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Flirting with Psychology: A Measure of Flirtation

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ABSTRACT *Flirtation is an indicator of romantic interest that is frequently researched; however, there is no current psychometrically-validated self-report measure of flirtation. To meet this need, the I'm Too Flirtatious Scale (I2FS), a 10-item measure of flirtatious non-verbal behaviors, was developed using a 4-point Likert scale and administered to a convenience sample of 150 students at Brigham Young University. The I2FS had high internal consistency ($\alpha = .82$), but a relatively low content validity ratio (all items $\geq .20$). Principle component analysis revealed one primary factor corresponding with flirtatious nonverbal behaviors. Taken together, the I2FS provides a relatively homogeneous and psychometrically-valid measure of flirtation.*

Flirtation expresses sexual interest and often represents the beginning of a sexual pursuit (O'Farrell, Rosenthal, & O'Neal, 2003). Both men and women perceive these types of social interactions differently; what may be a casual interaction to one may be perceived as flirtation or sexual harassment to another (Henningesen, Henningesen, & Valde, 2006). The beginnings of these interactions seem to stem more from nonverbal communication than from direct verbal cues; as a result, this study will focus on nonverbal communication to probe flirtatious interactions (Grammer, Kruck, Juette, & Fink, 2000). It is important to know not only what people perceive as flirtation, but also to understand how people flirt, in order to appreciate avenues of communication within courtship.

Research consistently describes flirtation as the degree to which one utilizes suggestive haptic (i.e., tactile) interaction or other nonverbal messages to communicate a desire for increased relational intimacy (Abrahams, 1994). Suggestive haptic interaction is defined as touching an individual to convey a sexually provocative message of interest and attraction. Suggestive nonverbal communication is defined as messages intentionally sent through appearance, mood setting, and body language,

with the intention to communicate a desire for increased personal intimacy.

Many scholars assert that there is no nonverbal communication more powerful than touch and that touch is the predominate language of flirtation (Thayer, 1986; Lee & Guerrero, 2001; Quiles, 2003; Renninger, Wade, & Grammer, 2004; Ryan & Mohr, 2004; Henningsen et al., 2006). Burgoon, Walther, and Baesler (1992) noted that not only is touch highly arousing, but also that it is "one of the most provocative yet least understood" nonverbal behaviors (p. 237). Both sexes perceive suggestive physical contact, even forms of physical aggression or force, such as playful shoving, punching, throwing, slapping, and inflicting pain, to be a method of flirtation (Ryan & Mohr, 2005). Because touch conveys messages of affection, love, and flirtation, it is used to foster positive relationships (Lee & Guerrero, 2001).

Although touch is the most powerful form of nonverbal communication, individuals use other nonverbal cues when flirting, such as eye contact, facial expressions and nodding. For example, Renninger et al. (2004) found that males were less likely to approach the other sex to make sexual advances without first being cued by facial expressions. Similarly, Moore (1985) observed that initial courtship was cued by behaviors such as glancing, primping, smiling, nodding, and leaning forward. Indeed, one study found nonverbal communication to be the key in maintaining the attention and interest of the other sex during courtship (Grammer et al., 2000; Renninger et al., 2004). Female nonverbal behavior directs courtship settings and male responses, while male nonverbal behavior is used to display aspects of himself, such as his status, health, strength, and intelligence (Grammer et al., 2000; Renninger et al., 2004).

There is no consensus in the research literature as to how flirtation should be measured, and to date, no research has constructed and psychometrically-validated a self-report measure of flirtation. For example, Downey

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and Vitulli (1987) investigated the likelihood of male and female college students to reciprocate and pursue flirtatious cues by using a self-report questionnaire involving hypothetical situations. Expounding upon this research, O'Farrell et al. (2003) examined the correlation between relationship satisfaction and responsiveness to a non-mate's flirtation using videotaped self-introductions. In 1994, Abrahams examined the perceptual dimensions with which men and women judge flirtation episodes involving both nonverbal and verbal cues using a self-report questionnaire involving hypothetical situations. As can be seen from these studies, flirting can be measured through vignettes, coded videotapes, and assessments of personal interactions; however, no research has constructed a reliable self-report measure of flirtation. The purpose of this study, therefore, was to create a measure of flirtation and test its factor structure, internal consistency, and validity to determine its utility for use in future studies quantifying flirtatious behaviors.

Method

Participants

Participants consisted of a convenience sample of 150 single Brigham Young University (BYU) students. The sample included 64 males between the ages of 18 and 26 years ($M = 21$, $SD = 2.16$) and 86 females between the ages of 18 and 54 years ($M = 19$, $SD = 3.94$). Both sexes were equally represented, $\chi^2(1, N = 150) = 3.23$, $p = .07$. The questionnaire was administered via an online third-party website called Qualtrics (www.qualtrics.com) to participants from a BYU Psychology 111 course or from a networking website: Facebook (www.facebook.com).

Item Construction

The I'm Too Flirtatious Scale was created from an item pool of 30 questions. Ten items were selected from the 30-item pool based on the content validity ratio (CVR), calculated with the relevancy ratings of 21 panelists in an undergraduate psychological testing course (see Appendix A for the final questionnaire). Items with a CVR $> .20$ were included (see Table 1). Items were rated on a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree). Five items were negatively worded and reverse scored to control for agreement bias. Item presentation

Table 1
Content Validity Ratio

Item	CVR
Touch arm during conversation	0.70
Dress to impress	0.30
"Footsies"	0.20
Romantic Atmosphere	0.40
Body language as sexually attractive	0.70
Cuddling	0.30
Arm around the shoulder	0.20
Touch the lower back	0.20
Stand closer	0.90
Body language to get attention	0.70

was also randomized to control for order effects.

Statistical Analysis

Cronbach's alpha was used to ascertain the internal consistency of the questionnaire (Cronbach, 1951). The factor structure of the I2FS was examined using principle components analysis. We selected factors based on inspection of the eigenvalues, examination of the scree plot deflection, and interpretability. Pearson bivariate correlations were used to identify relationships among questions to clarify the factors of the factor analysis. All data were analyzed using SPSS 16.

Table 2
Component Matrix

Item	Component	Component	Component
	1	2	3
Touch arm during conversation	0.67	0.10	0.18
Dress to impress	0.65	-.31	-.29
"Footsies"	0.43	0.09	0.71
Romantic Atmosphere	0.77	0.19	-.02
Body language as sexually attractive	0.61	-.50	-.03
Cuddling	0.38	0.62	-.29
Arm around the shoulder	0.51	-.01	0.47
Touch the lower back	0.67	-.40	-.17
Stand closer	0.73	0.03	-.16
Body language to get attention	0.67	0.39	-.16

Results

Factor Structure

Principle components analysis revealed three factors with eigenvalues greater than 1 (eigenvalues = 3.87, 1.11, and 1.01) that accounted for 59.84% of the variance (see Tables 2-3). This three-factor solution

was inconsistent with the deflection in the scree plot that indicated only one primary factor (see Figure 1). Given that two of the factors had eigenvalues just over one, that the deflection in the scree plot indicated one primary factor, and that all of the items had primary loadings on the first factor except the cuddling item (see Table B2), we interpreted these results to indicate there is only one primary factor that accounted for 38.72 % of the variance in the I2FS and appeared to correspond with overall nonverbal flirtatious behaviors.

Reliability

Cronbach's alpha indicated the test's internal consistency was highly reliable ($\alpha = .82$; see Table 4). A Pearson bivariate analysis revealed 37 of 45 correlations were significant, indicating a strong linear relationship between the majority of test items ($p < .05$; see Table B5).

Validity

One item had very high content validity ($\geq .90$) as measured by the CVR, three items had adequate content validity ($.70 \geq .79$), and six items had low content validity ($\leq .59$; see Table 1). Forty-nine percent of participants correctly identified the construct being measured (i.e., flirtation), indicating that the test had low face validity.

Discussion

Due to the absence of a psychometrically-validated measure of flirtation, we created the I2FS and examined its psychometric properties and factor structure. The I2FS had high internal consistency and reliability. Principle component analysis and examination of the scree plot deflection revealed that the I2FS consisted of one primary factor. This factor (nonverbal communication) had a high correlation between the items. This suggested that the majority of the variance between test items captured the broad domain of nonverbal communication well. However, test items did not discriminate between the domains of haptic interaction and nonverbal cues. Although haptic interaction is inherently a part of nonverbal communication, more pellucid items could result in greater discriminability between these two hypothesized factors.

A potential variable that may have influenced ratings on the I2FS is attraction. Individuals may be more likely to flirt with those to whom they are attracted. As a result, the relationship status of participants may also be

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Table 3
Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
Touch arm during conversation	3.87	38.72	38.72	3.87	38.72	38.72
Dress to impress	1.11	11.10	49.78	1.11	11.10	49.78
"Footsies"	1.01	10.07	59.84	1.01	10.07	59.84
Romantic Atmosphere	0.84	8.43	68.27			
Body language as sexually attractive	0.77	7.73	76.00			
Cuddling	0.63	6.26	82.26			
Arm around the shoulder	0.51	5.06	87.32			
Touch the lower back	0.48	4.76	92.08			
Stand closer	0.43	4.33	96.41			
Body language to get attention	0.36	3.59	100.00			

Extraction Method: Principal Component Analysis

% = Percentage

a limitation, because individuals in relationships may be less likely to flirt due to relationship commitment. We did not include a measurement of how attraction can influence nonverbal behaviors and the level of participant involvement in current relationships, which may have resulted in inaccuracies in the findings.

Another source of error may have been the non-expert panelists for the CVR. Panelists consisted of students from an undergraduate psychological testing course who, while

probably periodically engaging in flirtatious activities, are not experts in the field. These student panelists rated few items as essential, which may be largely attributed to the conservative nature of not only the religious university but also the panelists previous exposure to the construct. In addition, the sexually themed items possibly led some panelists to feel uncomfortable, which also may have biased responses.

Despite these sources of error, the I2FS represents the

Table 4
Cronbach's Alpha

Cronbach's alpha	Cronbach's alpha standardized	N
0.82	0.82	10

First empirically supported measure of flirtation; therefore, it is worthwhile to improve this measure. This scale only sampled Brigham Young University students; further studies must be conducted to improve external validity. After further developing the I2FS, it may be used in studies of sexual harassment. Instigators of sexual harassment may not recognize their actions as sexual advances, but rather as flirtatious. However, increasing the number of questions and editing of the established questions would further discriminate between the two domains of haptic interaction and nonverbal communication. It may also be requisite to add more questions to assess further domains incorporated by flirtation, such as verbal communication.

The aim of the I2FS was to measure flirtation accurately and reliably. The I2FS proved to be highly reliable. Further research is necessary not only to validate this measure, but also to incorporate more domains into the hypothetical construct of flirting, such as attraction and relationship status, giving a broader analysis of flirtation.

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Appendix A

I'm Too Flirtatious Scale

Demographics

What is your sex? Male Female
 What is your age?
 What year are you at Brigham Young University?
 What is your major?

Questions

In my interaction with a person of interest, I often touch his or her arm during conversation.
 Strongly Agree Agree Disagree Strongly Disagree

When I dress in the morning, I do NOT use my clothing to impress a person of interest.
 Strongly Agree Agree Disagree Strongly Disagree

When under a table, I playfully rub the leg of a person of interest with my foot ("Footsies").
 Strongly Agree Agree Disagree Strongly Disagree

I do NOT create a romantic atmosphere when with a person of interest.
 Strongly Agree Agree Disagree Strongly Disagree

I use body language to project myself as being sexually attractive.
 Strongly Agree Agree Disagree Strongly Disagree

I do NOT enjoy cuddling with a person of interest.
 Strongly Agree Agree Disagree Strongly Disagree

I intentionally place my arm around the shoulder of a person of interest to communicate my interest in him or her.
 Strongly Agree Agree Disagree Strongly Disagree

I do NOT touch the lower back of a person of interest to convey messages of attraction.
 Strongly Agree Agree Disagree Strongly Disagree

I stand closer to those to whom I am more attracted.
 Strongly Agree Agree Disagree Strongly Disagree

I do NOT use body language to get attention from a person of interest.
 Strongly Agree
 Agree Disagree Strongly Disagree

What do you think this questionnaire is trying to measure?

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