with the null hypothesis test of zero change for each step. sr^2 is the squared semipartial correlation for each predictor with the outcome (removing the other predictors) in that step. * $p<0.05$, ** $p\leq 0.01$

second step, the set of predictors accounted for 8.0 % of the variance in self-esteem, which was marginally significant, $F(3, 93)=2.69$, $p=0.051$, $R^2=0.08$ (see Table 6). In the second step, neither BSRI agency nor BSRI communion were significantly correlated with self-esteem, $b^*s\leq 0.128$, $ps\geq 0.218$, $srs\leq 0.123$ (see Table 4). These results are inconsistent with Prediction 4 and the Helgeson (1994) arguments for Prediction 5; however, they are consistent with the Whitley (1984) arguments for Prediction 5. Yet, consistent with Prediction 6, AGT was significantly and positively correlated with self-esteem, $b^*=0.210$, $t(93)=1.99$, $p=0.050$, $sr_{\text{typicality(Step 2)}}=0.198$, such that higher gender typicality scores were associated with higher self-esteem scores (see Table 4).

Heterosexual Cisgender Men

Table 5 displays the regression coefficients and R^2 values for the heterosexual cis men in both steps of the sequential regression. In the first step, the BSRI dimensions as a set significantly predicted variance in self-esteem scores, together accounting for 17.2 % of the variance in self-esteem, $F(2, 87)=9.06$, $p<0.001$, $R^2=0.172$. In this step, heterosexual cis men's BSRI agency scores were positively correlated with self-esteem, such that higher agency scores were associated with higher self-esteem scores, $b^*=0.255$, $t(87)=2.46$, $p=0.016$, $sr_{\text{agency(Step 1)}}=0.240$. BSRI communion scores were also positively correlated with self-esteem, such that higher communion scores were associated with higher self-esteem scores, $b^*=0.253$, $t(87)=2.45$, $p=0.016$, $sr_{\text{communion(Step 1)}}=0.239$.

In the second step, adding heterosexual cis men's AGT scores contributed 11.1 % new variance accounted for over and above step 1, which was a statistically significant change, $F(1, 86)=13.29$, $p<0.001$, $\Delta R^2=0.111$. In the second step, the

set of predictors accounted for 28.3 % of the variance in self-esteem, which was statistically significant, $F(3, 86)=11.33$, $p<0.001$, see Table 5. In the second step, BSRI agency was now marginally significantly but still positively correlated with self-esteem, $b^*=0.184$, $t(86)=1.86$, $p=0.066$, $sr_{\text{agency(Step 2)}}=0.170$. This finding is only partial support for Prediction 4. (Additionally, this finding is likely a result of slight collinearity between the BSRI predictors; see the Online Supplemental Materials.) BSRI communion was still significantly and positively correlated with self-esteem, $b^*=0.224$, $t(86)=2.31$, $p=0.024$, $sr_{\text{communion(Step 2)}}=0.210$ (see Table 5), which supported Prediction 5. (Yet, this finding too might be a result of slight collinearity between the BSRI predictors; see the Online Supplemental Materials.) Consistent with Prediction 6, AGT was also significantly and positively correlated with self-esteem, $b^*=0.344$, $t(86)=3.65$, $p<0.001$, $sr_{\text{typicality (Step 2)}}=0.333$, such that higher gender typicality scores were associated with higher self-esteem scores (see Table 5).

Queer Cisgender Women

Table 6 displays the regression coefficients and R^2 values for the queer cis women in both steps of the sequential regression. In the first step, the BSRI dimensions as a set significantly predicted variance in self-esteem scores, together accounting for 21.6 % of the variance in self-esteem, $F(2, 80)=11.00$, $p<0.001$, $R^2=0.216$. In this step, BSRI agency scores were positively correlated with self-esteem, such that higher agency scores were associated with higher self-esteem scores, $b^*=0.321$, $t(80)=3.18$, $p=0.002$, $sr_{\text{agency(Step 1)}}=0.315$. BSRI communion scores were also positively correlated with self-esteem, such that higher communion scores were associated with higher self-esteem scores, $b^*=0.280$, $t(80)=2.78$, $p=0.007$, $sr_{\text{communion(Step 1)}}=0.275$.

In the second step, adding queer cis women's AGT scores contributed 4.0 % new variance accounted for over and above step 1, which was a statistically significant change, $F(1, 79)=4.29$, $p=0.042$, $\Delta R^2=0.040$. In the second step, the set of predictors accounted for 25.6 % of the variance in self-esteem, which was statistically significant, $F(3, 79)=9.07$, $p<0.001$, see Table 6. In the second step, BSRI agency scores were still significantly and positively correlated with self-esteem scores, $b^*=0.366$, $t(79)=3.62$, $p=0.001$, $sr_{\text{agency(Step 2)}}=0.351$, which supported Prediction 4. Also, BSRI communion scores were still significantly and positively correlated with self-esteem scores, $b^*=0.213$, $t(79)=2.05$, $p=0.043$, $sr_{\text{communion(Step 2)}}=0.199$ (see Table 6), which supported Helgeson's arguments for Prediction 5. Consistent with Prediction 6, AGT was also significantly and positively correlated with self-esteem, $b^*=0.214$, $t(79)=2.07$, $p=0.042$, $sr_{\text{typicality (Step 2)}}=0.201$, such that higher gender typicality scores were associated with higher self-esteem scores (see Table 6).

Queer Cisgender Men

Table 7 displays the regression coefficients and R^2 values for the queer cis men in both steps of the sequential regression. In the first step, the BSRI dimensions as a set significantly predicted variance in self-esteem scores, together accounting for 41.2 % of the variance in self-esteem, $F(2, 48)=16.79$, $p<0.001$, $R^2=0.412$. In this step, BSRI agency was positively correlated with self-esteem, such that higher agency scores were associated with higher self-esteem scores, $b^*=0.602$, $t(48)=5.21$, $p<0.001$, $sr_{\text{agency(Step 1)}}=0.577$. BSRI communion was not significantly correlated with self-esteem, $b^*=0.109$, $t(48)=0.95$, $p=0.349$, $sr_{\text{communion(Step 1)}}=0.105$.

In the second step, adding queer cis men's AGT scores contributed 5.4 % new variance accounted for over and above step 1, which was a statistically significant change, $F(1, 47)=4.73$, $p=0.035$, $\Delta R^2=0.054$. In the second step, the set of predictors accounted for a total of 43.1 % of the variance in self-esteem, which was statistically significant, $F(3, 47)=13.64$, $p<0.001$, see Table 7. In the second step, BSRI agency was still significantly and positively correlated with self-esteem, $b^*=0.573$, $t(47)=5.11$, $p<0.001$, $sr_{\text{agency(Step 2)}}=0.545$, which supported Prediction 4. BSRI communion was still not significantly correlated with self-esteem, $b^*=0.132$, $t(47)=1.18$, $p=0.243$, $sr_{\text{communion(Step 2)}}=0.126$ (see Table 7), which is inconsistent with Helgeson's version of Prediction 5, but consistent with Whitley's version of Prediction 5. Consistent with Prediction 6, AGT was significantly and positively correlated with self-esteem, $b^*=0.234$, $t(47)=2.17$, $p=0.035$, $sr_{\text{typicality (Step 2)}}=0.232$, such that higher gender typicality scores were associated with higher self-esteem scores (see Table 7).

Discussion

This investigation examined the efficacy of using the adapted measure of adult gender typicality to account for variance in self-esteem for adults across majority and minority sexual orientations, all with cisgender self-categorization profiles. This relationship was examined in addition to the established measures of the personal endorsement of agency and communion traits, which can also account for variance in self-esteem. The results of this investigation showed three important findings. One, adult gender typicality shows similar internal consistency coefficients as compared to the measure used with children (see the Method), suggesting that this adapted measure loses none of its internal reliability when used with this new age group. Two, the adult gender typicality association with self-esteem can be detected for cis women and cis men irrespective of sexual orientation. This result suggests that gender typicality is indexing true variance in gender-related cognitions (see Tables 4, 5, 6 and 7)—in addition to mean-

level sexual orientation differences in gender typicality ratings (see Table 1). Three, the observed magnitude of the unique contribution of gender typicality to self-esteem was similar for three of the four participant groups. In particular, gender typicality ratings accounted for 3.9 % of the unique variance in self-esteem for heterosexual cis women, 4.0 % for queer cis women, and 5.3 % for queer cis men. For heterosexual cis men, however, the unique variance accounted for in self-esteem by gender typicality was much higher at 11 %. While there is no cogent explanation at present for why this particular pattern occurred, these findings are consistent with an intersectional feminist perspective that focuses on multiple forms of privilege for gender and sexual orientation (cf. Cronin and King 2010). Because heterosexual men have both gender identity and sexual orientation privilege in the United States, it is possible that for any other group (who has comparatively less privilege on either dimension) increasing gender typicality can only account for a certain portion of the total variance in self-esteem. This could happen because other factors that affect self-esteem, such as prejudice and discrimination, are at play more so for the less privileged gender identity and sexual orientation groups. Additional indirect support for this privilege-based reasoning comes from the fact that for both cisgender queer women and men, agency scores accounted for more than three times the unique variance in self-esteem as compared to gender typicality. Of course, future research should explore whether a privilege account is operating in this way.

A Face-Valid Gender-Related Cognition is Correlated with Self-Esteem for Adults

Given that gender typicality has face validity as being about part of the construct of gender itself (see Introduction), and from the finding that gender typicality was related to self-esteem across the cisgender sexual orientation samples, one can now make the strong argument that self-reported gender typicality is in fact related to well-being for adults. Until now, social/personality psychologists were unable to agree about whether gender-related cognitions were related to well-being for adults since the BSRI was, at best, controversial with respect to assessing gender stereotypes or personality traits, and, at worst, not measuring gender-related cognitions at all (see Abrahams et al. 1978; Helgeson 1994; Spence 1984; Spence and Helmreich 1981; Tobin et al. 2010). Yet, introducing the Adult Gender Typicality (AGT) scale provides researchers with a definitive answer that indeed a gender-related cognition (namely, self-perceived typicality) covaries with well-being for cisgender adults across sexual orientations.

Our findings also provide nuance to the Tobin et al. (2010) arguments about what is being measured by self-perceived gender typicality. Carver et al. (2004) showed that U.S. children and adolescents (in the 4th to 8th grades) who did not

expect heterosexual futures as adults had lower gender typicality scores than those who did expect heterosexual futures. However, those data were only prospective regarding adulthood. Our data are non-prospective regarding adulthood in that they are based on samples of adults. Our data show that queer-identified adults do indeed have lower gender typicality scores than heterosexual-identified adults (see Table 1). Yet, across both groups the variance around the central tendency was statistically equivalent (see the Group Comparisons section and the standard error estimates in Table 1). One parsimonious way to make sense of these patterns is to posit that gender typicality ratings may be social comparisons to a subset of individuals who share one's sexual orientation. As a starting point, queer-identified respondents, as a minority group, might downrate their typicality compared to heterosexual targets of the same gender identity (accounting for the mean difference). However, majority or minority status is constant once respondents consider their subset of same gender, same sexual orientation peers, so all that remains is the cognitive process that produces the range estimate within those peers. Alternatively, sexual orientation may simply be another influence on felt gender typicality that further influences this rating. In this case, all heterosexual and queer women, for instance, might start at a similar point when considering their gender typicality. But then, as each woman considers various information sources to adjust her typicality rating, queer women might use their self-knowledge as queer (which is non-typical in U.S. society) to further adjust their overall sense of typicality. Future research can (and should) explore these two possibilities and the factors that create similar variance estimates across different gender identity and sexual orientation groups.

Agency, Communion, and Self-Esteem

This investigation has also extended previous findings concerning the contribution of agency and communion trait endorsement as measured by the BSRI dimensions to self-esteem. Consistent with existing theory and research (Helgeson 1994; Spence 1984; Whitley 1983, 1984), agency trait endorsement accounted for significant variance in self-esteem for all groups except heterosexual cis women. These findings therefore illustrate the robustness of the agency contribution to self-esteem. There was admittedly mixed support for communion trait endorsement contributing to self-esteem. For heterosexual cis men and queer cis women, we observed both significant and meaningful (in terms of effect size) relationships between communion trait endorsement and self-esteem, which is consistent with Helgeson's (1994) arguments about communion and well-being. However, heterosexual cis women and queer cis men did not show these relationships. Thus, at present, there is only mixed evidence that communion traits are related to global self-esteem. These similarities and differences between the cisgender groups might be

considered as a continuation point for future research. Taken together, our findings support the additive model of agentic and communal trait endorsement (see Helgeson 1994) for self-esteem, but only for heterosexual cis men and queer cis women in our U.S. samples.

An interesting difference between the sexual orientation samples was that the BSRI agency dimension accounted for a larger share of the unique variance in self-esteem for the queer cis women (12.23 %) and queer cis men (29.70 %) as compared to heterosexual cis men (2.89 %). (Each respective value is slightly larger when removing the shared variance with communion scores from the outset, but the pattern is the same; see the Online Supplement). This result, though, is consistent with existing literature. Carlson and Steuer (1985) found that BSRI agency trait endorsement was positively correlated with self-esteem for gay men and lesbians. The fact that this specific relationship has a larger effect size for cisgender queer participants compared to cisgender heterosexual participants may further reflect that in order to combat minority stress experienced by having a marginalized sexual orientation identity (see Meyer 2003), cisgender queer participants use agentic traits as a protective factor. This reasoning is consistent with the general finding that higher levels of agency are associated with lower levels of stress controlling for participant gender (Nezu et al. 1986).

The Divergence of Gender Typicality and the BSRI Dimensions

A secondary goal of this investigation was to provide initial evidence as to whether the BSRI dimensions are measuring gender-related cognitions by correlating them with a face-valid measure of gender-related cognitions. In each of the two studies, we calculated zero-order correlation coefficients between gender typicality and BSRI agency and BSRI communion scores for each group. All these correlations were $r \leq 0.309$ (see Tables 2 and 3). If the BSRI dimensions and AGT were measuring the same construct redundantly, one would expect a much higher correlation between any pair of scores within a single gender group. For instance, for cis women, BSRI communion endorsement should correlate redundantly with their self-rated gender typicality; for cis men, BSRI agency endorsement should correlate redundantly with their self-rated gender typicality. However, our findings in this investigation provide direct support for the argument that the BSRI is not measuring information about gender typicality because, at most, these constructs share approximately 9.5 % of the variance (r^2 from listing above) between them—much too low to argue that they are redundant measurements of the same construct. Those findings notwithstanding, we acknowledge that the BSRI communion dimension in particular appears to be influenced by gender demographics—such that heterosexual cis men report less communion than heterosexual cis women—in our investigation (see Table 1) and in other studies

(e.g., Tate 2011). Additionally, queer cis women in this investigation had significantly higher agency endorsement ratings than queer cis men (see Table 1). These two findings are at least compatible with Helgeson's (1994) arguments that the BSRI may be measuring personality traits that U.S. culture has associated with gender categories (see also Spence 1984). In any case, whether the BSRI is measuring some other element of the multidimensional understanding of gender identity (Egan and Perry 2001; Tobin et al. 2010) is unclear at present. Future research can (and should) develop measures of contentment with gender assignment and felt pressure for gender stereotype conformity for adults in order to determine whether BSRI dimensions are measuring these constructs or some other information that covaries with gender self-categorization.

Limitations

As with most of the previously cited studies that have examined the question of whether personality traits and gender-related cognitions are associated with self-esteem, these data are correlational at one time slice. (Yet, as we noted in the Introduction, the Yunger et al. (2004) study was a longitudinal design.) Thus, one cannot argue for a direction of causality given these findings. For example, we do not know whether response biases or implicit theories are contributing to the observed associations. Additionally, age may be contributing to self-esteem, gender typicality, and BSRI trait endorsement. However, none of the previous investigations of BSRI dimensions and self-esteem that we cited in this article have included age as a covariate or predictor. Although we asked for this information at the very end of our survey, the design of our study did not allow inclusion of this variable with sufficient statistical power (because there were high missing data rates on this variable [approximately 20 % within each group]). Future work should assess age earlier in data collection (to avoid high missing data rates) to determine any contributions that this variable has to the results obtained in our investigation. These limitations notwithstanding, this investigation has provided the unique insight that self-perceived gender typicality appears to be a contributor to self-esteem for adults.

Future Directions

These results offer the possibility for lifespan researchers to examine the contours of gender typicality trajectories from childhood to adolescence to early adulthood now that a measure of adult gender typicality exists and has been validated. Lifespan personality research has suggested that a number of individual differences early in development persist into adulthood (e.g., Roberts and DelVecchio 2000). Self-perceived gender typicality may be one such individual difference. Using the two measures of gender typicality that exist (child and adult), one can investigate the consistency of the association between

gender typicality and self-esteem from childhood into adulthood in longitudinal or cross-sectional designs.

Future research should also build upon these results by examining whether transgender spectrum profiles show similar patterns to those documented here. To date, explorations of BSRI dimensions and well-being for transgender profiles have focused only on transgender women (Gonzalez et al. 2012), showing that endorsement of BSRI agency traits provided a protective factor against depressive symptoms. While the buffering of negative symptoms is important, it is unknown at present whether higher levels of agency trait endorsement covary with higher levels of self-esteem for trans women. To the extent that higher levels of agentic trait endorsement in particular might buffer against minority stress for sexual identity minorities (see above), it is reasonable to suggest that a similar relationship might occur for gender identity minorities—namely transgender profiles of self-categorization. Thus, one might reasonably predict that the unique variance accounted for by agentic trait endorsement in self-esteem for trans women and trans men might be similar to those estimates found for the queer cis women and cis men in our study, owing to (different types of) minority stress.

Additionally, to the extent that gender typicality contributed unique variance to self-esteem over and above the agency and communion trait endorsement for cis women and cis men (across sexual orientations), future studies should examine whether gender typicality can account for unique variance in self-esteem for trans women and trans men. If gender typicality is truly about one's current gender identity, then there is no a priori reason to argue for a different pattern. Using the methods described here and the results of our investigation, researchers have the tools to directly compare the results from future research with trans women and trans men to those of cis women and cis men to determine the similarities and differences based on the developmental profile of gender self-categorization. Importantly, future studies should also explore these relationships for genderqueer or non-binary participants (i.e., those who do not identify exclusively with a male or female identity; see Factor and Rothblum 2008; Tate 2014; Tate et al. 2013, 2014) because virtually no research exists on this population even though they comprise an almost equal portion of transgender spectrum respondents to trans women and trans men in recent demographic studies in the U.S. (Kuper et al. 2012; Tate et al. 2013). In sum, the strongest argument for gender typicality and self-esteem is to show that this relationship holds across every experience of gender self-categorization.

Coda

Our investigation has contributed a hitherto undocumented direct association between a face-valid dimension of gender-related cognitions and self-esteem for cisgender adults. This was accomplished by theoretically and methodologically

aligning the child and adult literatures to include self-reported gender typicality for adults. To the extent that similar processes as those observed here are at play in other cultures, this framework and these measurement instruments should replicate in samples outside the United States. Of course, cultural differences in understandings of gender typicality will provide a useful theoretical framework for predicting divergent patterns to the ones observed in these U.S. samples.

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Appendix

Gender Typicality (Women)

Instructions: Women have a range of feelings about how typical they are in comparison to other women. Please read each statement and indicate your agreement with it. Remember, there are no right or wrong answers, so please answer honestly.

1. I feel just like women my age.
2. I feel I fit in with other women.
3. I think I am a good example of other women.
4. I feel that what I like to do in my spare time is similar to what most women like to do in their spare time. I feel that the things I am good at are similar to what most women are good at.
5. I feel that the things I am good at are similar to what most women are good at.
6. I feel that my personality is similar to most women's personalities.

Gender Typicality (Men)

Instructions: Men have a range of feelings about how typical they are in comparison to other men. Please read each statement and indicate your agreement with it. Remember, there are no right or wrong answers, so please answer honestly.

1. I feel just like men my age.
2. I feel I fit in with other men.
3. I think I am a good example of other men.
4. I feel that what I like to do in my spare time is similar to what most men like to do in their spare time.
5. I feel that the things I am good at are similar to what most men are good at.
6. I feel that my personality is similar to most men's personalities.

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