

Indirectly Assessing Attitudes toward Gender Nonconformity using Prototypes

by

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THESIS APPROVAL PAGE

This is to certify that the thesis prepared by Tiana E. Krum entitled Indirectly Assessing Attitudes toward Gender Nonconformity using Prototypes has been approved by the thesis committee as satisfactorily completing the thesis requirements for the degree Master of Arts in Experimental Psychology.

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Abstract

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The present research was designed to indirectly measure attitudes toward physical and psychological gender nonconformity in others using prototyping. The types of descriptive attributes provided as well as the negative or positive valence of the attributes were used to determine participant attitudes toward gender nonconformity. A frequency distribution and associations rule analysis revealed the most commonly used attributes and the most important association rules for each prototype. Non-parametric tests revealed that there were significantly more negative attributes provided for all four prototypes than positive attributes, $p < .0001$. Additionally, chi square analyses revealed that across prototype type, there were significantly more negative attributes provided for the physical prototypes than for the positive prototypes, $\chi^2 = .760$, $p < .0001$; there was no significant difference in number of negative or positive attributes provided across prototype gender. Factors of prototype similarity and prototype evaluation were considered and were correlated with the direct *Attitudes toward Gender Nonconformity Scale* (ATGN) developed by Krum and Galupo (2010). Demographic factors were explored and implications for the field, including a theoretical development of our understanding of these attitudes and implications for effected communities such as the LGBT community were discussed.

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Indirectly Assessing Attitudes toward Gender Nonconformity using Prototypes

The present research was the first to measure attitudes toward gender nonconformity using the indirect measuring strategy of prototyping. Gender nonconformity can be expressed both psychologically, when a person behaves in a way or possesses personality traits that defy the typical gender stereotypes, and physically, when a person dresses or presents themselves in a manner that defies gender stereotypes. Although the psychological and physical components are related, they are distinct from one another. For the present study, attitudes toward gender nonconformity were measured using the process of prototyping, which involves assessing the positive or negative valence of descriptive attributes provided by the participants when describing psychological and physical prototypes for men and women. The relationship between these spontaneous responses was compared to responses on a recently developed, direct measure of attitudes toward gender nonconformity.

Gender Nonconformity

Gender nonconformity as it is currently defined in the psychology literature contains two components, 1) Psychological gender nonconformity: when an individual possesses both male and female characteristics / traits, or is neither predominantly feminine nor masculine (Schaffner, 2001); and 2) Physical gender nonconformity: when an individual's gender expression, or their expression of masculinity and femininity through their appearance is not concordant with the societal stereotypes associated with their sex and gender assigned at birth (Grossman, D'Augelli, Salter, & Hubbard, 2005). Although psychological and physical aspects of gender nonconformity are conceptually related they have been traditionally researched as separate concepts.

Psychological Gender Nonconformity

Early conceptualizations of gender nonconformity have focused almost entirely on psychological androgyny, the possession of both male and female characteristics. This research has largely portrayed androgyny as a positive quality in individuals. By refusing to conform to the pressure to prove their masculinity or femininity, androgynous individuals are seen as having a broader repertoire of possible responses to draw from in order to choose the response most appropriate for a particular situation (Burnette, 2006). Previous research has shown that psychological androgyny is related to higher self-esteem (Flaherty & Dusek, 1980; Spence, Helmreich & Stapp, 1975), identity achievement (Orlofsky, 1977), emotional intelligence (Guastello & Guastello, 2003), and self-actualization (Cristall & Dean, 1976). Additionally, psychological androgyny is associated with greater psychological well-being among both adolescent (Markstrom-Adams, 1989) and adult participants (Lefkowitz & Zeldow, 2006; O'Heron & Orlofsky, 1990).

Through the use of self-report measures such as the *Bem Sex Role Inventory* (BSRI; Bem, 1974) or the *Personal Attributes Questionnaire* (PAQ; Spence et al., 1975), the previous research has been able to detect a general pattern of androgyny as it relates to positive outcomes of psychological well-being; this raises the question of how people respond to those who behave in an androgynous way. Major, Carnevale, and Deaux (1981) found that, when given the opportunity to rate PAQ's of fabricated individuals, psychologically androgynous individuals were both better liked and were perceived as better adjusted than their gender-typed counterparts, when rated on a predetermined list of adjectives. Likewise, Green and Kenrick (1994) reported that among heterosexual

participants, target individuals with androgynous characteristics were preferred over gender-typed targets. These research studies, although measuring attitudes toward psychological androgyny, have failed to capture the physical component of gender nonconformity. Additional research is needed to allow the physical and psychological aspects of gender nonconformity to be measured simultaneously.

Physical Gender Nonconformity

More contemporary notions of gender nonconformity have expanded the understanding of androgyny beyond personality traits to address sex role behavior and gender expression (Orlofsky, Cohen & Ramsden, 1985; Wylie, Corliss, Boulanger, Prokop & Austin, 2010). Physical gender nonconformity, unlike psychological androgyny, is associated with a general pattern of negative outcomes such as greater amounts of parental rejection during childhood (Landolt, Bartholomew, Saffrey, Oram & Perlman, 2004), victimization and post-traumatic stress (D'Augelli, Grossman & Starks, 2006), bullying (Ploderl & Fartacek, 2009), and suicide (Fitzpatrick, Euton, Jones & Schmidt, 2005).

Furthermore, research addressing physical gender nonconformity has focused disproportionately on sexual and gender minorities (individuals who identify as lesbian, gay, bisexual and transgender) even though people in the sexual and gender majority (heterosexual and cisgender individuals) are still subject to discrimination and abuse based on gender nonconforming expressions (Horn, 2007). Noting that gender nonconformity is associated with different outcomes when manifested physically and psychologically, research comparing attitudes would be especially telling in that such

research would likely reveal a significant distinction between attitudes toward psychological androgyny and physical gender nonconformity.

Measuring Attitudes toward Gender Nonconformity

A recent measure, the *Attitudes toward Gender Nonconformity Scale* (ATGN) is the first direct measure to assess individual attitudes toward physical and psychological gender nonconformity in others (Krum & Galupo, 2010). This scale, composed of two subscales assesses attitudes by directly asking participants to respond to questions about men and women behaving and physically presenting in gender nonconforming ways. ATGN scores differ across participant gender in that women have more positive attitudes toward both types of gender nonconformity than do men, and all participants, regardless of gender, have more positive attitudes toward psychological gender nonconformity than physical gender nonconformity (Krum & Galupo, 2010). Additionally, ATGN scores differ across age and level of education in that younger participants and participants with at least some college education or higher have more positive overall attitudes toward gender nonconformity than do older participants or those participants who are less educated respectively (Krum & Galupo, 2010).

Although it is particularly useful for discovering patterns of attitudes across physical and psychological dimensions, the ATGN, as a direct measure, is limited in its ability to capture true attitudes. It is known that past experience may influence attitudes in a fashion not introspectively known by the participant (Greenwald & Banaji, 1995), and thus the indirect style of measurement has an advantage at capturing unconscious or true attitudes. Additionally, measuring attitudes indirectly in the past has revealed more drastic differences between men and women in responses as compared to similar direct

measures (Greenwald & Farnham, 2000); therefore our understanding of attitudes toward gender nonconformity could be greatly enhanced by using an indirect methodology.

Assessing Attitudes Indirectly

The studies done by Major and colleagues (1981) and by Green and Kenrick (1994) both assess participant attitudes using the indirect style of measurement by asking participants to provide attributes to describe individuals based solely on their PAQ results, which were actually fabricated. These studies, however, fail to capture both aspects of gender nonconformity by focusing solely on psychological androgyny. Conversely, the ATGN (Krum & Galupo, 2010) captures both aspects of gender nonconformity, but fails to do so in an indirect manner, which could be a vital strategy to capture true attitudes.

There are several strategies to measuring attitudes indirectly; the most popular of which is by using a latency based strategy such as the Implicit Association Test (IAT; Greenwald, McGhee & Schwartz, 1998), the Affective Priming Task (also called the Sequential Priming Task; Fazio, Sanbonmatsu, Powell & Kardes, 1986), the Semantic Priming Task (Wittenbrink, Judd & Park, 1997), or the Extrinsic Affective Simon Task (EAST; De Houwer, 2003), all of which are designed to measure an individual's attitudes based on their latency times in response to a variety of paired stimuli.

However, latency based strategies are not the only available options for measuring attitudes indirectly. Previous research on attitude measurement has suggested a number of other options including the Breadth-based Adjective Rating Task (BART; Steinman & Karpinski, 2009) or the Sentence-Stem Completion Task (Teasdale, Taylor, Cooper, Hayhurst & Paykel, 1995). More seasoned methods include the Error-Choice Method

(Hammond, 1948) or the Randomized Response Technique (Warner, 1965). Although all the previously mentioned indirect measurement strategies are viable options for attitude research, one option not yet mentioned may prove to be the most ideal for measuring attitudes toward gender nonconformity; the strategy of prototyping.

Prototyping as and Indirect Measure of Attitudes

An ideal strategy for measuring attitudes toward gender nonconformity would be one that allows for the measurement of physical and psychological aspects of gender nonconformity simultaneously as only one direct measure has done very recently. Additionally, this measuring strategy would need to be one that would not rely on latency-based measuring, as these strategies require a brief and quickly read description of concepts; a concept such as gender nonconformity is not one that is described briefly and would thus eliminate the effectiveness of the latency effect of the measure. Furthermore, the ideal strategy should not rely on visually or graphically presented stimuli as this may bias participants to consider only the physical aspects of gender nonconformity; even psychological representations may be interpreted as physical presentations.

Prototyping involves asking participants to think about their concept of a “typical” person who engages in a variety of behaviors or represents a specific group, and base their attitude response on this concept. This measurement strategy is ideal in that it does not rely on latency-based measuring; it does not require visual or graphical presentations of stimuli, and furthermore would not require any validation as a new measuring strategy as it has been successfully used in attitude research across a variety of topics. Topics such as attitudes toward marijuana use (Comello & Slater, 2010), attitudes

toward pregnancy prevention techniques (Gibbons, Gerrard & McCoy, 1995), attitudes toward disability groups (McCAughey & Strohmer, 2005), attitudes toward health-protective and health-risk behaviors (Rivis, Sheeran & Armitage, 2006), the influence of prototypes on perceptions of prejudice (Inman & Baron, 1996), conceptions of masculinity and femininity (Visser, 1996), descriptions of male and female stereotypes based on drawings (Robertson, Johnson, Benton, Janey, Cabral & Woodford, 2002), and gender-typification of religious identities (Gaston & Brown, 1991) have all been studied using the strategy of prototyping.

Furthermore, within the many topics studied using the strategy of prototyping, there is a range of different methods used. Some previous research studies have provided the prototype that they wish for participants to consider (Inman & Baron, 1996), while others have asked participants to consider their own conceptualization of the target prototype (Rivis et al., 2006; Rivis & Sheeran, 2003; Comello & Slater, 2010; McCaughey & Strohmer, 2005; Gibbons et al., 1995; Gaston & Brown, 1991; Visser, 1996). Some ask participants to choose from a predetermined list of attributes to describe the prototype target (Comello & Slater, 2010; Gibbons et al., 1995; Visser, 1996), while others allow participants to provide attributes in an open-ended fashion (Rivis & Sheeran, 2003; Inman & Baron, 1996; McCaughey & Strohmer, 2005; Gaston & Brown, 1991).

Additionally, previous research has shown that Prototype Favorability (how much one likes the prototype described; Haddock & Zanna, 1994) and Prototype Similarity (how similar one considers themselves to be to the prototype described; Rivis et al., 2006) play an important role in how participants rate their attitudes toward a prototype target. For Prototype Favorability, the more positively the participant views the target,

the more positive their attitudes will be toward the described behavior, even when that behavior is generally negative. For example, if a participant perceives the prototype of a marijuana user to be generally favorable, then their attitudes toward the behavior of using marijuana will be more positive (Comello & Slater, 2010). Additionally, for Prototype Similarity, the more similar the participant sees themselves compared to the prototype target, the more positive their attitudes will be toward the described behavior, even when that behavior is generally negative (Rivis & Sheeran, 2003; Gibbons et al., 1995; Rivis et al., 2006). For example, if a participant sees themselves as very similar to a person who exercises three or more times per week, they will view such exercise behavior as more positive than if they viewed themselves as very dissimilar to that type of person (Rivis & Sheeran, 2003).

The strategy of prototyping is one that could be easily adapted to address attitudes toward gender nonconformity. A researcher could easily develop prototypes, or frame the materials so that the participant would develop their own prototypes of a gender nonconforming individual before assessing attitudes. Furthermore, the additional factors of prototype favorability and prototype similarity could be useful in understanding attitudes toward gender nonconformity, in that the more a participant identifies with or positively evaluates a gender nonconforming prototype, the more positive their attitudes may prove to be.

The Present Study

Previous research on attitudes toward psychological androgyny has been successful, but has neglected to include measurement on the physical aspect. Currently, there exists only one previous measure aimed at assessing attitudes toward psychological

and physical gender nonconformity simultaneously, the ATGN, a direct measure of these attitudes. Although this method of measuring attitudes is valid and practical, the sensitive topic of the attitude object could easily cause individuals to respond in a more socially desirable manner; causing their attitudes to be measured as more accepting than they actually are. Furthermore, the most important finding resulting from the development of this measure was the distinctiveness between the psychological and physical components of gender nonconformity. Measuring these components in a direct way provides only a limited examination of them theoretically.

By addressing these attitudes indirectly, we may be better able to assess true attitudes, or attitudes not explicitly expressed. Additionally, by following the strategy of the ATGN, and measuring the physical and psychological components of gender nonconformity distinctly but in an indirect way, we will be able to further develop our theoretical understanding of these attitudes and how they are formed. A review of previous research on indirect styles of attitude measurement has suggested that prototyping may be the most efficient way to measure attitudes of this nature. Therefore, the present study is designed to fill the gaps in previous research on the topic by creating an indirect measurement of attitudes toward psychological and physical aspects of gender nonconformity using the prototyping method of measurement. A measurement strategy of this type is hoped to reveal the patterns of true attitudes toward gender nonconformity and is hoped to be used in future research on attitudes and gender stereotypes.

In order to assess patterns of responses, a frequency distribution and associations rule analysis will be conducted across all four prototypes to discern the most commonly used attributes and associations rules for each. Chi square analyses on attribute valences

will determine whether gender nonconformity is viewed more positively or negatively overall, as well as whether it is viewed more positively or negatively across prototype gender (male versus female) and prototype type (physical versus psychological). It is expected that all prototypes will be viewed more negatively than positively, male prototypes will be viewed more negatively than female prototypes, and physical prototypes will be viewed more negatively than positive prototypes; in support of previous research (Landolt et al., 2004; D'Augelli, Grossman & Starks, 2006; Ploderl & Fartacek, 2009; Fitzpatrick et al., 2005; Krum & Galupo, 2010). Correlational analyses will be conducted to determine relationships between factors of prototype similarity, prototype evaluation, the ATGN, and demographic variables. It is expected that the ATGN will be significantly correlated with prototype similarity, prototype evaluation as well as demographic variables gender, sexual orientation, religiosity, and level of education, in support of previous research (Krum & Galupo, 2010).

Method

General

This study was conducted using an online survey, which was posted on two social science websites: The Social Psychology Network (<http://www.socialpsychology.org/>) and Psychological Research on the Net (<http://psych.hanover.edu/Research/exponnet.html>). Participants were able to access the survey by visiting the two social science websites of their own accord and were not offered compensation for their participation. Participants completed general demographic information and a variety of questions on a Likert-type scale. They were also asked to spontaneously provide personality attributes about a variety of individuals

and rate the valence of these attributes. The survey was completed individually through access to a secure server and all responses are anonymous.

Participants

Participants were 110 adult individuals, all current residents of the United States. They were 23.6% male ($n = 26$), 74.5% female ($n = 82$) and 1.8% identified as transgender (specifically, transguy and transgirl; $n = 2$). They ranged in age from 18- 73 years old with a mean age of 28.83 years. Participants represented 34 states across the country, with all regions of the continental United States being represented; Maryland ($n = 13$) and Pennsylvania ($n = 11$) were the two states with the largest amount of representation. The majority of participants identified as White (74.5%), with 8.2% identified as Hispanic, 5.5% identified as Black, 5.5% identified as Bi / Multi-racial and 3.6% as Asian / Asian American. The remaining 2.7% of the sample identified as Native American / Native Alaskan (.9%), Pacific Islander (.9%) or some other racial category not provided (.9%).

Additionally, the majority of participants identified as Heterosexual (straight; 79.1%), with 19.1% identifying as a Sexual Minority (gay / lesbian, bisexual, queer etc.), and 1.8% identified with some other sexual orientation label not provided. Furthermore, the largest religious identities represented were Christian (25.5%), Spiritual, but not part of an organized religious group (23.6%), and Catholic (17.3%). Finally, the majority of participants were educated past the high school level with 37.3% having at least some college education, 20% having obtained a college degree, and 11.8% having obtained a graduate degree.

Measures

Gender Nonconformity Prototype Task. Attitudes toward gender nonconformity were measured indirectly using free recall prototyping. Participants were given the following definition of a prototype from Gibbons et al. (1995): “The following question concerns your images of people. For example, we all have ideas about what typical movie stars are like or what the typical grandmother is like. We might think of the typical movie star as being pretty or rich and the typical grandmother as sweet and frail. We are not saying that all movie stars or all grandmothers are exactly alike, but rather that many of them share certain characteristics.”

Participants were asked to free recall the first five to seven personality attributes or adjectives that came to mind when they thought of each of four gender nonconforming prototypes; one psychological gender nonconforming female, one psychological gender nonconforming male, one physical gender nonconforming female and one physical gender nonconforming male (see Appendix A). After producing their five to seven attributes or adjectives, participants were instructed to rate each attribute as either positive or negative. To reduce order effects, participants were presented with each prototype in a random order.

Prototype favorability was assessed using the evaluation thermometer (Haddock & Zanna, 1994) where participants were asked to, “Indicate how favorable your impression is of the type of person your age who engages in each of the given [gender nonconforming] behaviors” on an 11-point scale 1 (*extremely unfavorable*) to 11 (*extremely favorable*). For each of the four prototypes, participants were asked to think for a moment about the characteristics they chose as describing that type of person before

giving their evaluation rating. Participants gave a separate evaluation rating for each of the four prototypes.

Prototype similarity was assessed by the responses to “In general, how similar are you to the type of person your age who embraces each of the given [gender nonconforming] characteristics?” on a 7-point likert-type scale, 1 (*not at all similar me*) to 7 (*very similar to me*; Ravis et al, 2006). Participants provided a separate rating of similarity to each of the four prototypes.

Attitudes toward Gender Nonconformity Scale (ATGN; Krum & Galupo, 2010). Attitudes toward gender nonconformity were measured directly using the Attitudes toward Gender Nonconformity scale (Krum & Galupo, 2010). The ATGN was designed to measure participants’ individual attitudes toward psychological and physical aspects of gender nonconformity in others. This ten-item scale is composed of two subscales; five items are designed to measure attitudes toward physical gender nonconformity for both men and women and five items are designed to measure psychological gender nonconformity for both men and women. Four of the ten items are reverse scored. Participants chose a number on a five-point likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*) to express their level of agreement with each of the ten items. Scores can range from 10 – 50 with lower scores denoting more negative attitudes toward gender nonconformity and higher scores denoting more positive attitudes toward gender nonconformity (Krum & Galupo, 2010).

Previous research on the ATGN has established the reliability and validity of this scale. The internal consistency estimate for this scale was $\alpha = .773$. This scale is also significantly correlated with the Modern Homonegativity Scale for Gay Men ($r = -.57$),

the Modern Homonegativity Scale for Lesbian Women ($r = -.57$), the Modern Sexism Scale ($r = -.44$), the Religious Fundamentalism Scale ($r = -.43$), political conservatism ($r = -.43$), and level of education ($r = .25$; Krum & Galupo, 2010).

Demographic Variables. Participants were asked to respond to the following demographic questions: United States residency location by state, current age, sex, highest or current level of education, racial identity, religious identity, level of religiosity, and sexual orientation.

Filler Questions. Two questionnaires were used as fillers and were not analyzed. They were meant to encourage the participants to think about something other than gender nonconformity attitudes so that they would not determine the purpose of the study, which could sway their answers on the direct measure. The Life Orientation Test (LOT; Scheier & Carver, 1985) was designed to measure individual levels of optimism and pessimism using a self-report, ten-item, likert type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The Oxford Happiness Scale (Hills & Argyle, 2002) was designed to measure an individual's current level of general happiness using a self-report, 29-item, likert type scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

Procedure

Participants were able to access the survey by logging on to one of the two social science websites where the survey was posted. The websites could be accessed from any computer with internet access at any time. Participants first agreed to the cover letter consent form which provided the contact information of the primary researcher, and then they completed the four prototype measures including the ratings of valence, prototype evaluation and prototype similarity in the form of free response boxes and rated scales.

Next, participants completed the Life Orientation Test (Scheier & Carver, 1985), the Oxford Happiness Scale (Hills & Argyle, 2002), and the ATGN (Krum & Galupo, 2010) via likert-type ratings. Lastly, participants selected answers to the demographic variables. Once complete, participants were again provided with the contact information of the primary researcher, briefed on the true nature of the study and thanked for their participation.

Results

Characterizing Gender Nonconformity Prototypes Across Type and Gender

A frequency distribution of attributes used to describe each of the four prototypes was conducted. Initially, attributes were manually combined (to account for misspellings or differences of capitalization on the part of the participant) to reveal over 280 unique attributes provided for each prototype; 289 for psychologically gender nonconforming men, 317 for psychologically gender nonconforming women, 297 for physically gender nonconforming men, and 300 for physically gender nonconforming women. The most commonly used attributes (attributes used ten or more times) were considered the most important in the understanding of the formation of attitudes. Although it was expected that there would be a great mixture in the type of attributes used for each prototype, it was found that attributes that matched the prototype type were used consistently with few exceptions (for example, in describing a psychologically gender nonconforming prototype, participants used largely psychological rather than physical attributes in their descriptions).

Psychological Gender Nonconformity

For psychological gender nonconformity in men, the three most commonly used attributes were Emotional ($n = 26$), Gay / Homosexual ($n = 23$) and Sensitive ($n = 21$). In addition to a frequency distribution, an association's rule analysis was conducted on the attributes for each prototype to reveal association patterns for each. For psychological gender nonconformity in men, there were four important associations as determined by having the highest confidence percentage, lift ratio and support, see Table 1. For example, the rule *weak* => *sensitive*, support = 6, lift = 4, confidence = 54.55% shows that the attribute *sensitive* was provided immediately after the attribute *weak* six times, and that *sensitive* was provided with *weak* in other orders 54.55% of the time; showing that participants associated these two attributes together and specifically that participants provided *weak* first, and then associated being *weak* with being *sensitive*.

For psychological gender nonconformity in women, the three most commonly used attributes were Loud ($n = 23$), Masculine ($n = 18$) and Gay / Homosexual ($n = 18$). Associations rule analysis revealed only two important rules, *strong* => *independent*, support = 3, lift = 9.17, confidence = 50%, and its converse which occurred with the same support, lift and confidence. This rule suggests that *independent* was used immediately after *strong* three times and that *independent* was provided with *strong* in other orders 50% of the time. Similarly, *strong* was used immediately after *independent* three times and also was provided with *independent* in other orders 50% of the time. The fact that one rule was equally important in its converse suggests that participants associated these two attributes closely, and that *strong* and *independent* were associated with each other regardless of which was provided first.

Physical Gender Nonconformity

For physical gender nonconformity in men, the three most commonly used attributes were Feminine ($n = 28$), Skinny / Thin ($n = 27$) and Gay / Homosexual ($n = 19$). Associations rule analysis revealed only one important rule, *long hair* => *short*, support = 6, lift = 4.4, confidence = 60%. This rule suggests that participants associated *long hair* with being *short*, and used *short* immediately after *long hair* six times; *short* was used with *long hair* in other orders 60% of the time.

For physical gender nonconformity in women, the three most commonly used attributes were Short hair ($n = 32$), Unshaven ($n = 31$) and Muscular / Muscled ($n = 18$). Associations rule analysis revealed a shocking 12 important rules as determined via support, lift ratio and confidence percentage, see Table 2. For example, *large* => *hairy*, support = 3, lift = 8.46, confidence = 100%. This rule suggests that while the attribute *hairy* was provided immediately after the attribute *large* only three times, that *hairy* was provided with *large* in other orders 100% of the time. This suggests that *large* and *hairy* were very strongly associated with one another in that every time *large* was provided, *hairy* was also provided.

Chi Square Analyses

Non-parametric tests were conducted to examine the number of negative versus positive responses used across prototypes. Additional analyses were conducted to examine the number of positive versus negative prototypes used across prototype type and prototype gender as well as the amount used to describe sexual identity.

Gender Nonconformity Prototypes are More Negative

Participants provided a positive or negative valence rating for each attribute provided, so significant differences in the amount of positive or negative ratings were assessed through non-parametric tests and chi square analyses. Non-parametric tests revealed that there were significantly more negative responses (56.46% or $n = 1433$) provided for all four prototypes than there were positive responses (43.54% or $n = 1105$) and this difference was statistically significant, $p < .0001$; showing that in general, gender nonconformity was viewed more negatively than positively.

Chi square analyses were conducted to determine how attitudes varied more specifically across prototype type and prototype gender. These analyses revealed no significant difference across prototype gender in relation to the number of negative responses provided by participants, with the male prototypes receiving negative responses 57.32% of the time ($n = 724$) and the female prototypes receiving negative responses 55.61% of the time ($n = 709$), $\chi^2 = .760$, $p = .383$; in other words the male and female prototypes received relatively the same amount of positive and negative attributes to describe them. However, there was a significant difference in the number of negative attributes provided across prototype type (physical versus psychological) in that the physical prototypes were given significantly more negative attributes (60.35%, $n = 758$) than the psychological prototypes (52.65%, $n = 675$), $\chi^2 = 15.295$, $p < .0001$, see Figure 1.

Sexual Identity and Gender Nonconformity Prototypes

As noted via the frequency distribution of the attributes provided for each prototype, Gay / Homosexual (or other epithets that mean gay / homosexual) were used

frequently for all four prototypes. This association was further explained by considering whether participants viewed Gay / Homosexual in positive or negative patterns across prototype type and gender. Chi square analyses revealed that, of those times that Gay / Homosexual was used, there was a significant difference in the positive or negative ratings across prototype gender in that Gay / Homosexual was used in a negative way to describe males (63.41%, $n = 26$) significantly more than it was used to describe females in a negative way (54.17%, $n = 13$), $\chi^2 = 4.721$, $p = .03$, see Figure 2. There was no significant difference in the way Gay / Homosexual was used across prototype type, $\chi^2 = .376$, $p = .540$, showing that Gay / Homosexual was just as likely to be used in a negative way for psychological (48.78%, $n = 20$) and physical (55.88%, $n = 19$) prototypes.

Correlational Analyses

Correlational analyses were conducted to examine the relationship between Prototype Similarity, Prototype Evaluation, and the demographic variables. Additional analyses were conducted to examine the relationship between the ATGN (the direct measure of attitudes toward gender nonconformity), and Prototype Similarity, Prototype Evaluation and the demographic variables.

Prototype Evaluation and Prototype Similarity Show Strong Relationships

Correlational analyses revealed that Total Evaluation and Total Similarity were significantly related, $r(108) = .635$, $p < .01$, meaning that the more similar the participants considered themselves to be to each prototype the more positively they evaluated each prototype (See Table 3). Furthermore, significant correlations existed on the demographic variables (Religion, Religiosity, Sexual Orientation, Age, Race, Gender, or Level of Education) and total scores on both Prototype Evaluation and Prototype

Similarity. Prototype Evaluation was significantly related to Sexual Orientation, $r(108) = .195, p = .021$, showing that people who considered themselves to be sexual minorities evaluated the prototypes more positively than those who considered themselves heterosexual. Prototype Evaluation was also significantly related to Religiosity, $r(108) = -.407, p < .0001$ showing that people who considered themselves not very religious had more positive evaluations of the prototypes than those who considered themselves very religious. Finally, Prototype Evaluation was significantly related to Education, $r(108) = .241, p = .006$, showing that people with higher levels of education evaluated the prototypes more positively than participants had lower levels of education.

Prototype similarity was also significantly related to Sexual Orientation, $r(108) = .298, p = .001$ showing that people who considered themselves to be sexual minorities rated the prototypes as more similar to themselves than did people who considered themselves heterosexual. Prototype Similarity was also significantly related to Religiosity, $r(108) = -.190, p = .024$, showing that people who considered themselves not very religious rated the prototypes as more similar to themselves than did people who considered themselves very religious. Finally, Prototype Similarity was significantly related to Education, $r(108) = .257, p = .003$, showing that people with higher levels of education rated the prototypes as more similar to themselves than participants who had lower levels of education.

Relationships between Direct Measure versus Prototypes

Additional correlational analyses were conducted to determine the relationship between the direct ATGN and the overall evaluation and similarity ratings of each prototype. The ATGN was significantly correlated with both Prototype Evaluation (r

(108) = .172, $p = .036$) and Prototype Similarity (r (108) = .174, $p = .035$), showing that the people who evaluated the prototypes positively also had positive attitudes toward gender nonconformity and similarly, those who rated the prototypes as more similar to themselves also had positive attitudes toward gender nonconformity. However, there was no significant correlation between overall scores on the ATGN and Religion, Religiosity, Sexual Orientation, Age, Race, Gender, or Level of Education.

Discussion

The present research was the first to describe attitudes toward gender nonconformity using prototype methodology. It was also instrumental to characterizing differences in these attitudes across prototype type (physical and psychological) and prototype gender (male and female). Results of this research support previous research and suggest that physical gender nonconformity is viewed as more negative overall than psychological gender nonconformity (Landolt et al., 2004; D'Augelli, Grossman & Starks, 2006; Ploderl & Fartacek, 2009; Fitzpatrick et al., 2005) regardless of gender (Krum & Galupo, 2010), but interestingly, patterns emerged in the types of attributes provided across prototype type and prototype gender.

Although physical gender nonconformity was viewed as more negative overall, both types of prototypes (physical and psychological) were described using attributes that largely matched them in type; in other words physical attributes were used to describe the physical prototype and psychological attributes were used to describe the psychological prototype with relatively little overlap. Additionally, there were a greater amount of “important” attributes (attributes provided 10 or more times) used to describe physical gender nonconformity for both genders than psychological gender nonconformity for

both genders, suggesting that participants had a much more broad conceptualization of psychological gender nonconformity and a much more narrow conceptualization of physical gender nonconformity (one based off fewer attributes). These findings highlight the distinction between these two components and demonstrate the necessity to consider the physical aspect of gender nonconformity in measuring these attitudes.

Across gender, interesting patterns emerged for both male and female targets. For female targets, the physical prototype was of particular interest, especially as it was viewed via the associations rule analysis because this prototype had an astonishing 12 important association rules, far more than any of the other prototypes. Although previous research has suggested that the gender stereotypes for men are more strict than the stereotypes for women in that gender nonconformity in women is seen as more positive than in men (Krum & Galupo, 2010) and that lacking certain important attributes is seen as more acceptable in women than in men (Moss-Racusin, Phelan & Rudman, 2010), the fact that there were so many association rules for the physical prototype for women suggests a unique quality about this prototype in particular. Because there were such a large number of association rules, several of which were converses of each other and others of which shared many of the same attributes suggests that the most commonly used attributes were strongly associated with each other; although there was a large variety of attributes provided overall, attitudes were being formed based on very few, suggesting that the stereotype of physical gender nonconformity in women is especially consistent in that many people base their attitudes on the same, relatively few attributes. This finding further supports how important the role of physical stereotypes is in our

formation of attitudes around gender nonconformity and additionally distinguishes attitudes based on psychological versus physical features.

For the male target, it was especially novel in the way Gay / Homosexual was used as an attribute to describe the prototypes. Gay / Homosexual was used as a negative attribute significantly more times to describe male versus female targets. This finding illustrates how important of a role homophobia plays in our understanding of gender stereotypes, and explains why these stereotypes persist so unfailingly (Basow & Johnson, 2000; Harding, 2007). Because the identity of gay still carries a negative stigma in American society, the threat of being labeled gay is a strong motivator to conform to gender stereotypes to avoid such labeling by others. The findings from this study suggest that this is especially relevant to men in that threat of being labeled gay in a negative way is significantly more likely for men than for woman; this may further explain why gender stereotypes have been found to be more strict for men than for women in the past.

Overall, there was a great deal of consistency in participant responses regardless of prototype type or prototype gender. Despite the large variety of attributes used to describe each prototype, many attributes were used repeatedly; up to nearly 30% of participants using the same attributes in some cases. This consistency suggests that when it comes to attitudes toward gender stereotypes, there are still certain selections of attributes that are particularly salient and central to the concept of gender nonconformity.

Furthermore, as in past research, prototype similarity was significantly, positively related to prototype evaluation; thus the more similar a person considered the prototype to be to themselves the more positively they evaluated that prototype. These findings support previous research that attitudes can be altered by creating similarities between the

participant and the attitude object (Rivis et al., 2006), and it seems that gender nonconformity is no exception. Perhaps by finding ways to create similarities or at least making similarities salient can improve the attitudes of those with a relatively negative view of gender nonconformity. For example, asking participants to think of a gender nonconforming person they have met before and then asking the participants to think of something they have in common with that person before giving their evaluation of that person may increase overall attitudes toward gender nonconformity more generally.

Additionally, prototype similarity and prototype evaluation were also significantly related to level of religiosity, education and sexual orientation. However, despite the statistical significance, the relatively small effect sizes may indicate that they are not particularly socially significant. In other words, although they do provide support for the argument that increased education is especially important to the formation of positive and accepting attitudes, they are not all that surprising. Overall, the present study revealed a rich, qualitative understanding of our formation of attitudes toward gender nonconformity not previously found in past literature. Although how positively or negatively we perceive gender nonconformity in others is complex, in that participants provided a wide range of attributes to describe the prototype targets, these attitudes still seem to subscribe heavily to gender stereotypes. The present study also provided a clearer understanding of the role of homophobia in the formation of our attitudes toward gender nonconformity.

Limitations and Directions

Surprisingly, the direct measure of attitudes toward gender nonconformity, the ATGN, despite being significantly correlated with prototype evaluation and prototype similarity (although again note the relatively small effect sizes), was not significantly

correlated with any of the demographic variables, which is contrasting with previous research on this measure (Krum & Galupo, 2010). This may be explained, however, in that this measure was presented to the participants at the end of the survey, after they had already responded to the four prototype tasks and separate ratings of prototype similarity and prototype evaluation for all four prototypes. Even though there were unrelated filler questions in between the prototypes and the ATGN, participants may have guessed the purpose of the survey at that point and responded more positively than they normally would.

Additionally, the author intended for participants to respond with one-word attributes to each prototype, and although this was implied in the instructions to the participants, it was not explicitly stated. This vagueness in the instructions made some participants respond with “attributes” that were actually short phrases, making these attributes difficult to combine with other attributes to reduce the total number of attributes down; the author could not infer a one-word meaning out of multiple word phrases without potentially making incorrect assumptions of participant intention. This may have contributed to the very large number of attributes provided for each prototype. Future research should be aimed at making this instruction more clear, as it would likely affect the overall number of attributes provided for each prototype.

Finally, the sample was strongly overrepresented by women. One would speculate that attitudes of women are more accepting and flexible than are attitudes of men and thus it is likely that results would differ (e.g. be more negative) had more men been included in this sample. Future research should aim to have a more equal distribution across participant gender.

Despite its limitations, this research provides many directions for future research.

First, this study showed that the stereotypes and expectations for women in terms of physical gender nonconformity are perhaps more strict than was originally thought.

Future research can and should continue to examine the distinction between psychological and physical gender nonconformity, and specifically the distinction of psychological and physical gender nonconformity in women. Additionally, and most importantly, the connection this study highlights between homophobia and gender stereotypes is especially important. Future research should be designed around increasing positive attitudes toward gay men and lesbian women as an increase in these attitudes would likely increase positive attitudes toward gender nonconformity more generally.

Table 1: Psychologically Gender Nonconforming Prototypes: Attribute Frequencies and Associations

| Prototype (total # of attributes) | Attributes Used (# of times used) | % of total participants <i>N</i> = 110 | Associations (# of times occurred) | Lift Ratio | Confidence % |
|--------------------------------------|--------------------------------------|--|---------------------------------------|---------------|-----------------|
| Psychological GNC in Men (289) | Emotional (26) | 23.64 | Weak => Sensitive (6) | 4 | 54.55 |
| | Gay / Homosexual (23) | 20.91 | Passive => Emotional (4) | 4.19 | 80 |
| | Sensitive (21) | 19.09 | Quiet => Emotional (4) | 2.99 | 57.14 |
| | Physically weak (17) | 15.45 | Sissy => Gay (3) | 5.89 | 75 |
| | Feminine (14) | 12.73 | | | |
| | Caring (11) | 10 | | | |
| Psychological GNC in Women (317) | Loud (23) | 20.91 | Strong => Independent (3) * | 9.17 | 50 |
| | Masculine (18) | 18.36 | | | |
| | Gay / Homosexual (18) | 18.36 | | | |
| | Strong (16) | 14.55 | | | |
| | Aggressive (16) | 14.55 | | | |
| | Tomboy (13) | 11.81 | | | |
| | Independent (12) | 10.89 | | | |
| | Outspoken (11) | 10 | | | |
| | Butch (10) | 9.09 | | | |
| | Rude (10) | 9.09 | | | |

*Occurs conversely at equal frequency, ratio and confidence

Table 2: Physically Gender Nonconforming Prototypes: Attribute Frequencies and Associations

| Prototype (total # of attributes) | Attributes Used (# of times used) | % of total participants <i>N</i> = 110 | Associations (# of times occurred) | Lift Ratio | Confidence % |
|--------------------------------------|--------------------------------------|--|---------------------------------------|---------------|-----------------|
| Physical GNC in Men (297) | Feminine (28) | 25.45 | Long hair => Short (6) | 4.4 | 60 |
| | Skinny/Thin (27) | 24.55 | | | |
| | Gay/Homosexual (19) | 17.27 | | | |
| | Short (18) | 16.36 | | | |
| | Long hair (18) | 16.36 | | | |
| | Weak (17) | 15.45 | | | |
| | Soft (13) | 11.82 | | | |
| | Physically small (12) | 10.9 | | | |
| | Hairless (11) | 10 | | | |
| | Girly (10) | 9.09 | | | |
| | Makeup (10) | 9.09 | | | |
| | Tight clothes (10) | 9.09 | | | |
| Physical GNC in Women (300) | Short hair (32) | 29.09 | Masculine => Butch (6) | 3.75 | 54.55 |
| | Unshaven (31) | 28.18 | Strong => Butch (5) | 3.82 | 55.56 |
| | Muscular/Muscled (18) | 16.36 | Muscular => Hairy (5) | 4.7 | 55.56 |
| | Butch (17) | 15.45 | Strong => Manly (5) | 4.7 | 55.56 |
| | Masculine (17) | 15.45 | Tall => Hairy (5) | 7.05 | 83.33 |
| | No makeup (16) | 14.55 | Short hair, Tall => Hairy (3) | 8.46 | 100 |
| | Manly (15) | 13.64 | Large => Hairy (3) | 8.46 | 100 |
| | Tall (13) | 11.82 | No make-up => Short hair (3) | 6.11 | 100 |
| | Gay/Homosexual (13) | 11.82 | Broad shouldered => Tall (3) * | 13.75 | 75 |
| | Baggy clothes (12) | 10.91 | Hairy => Tall (3) * | 13.2 | 60 |
| | Dirty/Unclean (10) | 9.09 | | | |
| | Big (10) | 9.09 | | | |

*Occurs conversely at equal frequency, ratio and confidence

Table 3: Correlations of ATGN, Prototype Evaluation, and Prototype Similarity

| | ATGN Total | Prototype Evaluation | Prototype Similarity | Religion | Religiosity | Sexual Orientation | Age | Race | Gender | Level of Education |
|-------------------------|---------------|-------------------------|-------------------------|----------|-------------|-----------------------|------|-------|--------|-----------------------|
| ATGN Total | 1 | .172* | .174* | -.042 | .004 | .033 | .040 | -.118 | .005 | -.009 |
| Prototype Evaluation | | 1 | .635** | -.101 | -.407** | .195* | .076 | -.038 | .062 | .241** |
| Prototype Similarity | | | 1 | -.141 | -.190* | .298** | .077 | .005 | .109 | .257** |

* Significant at the .05 level

** Significant at the .01 level

Figure 1: Valence of Attributes Provided Across Prototype Type

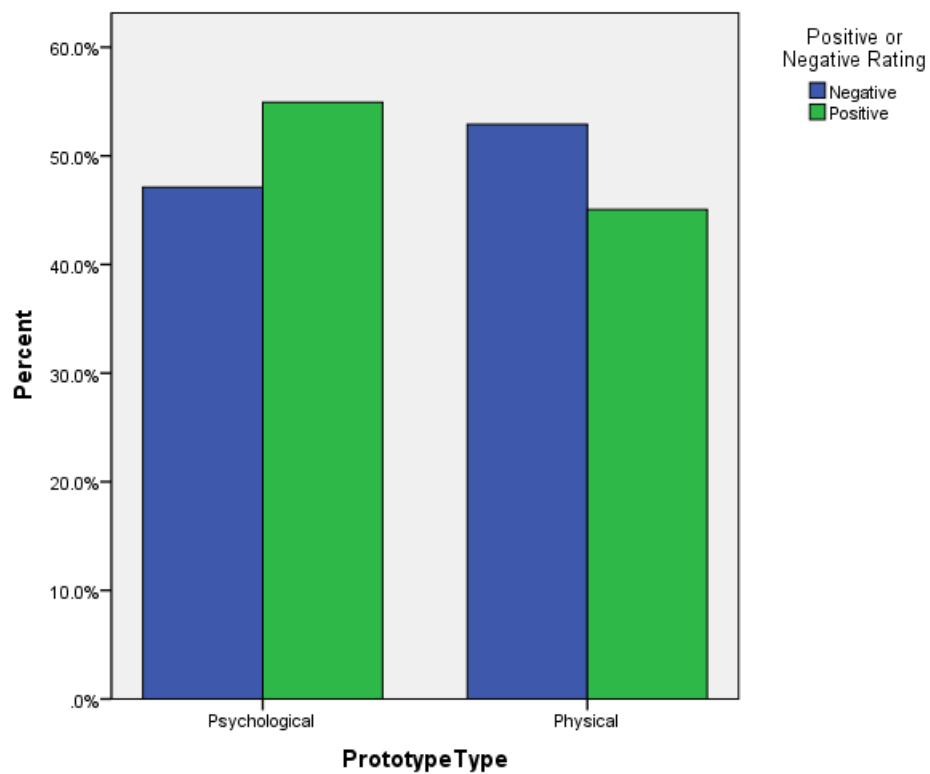
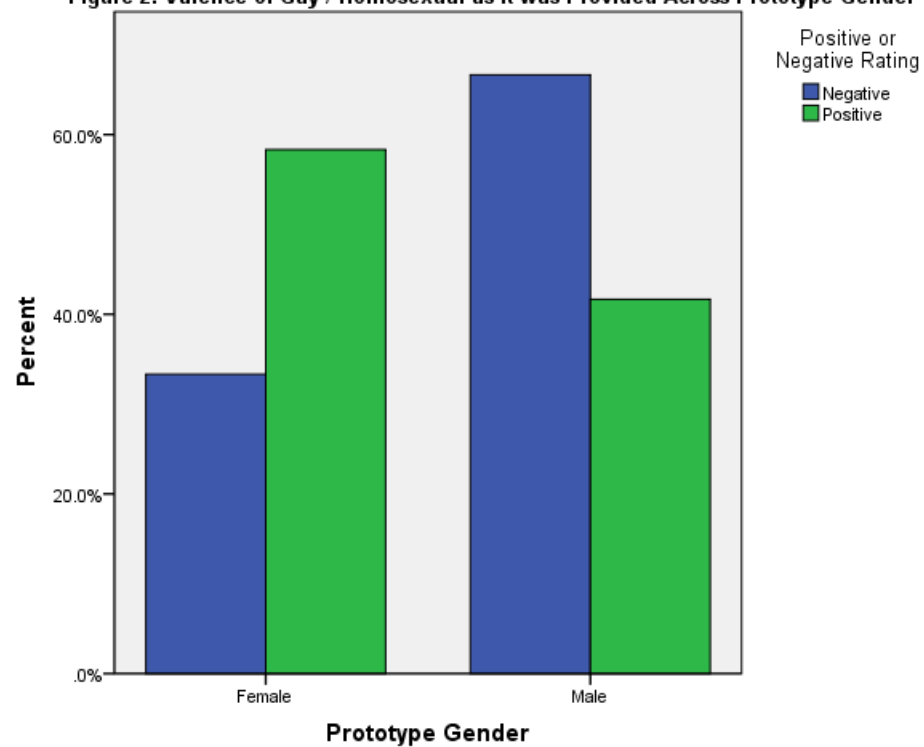


Figure 2: Valence of Gay / Homosexual as it was Provided Across Prototype Gender



Appendix A

Gender Nonconformity Prototype Prompts

Psychological Gender Nonconforming Woman:

Think about a typical woman who does not behave or act in traditionally feminine ways and list the first 5-7 attributes or adjectives that come to mind.

Psychological Gender Nonconforming Man:

Think about a typical man who does not behave or act in traditionally masculine ways and list the first 5-7 attributes or adjectives that come to mind.

Physical Gender Nonconforming Woman:

Think about a typical woman whose physical appearance does not present in traditionally feminine ways and list the first 5-7 attributes or adjectives that come to mind.

Physical Gender Nonconforming Man:

Think about a typical man whose physical appearance does not present in traditionally masculine ways and list the first 5-7 attributes or adjectives that come to mind.



EXEMPTION NUMBER: 12-0X01

To: Tiana Krum
 From: Institutional Review Board for the Protection of Human
 Subjects Steven Mogge, Member *WRP*
 Date: Wednesday, June 29, 2011
 RE: Application for Approval of Research Involving the Use of
 Human Participants

Office of University
 Research Services

Towson University
 8000 York Road
 Towson, MD 21252-0001

t. 410 704-2236
 f. 410 704-4494

Thank you for submitting an application for approval of the research titled,
*Indirectly Assessing Attitudes toward Gender Nonconformity using
 Prototypes*

to the Institutional Review Board for the Protection of Human Participants
 (IRB) at Towson University.

Your research is exempt from general Human Participants requirements
 according to 45 CFR 46.101(b)(2). No further review of this project is
 required from year to year provided it does not deviate from the submitted
 research design.

If you substantially change your research project or your survey
 instrument, please notify the Board immediately.

We wish you every success in your research project.

CC: P. Galupo
 File

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Curriculum Vitae
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| 2010 – 2012 Towson, MD | Towson University M.A. in Experimental Psychology Master's Thesis: Indirectly assessing attitudes toward gender nonconformity using prototypes |
| 2006 - 2010 Towson, MD | Towson University B.S. in Psychology -Suma Cum Laude with Honors Minor: Lesbian, Gay, Bisexual and Transgender Studies Minor: Business Administration Honors Thesis: Development and validation of a scale to measure attitudes toward gender nonconformity |

Publications (2 of 5 listed)

- Galupo, M. P., Bauerband, L. A., Gonzalez, K. A., Hagen, D. B., Hether, S. D., & **Krum, T. E.** (in press). Transgender friendship experiences: Benefits and barriers of friendships across gender identity and sexual orientation. *Trans(cending) Psychology: Advancing Feminist Scholarship on Gender and Transgender Experience*, a special issue of *Feminism & Psychology*.
- Krum, T. E.**, Davis, K. S. & Galupo, M. P. (in press). Gender-inclusive housing preferences: A survey of college-aged transgender students. *Supporting Transgender and Gender-Nonconforming Youth*, a special issue of *The Journal of LGBT Youth*.
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Presentations (2 of 19 listed)

- Krum, T. E.** (November 2011). Attitudes toward gender nonconformity: Implications for the GLBT community. Talk presented at the 6th Annual DC Metro Area GLBT Studies Symposium, Washington, D.C.
- Krum, T. E.** & Galupo, M.P. (March 2011). Men in mascara, women with whiskers: Development and validation of a scale to measure attitudes toward gender nonconformity. Paper presented at the annual conference of the Association for Women in Psychology. Philadelphia, PA.
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Professional Experience

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|------------------------------|--|
| 2012 Towson University | Adjunct Faculty <i>Psyc 447: Sex Differences in Psychology</i> Position offered- pending completion of Master's degree |
| 2010 – Present Towson, MD | Assistant Coordinator – Residence Tower, Ward Hall and West Hall Department of Housing & Residence Life, Towson University Assist in the day-to-day function of three residence halls occupied by approximately 625 undergraduate students, supervise a staff of 33 desk assistants, co-supervise a staff of 14 resident assistants, serve on departmental facilities committee, advise building council student group, and serve as part of departmental on-call, crisis response rotation. |

Honors and Awards

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| 2012 | Outstanding Graduate Student Award, Psychology Department, Towson University |
| 2012 | Graduate Speaker, May 2012 College of Liberal Arts Commencement |
| 2010 | Outstanding Graduate Award, LGBT Studies Program, Towson University |
| 2010 | Psychology Department Achievement Award, Towson University |
| 2007 - Present | Psi Chi, National Honor Society in Psychology, Towson University |

Professional Memberships

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| 2011 | Association for Psychological Science (APS) |
| 2011 | Association for Women in Psychology (AWP) |
| 2010 | Eastern Psychological Association (EPA) |
| 2009 | American Psychological Association (APA) |

