

Attachment Style, Sexual Orientation, and Biological Sex in their Relationships With Gender Role

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ABSTRACT

Introduction: Masculinity and femininity constitute the gender role construct into the general concept of sexual identity.

Aim: To investigate the relationships of attachment style, sexual orientation and biological sex with the gender role.

Methods: A convenience sample of 344 subjects (females = 207; males = 137) was recruited.

Main Outcome Measures: The Attachment Style Questionnaire (ASQ), the Kinsey Scale, and the Bem Sex Role Inventory assessed, respectively, attachment styles, sexual orientation, and masculinity/femininity was administered.

Results: Regression analysis revealed that the confidence scale of the ASQ (secure attachment) and relationship as secondary scale of ASQ (insecure/dismissing attachment) have a predictive role toward a higher score of masculinity ($\beta = 0.201$; $P = .000$ and $\beta = 0.208$; $P = .000$, respectively), whereas the need of approval scale of the ASQ (insecure/fearful-preoccupied attachment) shows a reverse association on it ($\beta = -0.228$; $P = .001$). Moreover, to be a male is predictive for masculinity ($\beta = 0.196$; $P = .000$). Also, femininity is predicted by the confidence ($\beta = 0.173$; $P = .002$) and the need of approval ($\beta = 0.151$; $P = .03$) scales of ASQ. Instead, the relationship as secondary scale of ASQ is negatively related to femininity ($\beta = -0.198$; $P = .0001$). No association between non-heterosexual orientation and gender role was found.

Clinical Implications: A better knowledge of links between relational patterns and gender roles for assessment and anamnesis phases in sexual medicine.

Strengths & Limitations: This is the first study considering sexual orientation and biological sex in the relationship between attachment styles and gender role. The main limitation is the use of self-reported psychometric tests.

Conclusion: Our data indicate that a secure attachment is related to both masculinity and femininity. On the contrary, different and reverse aspects of insecure attachment style characterize masculinity and femininity. Masculinity is mostly linked to insecure/dismissing attachment, whereas femininity is linked to insecure/fearful-preoccupied attachment. Moreover, although being male is a further element in support of masculinity, sexual orientation is not associated with gender role. **Ciocca G, Zauri S, Limoncin E, et al. Attachment Style, Sexual Orientation, and Biological Sex in their Relationships with Gender Role. Sex Med. 2019;XX:XXX–XXX.**

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Key Words: Attachment Style; Gender Role; Sexual Orientation; Biological Sex

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INTRODUCTION

Gender role is an important aspect of sexual identity, together with biological sex, sexual orientation, and gender identity. To better understand gender role and how it works, it is fundamental to use a biopsychosocial perspective, which is the paradigm of systems sexology.^{1,2} The components of gender role are conventionally recognized as the 2 stereotypical expressions of masculinity and femininity, although there are exceptions and variations. These clusters of behaviors and attitudes can be expressed at the individual level in many different ways, in both genders, independently from the other elements of sexual identity.^{3–5} However, masculinity and femininity were also defined as specific psychological traits, described as 2 opposed sets of stereotypical characteristics derived from sociocultural constructs.^{4,6,7} In the seventies, this vision was modified by the introduction of the “androgyny” concept, indicating the harmonious combination of high levels of masculinity and femininity in the same person, beyond the gender identity and the biological sex’s expressions.^{8,9}

Although definitions, origins, and relationships of sex roles have been considered on the basis of sociocultural aspects,¹⁰ personality characteristics may also play a role modulating the expression of masculinity and femininity.⁶ Although social imprinting may affect the individual attitudes toward masculinity or femininity, both general culture and some scientific evidence suggest the exhibition of gender-dependent individual characteristics. For example, showing feelings and empathy is considered a feminine behavior, whereas alexithymia, the difficulty of recognizing and expressing emotions, is more prevalent in men.^{11,12}

Following these introductive considerations, the gender role should always be analyzed in relation to behaviors, attitudes, and personality traits that a society, in a given culture and time, considers as masculine or feminine related.¹ The interaction of social, psychological, and biological factors shaping the gender role is largely documented, and, although it is not easy to establish the peculiar role of the environment and the society in this process, particular focus should be devoted to the role of primary relationships with the caregivers. Historically, early psychoanalysis described the link between the primary relationship and sexual identity issues, notably through the oedipal complex.¹³ However, attachment theory gained scientific credibility over the past years, becoming a reliable framework to explain the primary human bonds and their potential influences on gender role development.¹⁴ Attachment theory investigates the quality of the relationship between the child and the primary caregiver(s) during childhood. The construct of attachment was first described by Bowlby^{15–17} in terms of “secure” and “insecure” styles on the basis of a positive or negative child/caregiver relationship. Later studies have differentiated particular types of insecure attachment,^{18,19} and a classification of 3 main categories (ie, secure, avoidant and anxious ambivalent attachment) was proposed.²⁰ More recently, 4 types of attachment have been

observed and described (ie, secure, preoccupied, dismissing, and fearful).¹⁷ Attachment styles and the quality of primary bonds influence and play a pivotal role in adult life and in the couple relationship.²¹ Moreover, scientific interest in attachment theory as a conceptual framework to better understand human sexual behavior is growing and flourishing²²; however, the potential link between attachment styles and sex roles has been poorly investigated.²³

If the gender role is a facet of sexual identity, together with biological sex, sexual orientation, and gender identity, sexual orientation and gender identity are 2 different and independent aspects of sexual identity,⁵ although gender identity is strictly linked to biological sex on a normal or pathologic continuum, as recently revised in the latest version of the International Classification of Diseases.²⁴ However, the possible relationship between sexual orientation and gender role is still controversial and appears culturally mediated according the prejudicial beliefs about heterosexuality and non-heterosexuality.^{10,25} Because of these considerations, we hypothesize that attachment style particularly impacts the gender role compared to other issues of sexual identity, such as biological sex and sexual orientation.

These last 2 aspects of sexual identity are mostly determined by genetic and prenatal factors, whereas the construct of gender role is mainly conditioned by social environment and, according our hypotheses, by the primary bonds.¹ We aim, therefore, to assess masculinity and femininity in relation to attachment styles, biological sex, and sexual orientation.

MATERIALS AND METHODS

Sample

A convenience sample with a snowball recruitment of 344 subjects (women = 207; men = 137; mean age = 26.3 ± 6.6) was recruited among Italian university students. Participants completed the psychometric protocol described below that explored attachment styles, masculinity/femininity, and sexual orientation and including a sociodemographic questionnaire. All participants signed a written informed consent and did not receive any financial remuneration for their participation in this study. The university ethical committee approved this study.

Attachment Style

The Italian version of the Attachment Style Questionnaire (ASQ),²⁶ a psychometric instrument for a dimensional definition of attachment style, was used. The ASQ is a self-report questionnaire composed of 40 items with 6 Likert scale responses.²⁷ The ASQ measures 5 domains: confidence (secure attachment), discomfort with closeness (insecure/avoidant attachment), relationship as secondary (insecure/dismissing attachment), need for approval (insecure/fearful-preoccupied attachment) and preoccupation with relationships (insecure/anxious-ambivalent attachment).²⁸ The first domain investigates the secure attachment style, whereas the remaining 4 domains investigate

particular aspects of the insecure attachment style. Internal consistence of 5 scales of Italian validation ranges from $\alpha = 0.67$ – 0.74 . The attachment styles were characterized according to the theoretical models developed by Hazan and Shaver¹⁸ and by Bartholomew and Horowitz.¹⁹

Gender Role

The Bem Sex Role Inventory (BSRI),⁸ a self-report questionnaire, was used to assess the sex role and the internalization of gender stereotype. It is composed by 60 items along a 7-point Likert scale, evaluating femininity (20 items), masculinity (20 items), and neutral (20 items) gender roles. Study validation shows a Cronbach's $\alpha = 0.86$ for masculinity and $0.80 > \alpha < 0.82$ for femininity items.²⁹ The BSRI allows a categorical classification of the gender role profiles, with a method of median split commonly used in the scoring and analyses of data. Through this method, subjects are individuated as masculine, feminine, androgynous, or undifferentiated.³⁰

Sexual Orientation

To assess sexual orientation, the Kinsey Scale³¹ was used as a self-report tool evaluating sexual behaviors and interests. Scores for this scale range from 0, “exclusively heterosexual,” to 6, “exclusively homosexual.” Scores 1–5 identify individuals with different levels of same- and other-sex attraction and sexual behavior. A further version of the Kinsey Scale includes an additional “X” category for those who do not fit within the 0–6 continuum. This “X” category is intended to describe “asexuality” or individuals who identify as “non-sexual.”^{31,32} Moreover, to perform our analyses, we made an additional bicategorization on the basis of point 0 of the Kinsey Scale (exclusively heterosexual) identifying heterosexuality, and the 1–6 area points of the Kinsey Scale, identifying non-heterosexuality (Figure 1).

Statistical Analysis

Continuous variables were statistically represented as means and standard deviations (SD). Variances of the controls and experimental groups were compared by use of Student's *t*-test for non-matched data, assuming an equal variance. Dichotomic variables were represented statistically as absolute and percentage frequencies. The difference between categorical variables was tested using the χ^2 test or the Fisher exact test when appropriate. A linear regression model was used to test the influence of attachment style, of the biological sex (dummy variables: females = 0; males = 1), and of sexual orientation (dummy variables: heterosexuals = 0; non-heterosexuals = 1) on gender role. In addition, a binary logistic regression model was used to investigate the impact of attachment styles on the category of BSRI. Each α error $< 5\%$ indicated statistical significance. All tests included the 2-tail test and were performed with IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, NY, USA).

RESULTS

First, we described the sociodemographic characteristics, following categorical and continuous variables, and we showed that 17.4% ($n = 60$) of the sample is identifiable as non-heterosexual according to the 1–6 arefiga of Kinsey Scale (Table 1). Moreover, following the categorical methods of BSRI to detect the gender role profile, no differences in the prevalence of masculinity, femininity, androgyny, and undifferentiated between males and females and between heterosexuals and non-heterosexuals were found (Table 2).

Then, we explored the possible relationship between the dimensions of ASQ and masculinity and femininity scales of BSRI. On one side, regression analyses revealed that “confidence” and “relationship as secondary” scale of the ASQ were significantly associated to higher scores of masculinity ($\beta = 0.201$, $P = .000$; and $\beta = 0.208$, $P = .000$, respectively) (Figure 2), whereas “need of approval” was negatively associated to it ($\beta = -0.228$; $P = .001$) (Table 3). On the other side, femininity was associated with “confidence” ($\beta = 0.173$; $P = .002$) and “need of approval” ($\beta = 0.151$; $P = .03$) (Figure 2), whereas it was negatively related to “relationship as secondary” ($\beta = -0.198$; $P = .000$) (Table 4). Being a man was associated with masculinity ($\beta = 0.196$; $P = .000$), but being a woman was not significantly related with femininity. Moreover, no association between sexual orientation and gender role was found (Table 3 and 4).

Finally, according to the categorical method of analysis of BSRI and its 4 discrete categories (masculine, feminine, androgynous, undifferentiated), we performed binary logistic regression analysis, and we found that the androgynous gender role profile was related to “confidence” ($\text{Exp}[B] = 1.064$; $P < .05$), whereas “relationship as secondary” was associated with undifferentiated gender role profile ($\text{Exp}[B] = 0.927$; $P < .05$) (Table 5).

DISCUSSION

This study investigated the possible relationships among gender role, sexual orientation, biological sex, and attachment styles, and some interesting findings were seen. First, observing the distribution of categorical analysis of BSRI, no statistically significant prevalence of individuals categorized as masculine, feminine, androgynous, or undifferentiated on the basis of biological sex and sexual orientation was noticed. In other words, to be a male or female and to be heterosexual or non-heterosexual were not characteristics associated with a specific gender role category. These descriptive data seem to confirm, once again, the inaccuracy of gender stereotypes concerning masculinity and femininity as related to biological sex or sexual orientation and empirically reinforce the need of a clear distinction—in theoretical, clinical and experimental practice—between gender role, sexual orientation, and biological sex when dealing with the concept of sexual identity.^{1,5,33} A large prevalence of androgyny category within our participants was found: according to Bem

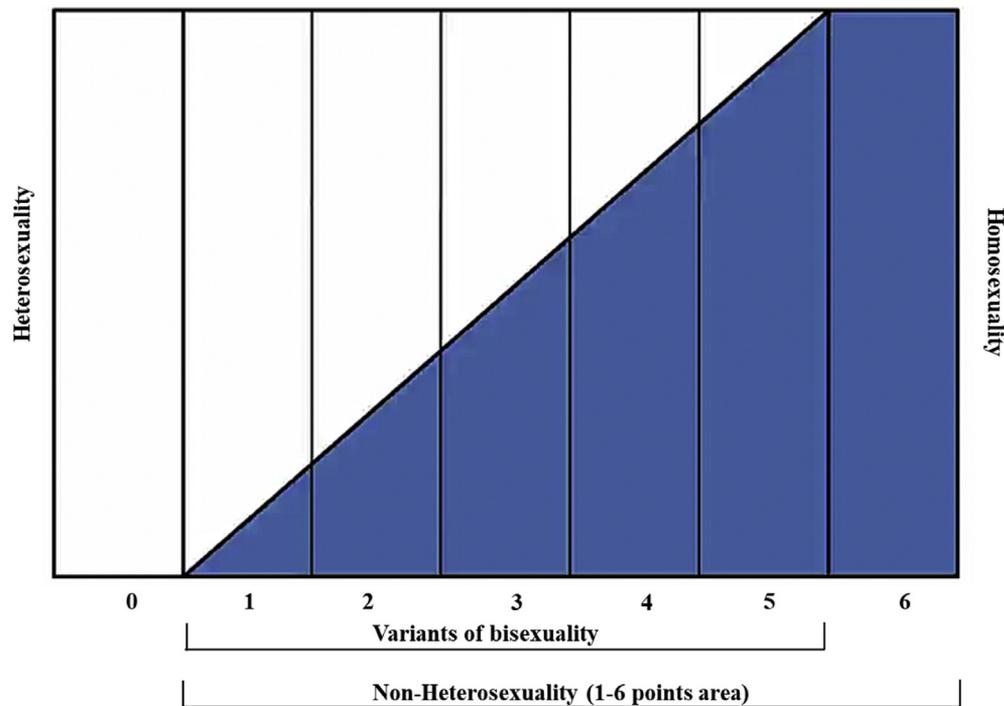


Figure 1. Kinsey Scale: sexual orientation spectrum and non-heterosexuality area. Modified from Kinsey Institute website (<https://www.kinseyinstitute.org/research/publications/kinsey-scale.php#other>), concerning the Kinsey Scale with sexual orientation spectrum and the non-heterosexuality area.

theories, androgyny is a good indicator of psychological health and sexual role harmony.⁸ Androgyny, in fact, represents the functional integration of high levels of masculinity and femininity in the same person.⁸ Moreover, regression analysis did not find an association of biological sex or sexual orientation on gender roles, except in men and for masculinity. In fact, being a male was a predictive factor for reporting more masculinity traits. Although being male is important for masculinity, being female was not found correlated to development of femininity. This evidence represents a considerable gender difference that could generate several scientific speculations, implicating systems/biopsychosocial considerations. From a biological perspective, prenatal factors, such as genes (ie, sex-determining region Y, Sry), hormones (ie, androgens and their receptors), or enzyme (ie, aromatase or 5 α -reductase) and probably other environmental and lifestyle-related factors, intervene in modulating male sexual dimorphism in the prenatal part during the first 1,000 days of life.^{2,33-35} For example, in a 46-XY subject, the deficit of 5 α -reductase generates a deficit in sexual dimorphism and a time-dependent shift from one phenotype to the other, whereas the androgen insensitivity syndrome provokes a number of clinical expressions ranging from a normal male habitus, with mild spermatogenic defect or reduced secondary terminal hair, to a full female habitus, despite the presence of the Y-chromosome.^{36,37} According to these biological evidences and subsequent speculations, male gender and, consequentially, masculinity could be considered more vulnerable compared to femininity. On the other hand, some psychosocial investigations further demonstrated a major vulnerability of male identity regarding the

gender issues.^{38,39} For these systems/biopsychosocial reasons, we could consider the role of male biological sex as a facilitating factor for the development of higher levels of masculinity.

Table 1. Demographics characteristics of the sample (N = 344)

	Mean \pm SD or n (%)
Age	26.3 \pm 6.6
Gender	
Women	207 (60.2.7)
Men	137 (39.8.3)
KINSEY Scale	
Exclusively heterosexual	283 (82)
Predominantly heterosexual, only incidentally homosexual	21 (6.1)
Predominantly heterosexual, but more than incidentally homosexual	1 (0.3)
Equally heterosexual and homosexual	10 (2.9)
Predominantly homosexual, but more than incidentally heterosexual	0
Predominantly homosexual, only incidentally heterosexual	11 (6.1)
Exclusively homosexual	17 (5)
Asexual	1 (0.3)
Sexual Orientation*	
Heterosexual	283 (82.3)
Non-heterosexual	60 (17.4)

*Dichotomic categorization where non-heterosexual category is the 1-6 area of Kinsey Scale; asexuality is excluded by this categorization (See Figure 1).

Table 2. Categorical division of gender role in males, females, heterosexuals, and non-heterosexuals

n (%)	Masculine 61 (18.1)	Feminine 103 (30.6)	Androgynous 120 (35.3)	Undifferentiated 54 (16)
Females	40 (19.3)	69 (33.3)	62 (30)	31 (15)
Males	21 (15.3)	34 (24.8)	58 (41.4)	23 (16.8)
Heterosexuals	49 (17.5)	89 (31.8)	101 (36.1)	42 (14.6)
Non-heterosexuals	12 (21.4)	14 (25)	19 (32.1)	12 (21.4)

χ^2 comparisons between males and females, and heterosexuals and non-heterosexuals: not statistically significant (6 participants were not inserted in this categorial method).

However, if being biologically male partially favors masculinity, according to our initial hypothesis, we found a prominent impact of the attachment styles on gender role in both sexes. In particular, the confidence scale of ASQ, that is, the secure attachment style, has an important influence on the levels of both masculinity and femininity. This evidence is further reinforced when the androgynous individuals were considered by use of the binary logistic regression. Also, in this case, the confidence scale of ASQ resulted in a psychological pattern in association with androgynous people. We found that a secure attachment style is fundamental for harmonious development of masculinity and femininity, resuming in androgyny, behind the role of biological sex. A secure base inside the primary relationship with caregivers seems to be central to development of high levels of both masculinity and femininity. This is not surprising because a vast part of the literature shows that secure attachment is strongly related to a healthy development of personality.⁴⁰

However, the relationship between attachment styles and gender roles cannot be merely reduced to these linear associations. Other attachment factors were particularly related to masculinity and femininity: “relationship as secondary”

(indicating an insecure/dismissing attachment style) and “need for approval” (indicating an insecure/fearful-preoccupied attachment style) were both predictors of masculinity and femininity, but with opposite directions (“relationship as secondary” was associated with higher levels of masculinity and lower levels of femininity, whereas “need for approval” was associated with lower levels of masculinity and higher levels of femininity in both men and women).

It is certainly necessary to accurately explain the relationship between attachment styles and gender roles, because several psychosocial implications are called to a possible explanation. It is largely thought, particularly from a psychoanalytic perspective, that gender identity closely depends on an identificatory mechanism during infancy into the primary relationship and mirroring experiences with parents.^{14,41} However, we also believe that the acquisition of masculine and feminine attitudes, and, therefore, of gender roles could depend on the same relational processes. From this point of view, that is, a possible action of identificatory and mirroring mechanisms, it could be hypothesized that feminine characteristics linked to preoccupied-fearful attachment (anxious attachment) derive from the primary interaction and

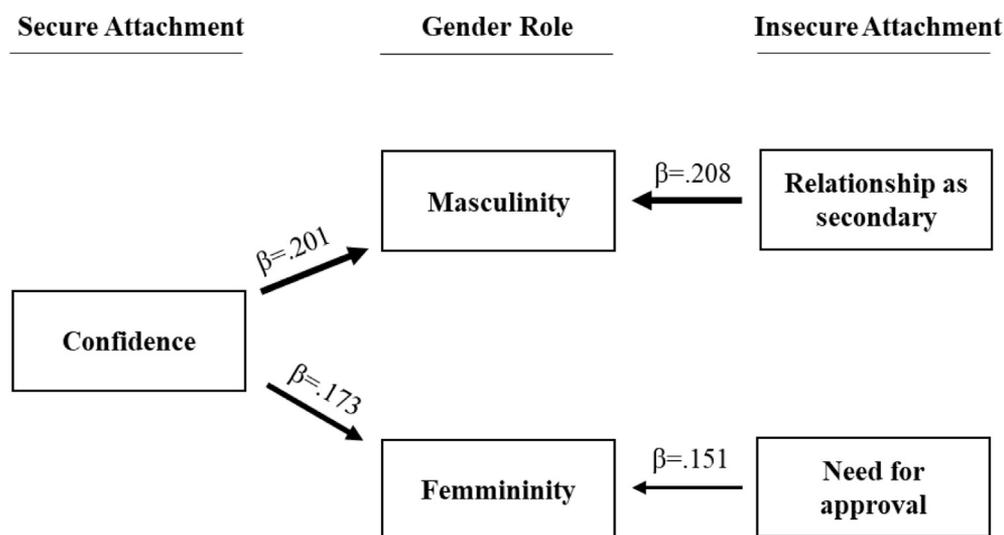


Figure 2. Positive relationships between attachment styles and gender roles. Link and positive influence of secure attachment style on both masculinity and femininity. Moreover, specific and different aspects of insecure attachment characterize both masculinity and femininity; β -values indicate the level of correlation between gender roles and attachment styles.

Table 3. Regression analysis assuming masculinity as dependent variable

	Unstandardized coefficient, B	SE	Standardized coefficient, β	t	P value
(Constant)	3.253	0.432		7.525	.000
Confidence (ASQ)	0.037	0.009	0.201	3.911	.000
Discomfort with closeness (ASQ)	0.006	0.007	0.053	0.926	.355
Relationship as secondary (ASQ)	0.038	0.01	0.208	3.844	.000
Need for approval (ASQ)	-0.033	0.009	-0.228	-3.515	.001
Preoccupation with relationships (ASQ)	-0.009	0.008	-0.068	-1.072	.285
Sex	0.373	0.099	0.196	3.771	.000
Non-heterosexual	0.14	0.124	0.057	1.128	.26

ASQ = Attachment Style Questionnaire.

B is the unstandardized regression coefficient derived from the linear regression.

β is the standardized regression coefficient derived from the linear regression.

t is the coefficient divided by its standard error.

mirroring experiences during infancy, as other studies have shown.²³ In the same manner, we could suppose that dismissing attachment style, with the influence of the relationship seen as secondary for masculinity in an adult age, is likely transmitted during the primary bond. In this regard, a gender difference in insecure attachment is known.⁴² Need for approval (anxious attachment) is mostly present in women, with relationship as secondary (dismissing attachment) seen in men.²⁰ Conversely, when considering confidence, such as a secure attachment style, no difference was found between sexes, in accordance with previous literature²⁰; a non-binary vision of the relational patterns was also seen. This is further supported by our findings showing that a secure base is not related to prevalent development of a specific gender role, but it is fundamental for the structure of both masculinity and femininity (with a tendency to androgyny). In this regard, our results are in line with the first theory about a balance of masculinity and femininity and related psychological wellness, being a secure base during infancy a protective factor for the introjection of the gender roles.^{8,43} It could, thus, be inferred that education, for example at school, may hardly modify the influence of the primary relational

experiences on the introjection of the gender roles, that in turn are not related to sexual orientation.

However, some limits characterize this study, because its observational and cross-sectional design together to a relatively small sample. Moreover, the self-reported psychometric tests have well-known limits with regard to the attachment styles in adults and the possible inferences with the child attachment, particularly. Therefore, future investigations through longitudinal observation could describe in a more accurate manner the relationships we have found.

CONCLUSION

This study revealed the association between attachment styles and gender roles behind sexual orientation and, in part, behind biological sex itself. The development and the levels of masculinity and femininity are closely related to a secure attachment style, whereas biological sex only in males plays a role in masculinity. Moreover, no interaction between sexual orientation and gender role was found. Overall, the current findings showed that the levels of masculinity and femininity are related to quality

Table 4. Regression analysis assuming femininity as dependent variable

	Unstandardized coefficient, B	SE	Standardized coefficient, β	t	P value
(Constant)	3.871	0.426		9.084	.000
Confidence (ASQ)	0.029	0.009	0.173	3.135	.002
Discomfort with closeness (ASQ)	0.003	0.006	0.029	0.468	.64
Relationship as secondary (ASQ)	-0.033	0.01	-0.198	-3.421	.001
Need for approval (ASQ)	0.02	0.009	0.151	2.18	.03
Preoccupation with relationships (ASQ)	0	0.008	0.003	0.044	.965
Sex	-0.11	0.097	-0.063	-1.133	.258
Non-heterosexual	0.144	0.122	0.064	1.178	.24

ASQ = Attachment Style Questionnaire.

B is the unstandardized regression coefficient derived from the linear regression.

β is the standardized regression coefficient derived from the linear regression.

t is the coefficient divided by its standard error.

Table 5. Binary Logistic Regressions on the four categorizations of gender role, assuming attachment styles (ASQ) as independent variables

	Masculine			Feminine			Androgynous			Undifferentiated		
	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)
Confidence (ASQ)	-0.015	0.262	0.985	-0.021	0.729	0.979	0.062	6.073*	1.064	-0.037	1.526	0.963
Discomfort with closeness (ASQ)	0.011	0.289	1.011	-0.011	0.423	0.989	0.016	0.855	1.016	-0.026	1.528	0.974
Relationship as secondary (ASQ)	-0.008	0.078	0.992	0.016	0.401	1.016	0.028	1.32	1.028	-0.076	4.71*	0.927
Need for approval (ASQ)	0.028	0.992	1.029	-0.035	2.019	0.966	-0.005	0.038	0.995	0.026	0.745	1.027
Preoccupation with relationships (ASQ)	-0.001	0.001	0.999	0.026	1.435	1.026	-0.018	0.75	0.982	-0.005	0.029	0.995
Costant	-1.854	1.829	0.157	-0.081	0.005	0.922	-3.022	6.636	0.049	1.168	0.77	3.214

ASQ = Attachment Style Questionnaire.

* $P < .05$.

of relational patterns, although other complex systems/bio-psychosocial factors are also involved.

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