

It's Not Just a Man-Thing: Testing Sex as a Moderator Between Peer Attachment and Machiavellianism, Competition and Self-Disclosure

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ABSTRACT - Whilst previous research has emphasized the importance of biological sex, individual differences in personality and motivations can also affect how close people feel towards their friends. Here, we test the relationship between peer attachment and sex, Machiavellianism, competition and self-disclosure in 236 participants. We found that irrespective of sex, competition had an adverse effect on perceived attachment to a friend. Furthermore, two sub-components of self-disclosure (honesty - accuracy and intent) had a positive impact on peer attachment, robust to sex differences. Sex moderated the relationship between peer attachment and depth, and peer attachment and amount of disclosure. Depth and amount of disclosure were important in improving male but not female friendship quality. Our findings suggest that rather than focusing on sex or personality in isolation from each other, future research on friendship should take both aspects into account.

A plethora of empirical research has indicated that there are substantial sex differences in friendship styles. Women value close, intimate friendship bonds, characterized by high levels of self-disclosure and communion, whereas men have bonds that are more competitive, poorer in quality, and based on activities rather than intimacy (Baron-Cohen & Wheelwright, 2003; Benenson & Christakos, 2003; Hall, 2011; Vigil, 2007). Convinced by empirical findings, Bell claimed that “there is no social factor more important than that of sex in leading to friendship variations” (Bell, 1981, p 55).

These sex differences are often minute rather than substantial (Hruschka, 2010) however and there are large within-sex individual differences in friendship styles with factors such as personality dispositions and motivation affecting behavior in friendship beyond biological sex (Adams & Blieszner, 1994). Wright (1988) called for caution in interpreting any sex differences, as within-sex uniformity tends to be over-emphasized in friendship research. In this study, we investigate the relative contribution of biological sex and other individual differences (competitiveness, Machiavellianism, and self-disclosure), all of which relate to friendship quality, and are expressed differently in men and women. We also consider whether sex moderates the relationships between peer attachment and these individual differences.

Machiavellianism is a personality trait characterized by shallow affect and a cynical attitude towards human nature (Christie & Geis, 1970). It comes of no surprise therefore that those high in Machiavellianism display low communion, high agency (Jones & Paulhus, 2010; Rauthmann, 2012) and place little importance on friendships (Lyons & Aitken, 2010). Furthermore, men report higher levels of Machiavellianism than women do (McHoskey, 1999) and Machiavellianism is more strongly related to behavior for men than women (McHoskey, 2001; O'Connor & Simms, 1990). It is possible therefore that the trait manifests itself in different ways depending on gender and context (Wilson, Near, & Miller, 1996). Thus, Machiavellianism is likely to have an effect on reported friendship quality, and this may differ for each sex.

Whilst competition is one of the most disliked aspects of friendship (Sapadin, 1988), friendship literature has largely ignored the negative aspects of competition. Competition between friends can lower the help that friends give to each other (Tesser & Smith, 1980), and result in the termination of the friendship (Schneider, Woodburn, del Pilar, del Toro & Udvari, 2005). Overall, male friendships, based more on concerns of status than intimacy (Hall, 2011), are more competitive than female friendships (Schneider et al., 2005; Singleton & Vacca, 2007). Competition within male friendships may not always reduce the quality of the bond, and in some cases, may even strengthen it (Schneider et al., 2005). Because of the expectations of agency (or strive for independency) in male, and communion in female relationships (Hall, 2011), it is possible that sex moderates the relationship between competition and friendship quality. Thus, we predict that competition in female friendships is more detrimental than in male friendships.

Finally, self-disclosure, or the intentional act of revealing personal information about oneself, plays an important role in the establishment of friendships, and improves and deepens the intimacy of a relationship (Berg & Derlega, 1987; Monsour, 1992). Individuals who strive to have more intimate relationships place more importance on self-disclosure and also have higher satisfaction with the friendship (Sanderson, Rahm, & Beigbeder, 2005). Although studies have found that in close friendships, women use disclosure more than men do (see Dindia & Allen, 1992, for a meta-analysis), both sexes agree that intimacy and closeness are important aspects of friendship (Fehr, 2004; Jones, 1991). Therefore, we expect that irrespective of gender, self-disclosure leads to higher perceived friendship quality.

Method

Participants

Male ($N = 65$) and female ($N = 171$) participants ($M_{age} = 21.58$, $SD = 6.01$) were opportunity sampled from the campus of a British University ($N = 37$), an online University participant pool ($N = 129$) and a psychology research website ($N = 70$). Participants across the samples were not significantly different in any of the measures, and were analyzed together.

Materials and Procedure

Each participant completed a questionnaire containing preliminary demographic questions and a series of standardized measures assessing Machiavellianism, self-disclosure, competition and peer attachment. The research was approved by the

University Ethics Committee and conducted in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki).

The Self-Disclosure Scale (Wheless, 1978) contains 31 items rated on a seven point scale (1 = strongly disagree to 7 = strongly agree), with statements such as “When I wish, my self-disclosures are always accurate reflections of who I am”, and “I do not often talk about myself”. The scale contains five subscales that are summed and averaged; intended disclosure ($\alpha = .75$), amount ($\alpha = .87$), positiveness - negativeness ($\alpha = .88$), control of depth ($\alpha = .82$) and honesty - accuracy ($\alpha = .86$).

The Mach IV (Christie & Geis, 1970) contains 20 items rated on a seven point scale (1 = strongly disagree to 7 = strongly agree). The items include statements such as “Never tell anyone the real reason you did something unless it is useful to do so” and “It’s hard to get ahead without cutting corners here and there” which are summed to create an Machiavellianism index ($\alpha = .71$).

The original Interpersonal Competition Index (Singleton & Vacca, 2007) contains seven items rated on a five point scale (1 = strongly disagree to 5 = strongly agree) ($\alpha = .83$). Three of the statements were changed as the original Singleton and Vacca (2007) questionnaire was specific for college students and concentrated on school grades. Sample items include “My friend doesn’t like it when I achieve more than s/he does”, and “I like to compete with my friend”.

For measuring friendship quality, we used the Peer component of the Parent and Peer Attachment Inventory (Armsden & Greenberg, 1987). The Peer component subscale contains 25 items rated on a six point scale (1 = almost never or never true to 6 = almost always or always true) ($\alpha = .93$). Example items include “My friend helps me to talk about my difficulties” and “I feel alone or apart when I’m with my friend.”

Results

Table 1 presents the descriptive statistics, sex differences, and zero-order correlations for all variables. Men scored higher on Machiavellianism and competition than women, whereas women engaged in a larger amount of self-disclosure than men did. As predicted, Machiavellianism and competition had a negative association, whereas most of the self-disclosure components (all but depth) had a positive relationship with reported peer attachment.

We conducted a simultaneous linear regression analysis to identify the relative importance of each of the predictor variables (sex, Machiavellianism, sub-components of self-disclosure, and competition) on peer attachment. As we did not observe multicollinearity between the predictor variables (all VIF values 1 or less), linear regression was deemed an appropriate analytical approach. The model provided a significant fit ($F(8,227) = 14.80, p < .001$) and together, all of the predictors explained 33% of the variability in friendship quality. The standardised Beta values shown in Table 1 indicate that intent and honesty - accuracy of self-disclosure were significant positive predictors and competition was a significant negative predictor of peer attachment. Thus, sex and Machiavellianism do not appear to have a significant effect on the quality of friendship when competition and self-disclosure are taken into account.

Table 1
Descriptive Statistics, Zero-Order Correlations and Beta Weights for
all Predictor Variables (Outcome Variable Peer Attachment)

	Total		♂ <i>M</i>	<i>(SD)</i>	♀ <i>M</i>	<i>(SD)</i>	<i>t</i>	<i>r</i>	β
	<i>M</i>	<i>(SD)</i>							
Sex								.18**	.02
Machiavellianism	72.24	(12.59)	76.01	(13.80)	70.80	(11.70)	2.90**	-.20**	-.10
Self-Disclosure									
<i>Intent</i>	19.54	(4.50)	18.75	(4.78)	19.65	(4.36)	1.37	.28**	.14*
<i>Amount</i>	24.24	(8.28)	22.62	(8.54)	24.92	(8.10)	1.90*	.15*	.10
<i>Positive</i>	28.73	(7.95)	29.70	(7.75)	28.35	(7.95)	1.15	.17**	.07
<i>Depth</i>	14.43	(6.10)	15.19	(6.44)	14.26	(5.91)	1.01	.10	.04
<i>Honesty</i>	35.61	(8.82)	33.84	(10.00)	36.10	(8.22)	1.76	.36**	.18**
Competition	15.48	(6.20)	18.26	(5.04)	14.42	(6.22)	4.45**	-.47**	-.41**

Note. Sex coded: 1= male, 2= female * $p < .05$ ** $p < .01$

We further analyzed sex as a possible moderator between peer attachment and Machiavellianism, self-disclosure subcomponents, and competition. We did this by comparing the differences in the correlations separately for each sex (Markland, 2000) using the Fisher's Z transformation. Sex moderated the relationship between peer attachment and depth of self-disclosure (Fisher's $Z = 2.50$, $p < .001$). In men ($r(65) = .37$, $p < .001$), but not in women ($r(171) = -.01$, $p > .05$) the depth of disclosure had a significant impact on friendship quality. The same was observed for the amount of disclosure (Fisher's $Z = 1.94$, $p < .05$), where in men ($r(65) = .33$, $p < .001$) but not in women ($r(171) = .04$, $p > .05$) a greater amount of self-disclosure related to better perceived quality of friendship. Sex did not moderate the relationship between peer attachment and any of the other variables.

Discussion

Contrary to some earlier claims (e.g. Bell, 1981) sex had little overall influence on peer attachment when Machiavellianism, competition and self-disclosure were also considered. Our study supports the idea that rather than being determined by sex, friendship quality is affected by a host of individual differences and motivations (Adams & Blieszner, 1994; Hruschka, 2010). Specifically, friendship competition, intention to self-disclose and honesty – accuracy of self-disclosure each predict peer attachment. Findings further indicate that sex moderates the relationship between peer attachment and some components of self-disclosure.

The present study further highlights the importance of self-disclosure for the development and maintenance of friendship dyads (Sanderson, Rahm, & Beigbeder, 2005; Sermat & Smyth, 1973). Four components of self-disclosure (intent, amount, positiveness – negativeness and honesty – accuracy) were each associated with peer attachment. When other variables were also considered, honesty - accuracy remained predictive of friendship quality. Future studies should consider the manner in which changes in self-disclosure (e.g. a reluctance to disclose information about recent events) influences trust, liking and attachment within friendship dyads.

The findings demonstrate that consistent with previous research (e.g. Singleton & Vacca, 2007), men's friendships are more competitive than women's friendships.

Although it has been previously suggested that competition is more harmful for female than male friendships (Schneider et al., 2005), our results suggests that that competition relates to weak peer attachment independent of sex. Therefore whilst male friendships may be more agentic and status-driven compared to female friendships (Vigil, 2007), our results suggest that the creation and maintenance of close bonds is similar irrespective of sex. Competition may of course be a multidimensional construct. For instance, Hibbard and Buhrmeister (2010) report that adolescent women who compete to win have fewer, lower quality friendships, whereas competing to excel had no relationship with social adjustment. Future research should consider the manner in which different motivations for competition impact on friendships.

Consistent with previous research (e.g., McHoskey, 1999), men in our sample scored higher in Machiavellianism than women did. Whilst not predictive of peer attachment when other variables were included, the negative association between Machiavellianism and peer attachment is consistent with the low importance Machiavellian individuals attach to friendship (Lyons & Aitken, 2010). Our findings further suggest that Machiavellianism, at least in the realms of friendships, manifested in similar ways across the sexes, as sex did not moderate the relationship between Machiavellianism and peer attachment.

The moderation analyses suggest that men and women have slightly different routes to forming a close bond with a friend. For men, the depth and amount of self-disclosure were related to closer peer attachment, whereas in women, disclosure was not important. It has been suggested that men have the tendency to avoid emotional closeness with their male-friends, whereas women seek emotional closeness in their peer relations (Stokes, Fuehrer, & Childs, 1980). Perhaps men, rather than comparatively socially sensitive women, are more dependent on this disclosure for the development and maintenance of close same-sex friendships.

There are obvious limitations to our study. The correlational questionnaire design does not allow us to infer causality. It is possible for example that rather than self-disclosure leading to higher peer attachment, individuals who are in a close, intimate friendship disclose more because of the intimacy. Longitudinal research monitoring the development and maintenance of friendship dyads is recommended. Furthermore, the present study only investigated the perception of one individual. As friendships are dyadic, the perception of the other friend in the dyad is also important for establishing the processes involved in developing intimacy and closeness. A dyad approach provides valuable opportunities for future research.

In conclusion, the present study investigated the effects of sex, Machiavellianism, competition and self-disclosure in subjective perceptions of quality of attachment to a friend. Our findings highlight the factors related to peer attachment, emphasize the moderating rather than deterministic role of biological sex and calls for further studies utilizing longitudinal and dyadic designs.

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