

# Perceived Effectiveness of Flirtation Tactics: The Effects of sex, Mating Context and Individual Differences in US and Norwegian Samples

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## Abstract

Flirting involves various signals communicated between individuals. To attract potential mates, men and women exhibit flirtatious behavior to get the attention of, and potentially elicit sexual or romantic interest from, a desired partner. In this first large, pre-registered study of judgement of the effectiveness of flirtation tactics based on Sexual Strategies Theory, we considered the effects of flirter's (actor) sex and mating contexts in addition to rater's (participant) sex across two cultures, Norway and the U.S. Culturally relevant covariates such as sociosexuality, extraversion, mate value, age, and religiosity were examined. Participants from Norway (N = 415, 56% women) and the US (N = 577, 69% women) responded to one of four different randomized questionnaires representing a factorial design considering either short-term versus long-term mating context and either female or male sex of actor. We found that sexual availability cues were judged more effective when employed by women in short-term mating contexts. Friendly contact, such as hugs or kissing on the cheek, was not. Cues to generosity and commitment were judged more effective when employed by men in long-term mating contexts. Humor was rated as more effective when used by men and in long-term contexts, and least effective when used by women in short term contexts. However, laughing or giggling at someone's jokes was an effective flirtation tactic for both sexes. Overall, predictions for culturally relevant covariates were not supported, but cultural differences were found in bodily displays, initial contact, and generosity. These findings dovetail neatly with findings from the self-promotion literature, and further support that flirtation is a universal mate signaling strategy.

## Keywords

flirtation, sexual strategies theory, commitment, sexual availability, mate value, extraversion, sociosexuality, religiosity

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## Introduction

Mate acquisition is an evolutionary challenge for sexually reproductive species, humans included (Buss, 1988). In a first meeting between potential romantic partners, there needs to be some form of signaling to convey interest and to present one's mate value (Conroy-Beam et al., 2019) as efficiently and effectively as possible. Flirtation tactics are thus behaviors that aim to establish initial contact or initiate more romantic or sexual behavior with a potential partner. Flirtation may either aim to acquire sexual contact or establish a romantic relationship (Henningesen, 2004; Moore, 2002; Wade & Feldman,

2016; Whitty, 2003). Thus, flirtation is about what one does (Wade & Feldman, 2016), who one is (Apostolou &

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Christoforou, 2020), and how one is perceived (Bendixen, Kennair, Biegler, & Haselton, 2019; Hughes, Harrison, & de Haan, 2020). Individual differences in various traits influence which tactics are perceived as more effective. Important factors that influence flirtation behavior therefore include sex (Schmitt & Buss, 1996), attractiveness or mate value (Bendixen et al., 2019), sociosexuality (Penke & Asendorpf, 2008), and personality traits (Hall, Carter, Cody, & Albright, 2010). In the intrasexual competition to achieve the best possible mate (Fisher & Cox, 2011), there are many challenges that must be met based on available partners and one's own romantic resources (Buss & Shackelford, 2008; Fales et al., 2016). While popular media runs over with flirtation and mate acquisition advice, there is scarce research on efficient flirtation tactics (but see Wade & Feldman, 2016 for an exception). The current paper therefore aims to address what tactics are perceived as most efficient for each sex in short-term and long-term mating contexts and to what extent culture may influence these perceptions. We will also consider the effects of several relevant covariates, such as sociosexuality, religiosity, extraversion, mate value and age.

Different flirtation tactics have been described in the literature (Wade & Feldman, 2016). These flirtation tactics may be verbal (Grammer, Kruck, Juette, & Fink, 2000; Whitty, 2004) or non-verbal (Renninger, Wade, & Grammer, 2004). However, there is no overarching taxonomy or organizing principle for these different tactics. Examples of non-verbal behaviors are how one dresses, dances, poses, the giving of gifts or raising of eyebrows (see Grammer, *et al.*, 1988; Renninger, et al., 2004; Wade & Renninger, 2021). Explicit verbal behaviors include saying "I love you" or engaging in deep conversation. Flirtation behaviors may also be categorized according to what the tactic conveys or signals; saying "I love you" communicates commitment, while displaying one's body might communicate sexual availability to a larger degree. The current study will therefore attempt a preliminary categorization, building on previous work on mate acquisition behaviors from a Sexual Strategies Theory (SST) perspective on mate acquisition tactics (Bendixen & Kennair, 2015; Buss, 1998; Buss & Schmitt, 1993; Schmitt & Buss, 1996).

### *SST as a Theoretical Framework*

SST highlights how different aspects, traits and behaviors are prioritized in mate choice based on sex and mating context (Buss, 1998; Buss & Schmitt, 1993, 2017). In a mate acquisition situation, both self-promotion and competitor derogation tactics (Schmitt & Buss, 1996), including flirtation, may be deployed. Note that as an underlying premise one must expect that effectiveness evaluations of mate acquisition tactics demands that people have a general understanding of evolved mate preferences (Grøntvedt, Bendixen, & Kennair, in press), and humans do show stable and robust partner preferences that are found across national samples (Buss, 1989; Buss et al., 1990; Thomas *et al.*, 2020; Walter *et al.*, 2020). SST may aid researchers in reducing the design space of what flirtation tactics may

have evolved and what may be considered the most beneficial, by addressing the different adaptive reproductive challenges the two sexes have met over evolutionary time. In addition, different mating contexts (short-term vs. long-term) present different costs and benefits to the sexes. Simply put, one might not seek the same partner for a long-term committed relationship as for a short-term sexual fling.

Self-promotion and competitor derogation, two other types of mate acquisition tactics, have been addressed from the SST perspective (Bendixen & Kennair, 2015; Schmitt & Buss, 1996). These mate acquisition tactics are more competitive in nature than flirting necessarily is. Self-promotion works by highlighting one's competitive edge. Competitor derogation comprises different forms of attempts to sabotage same-sex competitors' chances of being chosen by partners, by divulging information about them that might deter potential partners from choosing them. Both tactics are based on an evolved presupposition of what trait preferences partners of the opposite sex have. Based on SST different manners of self-promotion and competitor derogation were grouped by Schmitt and Buss (1996), and predictions were made: 1) sexual availability was considered more effective for women in short-term contexts or 2) displaying commitment and generosity more effective for men and long-term contexts. The original research was replicated in Norwegian sample (Bendixen & Kennair, 2015). Following up on the self-promotion and derogation literature (Bendixen & Kennair, 2015; Fisher, Cox, & Gordon, 2009; Schmitt, 2002; Schmitt & Buss, 1996), the SST framework will be employed to consider flirtation tactics. The current study aims to conceptually reproduce the underlying theory of these studies with a set of flirtation tactics from Wade and Feldman (2016).

Sexual access has been the major fitness bottleneck for men across evolutionary history (Karmin et al., 2015). The asymmetry in minimal obligatory investment in offspring, and men's greater fitness benefits from mating with multiple partners, has formed men's short-term sexual psychology (Buss & Schmitt, 1993; Trivers, 1972). In general, men are more open to casual sex than women (Buss & Schmitt, 1993; Schmitt, 2005; Surbey & Conohan, 2000). Women will consequently be more effective by displaying sexual interest and availability as a short-term mate acquisition tactic (Bendixen & Kennair, 2015; Greer & Buss, 1994; Grøntvedt et al., in press; Kennair, Grøntvedt, Kessler, Gangestad, & Bendixen, in press; Schmitt & Buss, 1996). Conversely, men will also often perceive cues to sexual exploitability as attractive and employ tactics intended to acquire short-term sexual liaisons while avoiding long-term commitment (Goetz, Easton, Lewis, & Buss, 2012; Jonason & Buss, 2012). Women have not had the same benefit of short-term mating, and thus men might improve their mate acquisition success by curbing the signaling of their sexual enthusiasm (Bendixen et al., 2019). Early work in this field established that while women knew signals of immediate sex were effective, such tactics were infrequently performed (Greer & Buss, 1994). Men also rate flirtation tactics which signal sexual availability as more effective in general when performed by women (Wade & Feldman, 2016), but the distinction between short-

and long-term mating contexts has yet to be examined. Thus, we expect tactics signaling sexual availability to be most efficient for women in a short-term context. Associated with signaling sexual access are tactics involving highlighting bodily features and especially secondary sex characteristics, showing skin, and sexual touching (Grammer, Renninger, & Fischer, 2004).

Women's differential reproductive fitness is associated with a partner's willingness and ability to invest in offspring (Buss & Schmitt, 1993; Trivers, 1972). In long-term relationship mate acquisition women are therefore expected to focus on cues that signal future resource potential (Buss, 1989; Buss & Shackelford, 2008; Schwarz & Hassebrauck, 2012; Walter et al., 2020). Men are found to display more generosity in the presence of a potential mate than in the presence of same sex or no observer (Iredale, Van Vugt, & Dunbar, 2008). Men are also found to use mate retention tactics that signal resource displays more than women (Buss & Shackelford, 1997). Further, Wade and Feldman (2016) found that women preferred flirtation tactics that indicate emotional commitment. In a study of self-promotion tactics, cues to commitment were rated far more effective in a long-term mating context and were more effective for men than for women (Bendixen & Kennair, 2015). However, it is important to note that both sexes find agreeableness important in long-term partners (Buss, 1989; Walter et al., 2020). Therefore, based on previous research, we predict that while tactics that signal commitment, intimacy and generosity should be more efficient for both sexes in a long-term context, these flirtation tactics should be perceived as more efficient when employed by men than by women.

According to the theory of mental fitness indicators (Miller, 2000), some human capacities, such as humor, evolved through mutual mate choice for 'good genes' and 'good parent' traits. A good sense of humor is suggested to be sexually attractive because it is a hard-to-fake signal of intelligence, creativity, and other desirable traits (Howrigan & MacDonald, 2008). Women value humor production ability more in mates than men do (Lundy, Tan, & Cunningham, 1998), and laugh and smile more in response to humor produced by the opposite sex (Provine, 2001), while men prefer women who laugh at their humor (Bressler & Balshine, 2006). Humor production ability predicts lifetime number of sexual partners, and is higher in men (Greengross & Miller, 2011). Lundy et al. (1998) argued that humor should have a greater effect in long-term contexts, as having a partner with a good sense of humor is relevant to one's own well-being. Thus, while it is unclear what mating context humor is most relevant for, flirtation tactics that include humor production ought to be more efficient for men, and flirtation tactics that include humor appreciation are expected to be more efficient for women.

### Cultural Comparison

The U.S. and Norway are both western countries. However, there are some especially relevant differences between these countries: Norway is among the most gender egalitarian, sexually liberal and secular nations of the world (Grøntvedt & Kennair, 2013).

The U.S. is lower on all these measures, while much of the original research the hypotheses are based upon is from the U.S. In previous research with similar samples Americans responded higher on religiosity and Norwegians higher on sociosexual behavior and attitudes (Bendixen, Asao, Wyckoff, Buss, & Kennair, 2017). Nevertheless, most predictions from Sexual Strategies Theory have been supported in more gender egalitarian Scandinavian countries, in some cases (such as jealousy) showing greater sex differences and in other cases (such as sexual regret) showing similar differences (Kennair et al., in press). The latter comparison is made relevant in the context of the claim from social role theory that SST predictions of sex differences tested and confirmed in the US would not be as large in *more* gender egalitarian nations.

We will therefore also consider the effects of several culturally relevant covariates (Bendixen et al., 2017), considering the effects of individual differences in sociosexuality, religiosity, mate value, and extraversion. Penke and Asendorpf (2008) reported that sociosexuality predicted flirting behavior. Women with less restricted sociosexuality require fewer signs of male willingness to invest to engage in sexual relations than more sociosexually restricted women (Townsend & Wasserman, 1998). Also, sociosexuality has been found to be significantly associated with perception of self-promotion tactics concerning sexual availability: unrestricted individuals rated acting seductively and making propositions as more effective (Bendixen & Kennair, 2015). Further, unrestricted individuals rated signaling sexual exclusivity as being less effective than their more restricted peers. Hence, flirtation tactics related to cues of commitment and investment might be more relevant for individuals with a more restrictive sociosexuality (Bendixen & Kennair, 2015). Religiosity influences certain sexual behaviors in the opposite direction of sociosexuality (Bendixen et al., 2017), and may therefore also influence perception of specific domains of flirtation tactics.

In addition there are other non-culturally relevant covariates that we wish to explore: Personality influences flirtation styles, especially extraversion (Hall et al., 2010). Extraversion is the Big Five personality trait that is most reliably associated with sexual behavior and shows some overlap with sociosexuality (Nettle, 2005; Schmitt & Shackelford, 2008). Given differences in bargaining power in high mate value individuals (Fales et al., 2016), it is possible that mate value also influences perception of flirting behavior. We will explore the effects of these two latter individual differences.

### Study Aims, Hypotheses and Predictions

The aim of the current study is to consider the perceived effectiveness of different flirtation tactics employed by heterosexual men and women from two different cultures in short-term and long-term contexts using a two-by-two (sex by mating context) factorial design, testing and conceptually reproducing hypotheses developed from an SST perspective (Bendixen & Kennair, 2015; Schmitt & Buss, 1996). We will also consider the effects of several relevant individual differences including sociosexuality, extraversion, mate value, and religiosity.

We preregistered the following hypotheses (although probably we should have called them predictions) (<https://osf.io/x8qfh/>):

**Hypothesis 1:** Flirtation tactics that include cues to sexual availability will be judged as more effective when they are employed by women in a short-term mating context compared to women in a long-term mating context and to men in both mating contexts (Bendixen & Kennair, 2015; Schmitt & Buss, 1996). *A priori* we expected two factors: Items that cover non-verbal, physical behavior and items that cover physical contact (see preregistration for further information on our *a priori* argumentation, however, see the Results section below for empirical operationalization of these categories *post hoc*).

**Hypothesis 2:** Flirtation tactics that include acts of generosity are cues to commitment and investment and will be rated as more effective when employed in long-term mating context and when employed by men (Bendixen & Kennair, 2015; Schmitt & Buss, 1996).

**Hypothesis 3:** Flirtation tactics that include verbal intimate communication will be rated as more effective when employed in a long-term mating context and more effective when employed by men (Bendixen & Kennair, 2015; Schmitt & Buss, 1996).

**Hypothesis 4:** Flirtation tactics that include spending time with another person are also commitment signals and will be rated as more effective when employed in a long-term mating context and more effective when employed by men (Bendixen & Kennair, 2015; Schmitt & Buss, 1996).

**Hypothesis 5:** Flirtation tactics that primarily involve seeking attention or contact will be rated as more effective when employed in a short-term than in long-term mating context.

**Hypothesis 6:** Flirtation tactics that include humor production ability will be considered more effective when employed by men than by women in both mating contexts (Greengross & Miller, 2011).

**Hypothesis 7:** Flirtation tactics that include responses to humorous behavior will be considered more effective when employed by women than by men in both mating contexts (Greengross & Miller, 2011).

**Hypothesis 8:** Male participants will judge flirtation tactics that include cues to sexual availability as more effective than female participants (Bendixen & Kennair, 2015; Schmitt & Buss, 1996).

**Hypothesis 9:** Relative to more restricted participants, less sociosexually restricted individuals will rate flirtation tactics that signal sexual availability as more efficient (Bendixen & Kennair, 2015).

**Hypothesis 10:** Relative to more restricted participants, less sociosexually restricted individuals will rate flirtation tactics that signal commitment as less efficient (Bendixen & Kennair, 2015).

**Hypothesis 11:** Relative to more introverted participants, extraverted individuals will rate flirtation tactics that signal sexual availability as more efficient (Nettle, 2005; Schmitt & Shackelford, 2008).

**Hypothesis 12:** Relative to more introverted participants, extraverted individuals will rate flirtation tactics that signal commitment as less efficient (Nettle, 2005; Schmitt & Shackelford, 2008).

We will further explore the effect of individual differences in religiosity and mate value, and perform validation tests on cultural differences in level of religiosity and sociosexuality (Bendixen et al., 2017). It is important to reiterate that as this section of the analyses is exploratory in nature, hypotheses are nondirectional.

## Method

### *Sample and Design: Norway*

The primary participants were students attending lectures at different faculties (i.e., convenience sample) at the Norwegian University of Science and Technology (NTNU) in Trondheim. In addition, flyers were handed out to students and posters were distributed at various campuses, containing information about the study combined with a link and a QR-code directing them to a website for responding (SelectSurvey). Data were collected between October 2018 and January 2019. We applied a 2 (Sex of Actor: female vs. male) x 2 (Mating context: short-term vs. long-term) factorial design identical to the one applied by Bendixen and Kennair (2015). There were four versions of the questionnaire covering 40 different flirtation tactics, sociosexuality, mate value, extraversion, religiosity, and demographics (age and sex of participant, and relationship status). To increase the internal validity participants were randomly assigned to one of the four versions: (1) A woman flirting for short-term sex with a man, (2) A woman flirting for a long-term relationship with a man, (3) A man flirting for short-term sex with a woman, and (4) A man flirting for a long-term relationship with a woman. Four-hundred sixty-six people completed the survey, and 454 reported their age. To increase the homogeneity of the sample, participants over the age of 30 were removed. Participants under the age of 18 were removed for ethical reasons (remaining  $n = 440$ ). Finally, participants not considering themselves to be heterosexual were removed, resulting in a sample of 415 heterosexual respondents eligible for analysis (89% of the original sample), with a mean age of 22.80 ( $SD = 2.47$ ). Fifty-six percent of the sample were women, 44% were men (three did not identify as man or woman in the unselected sample).

### *Sample and Design: US*

In the first of the Northeastern US University samples, an email message with a link to a Qualtrics survey was sent to 1st through 4th year students inviting them to take part in the research.

Additionally, students from the second Northeastern US University in an introductory social psychology and an introductory research methods course were invited to take part in the research for ‘extra course credit’. Data were collected between April 2019 and November 2020. The design of the study and the four versions of the questionnaire were identical to the above Norwegian versions. Participants older than 30 or who did not consider themselves to be heterosexual were excluded. These exclusions left us with a sample of 577 heterosexual respondents eligible for analysis (89% of the original sample). Mean age was 19.76 ( $SD=1.48$ ). Sixty-one percent were women, 39% men (one did not identify as man or woman in the unselected sample).

### Procedure: Norway

Each participant was given an invitation to, and information about, the study orally in lecture breaks together with the link to the website for responding. Information on the study was presented on the first page of the electronic questionnaire, also informing all participants that responding was fully voluntary and that their responses would remain completely anonymous. All participants had the opportunity to break off at any time during the responding. Each participant confirmed their informed consent by pressing “Agree” on the final page of the questionnaire. Participants were encouraged to complete their survey in private settings. To reach out to a larger population, the primary participants were asked to share the link for the survey on their Facebook profile (or similar) and to encourage their social networks to respond to the questionnaire and to share the link further (snowballing procedure). The procedure was approved by the Norwegian Center for Research Data (NSD), the National Competency Center for Data Protection in Research (Ref: 518364).

### Procedure: US

The students at the first of the Northeastern US University samples received an email message with a link to a website to respond to the electronic questionnaire (Qualtrics) survey inviting them to take part in the research. All participants were informed that responding was fully voluntary and that their responses would remain completely anonymous. The research was approved by the Institutional Review Board at the University. At the second Northeastern US University the social psychology and research methods students were given the same information about the study orally during courses and invited to access the study through links in the online course companion/system (Blackboard). Here they could access the link to Qualtrics. The research project was approved by the Institutional Human Subjects Review Board.

### Measurements

**Flirtation tactics.** The flirtation items used in this study were chosen by carefully consulting the list of flirtation-items developed by Wade and Feldman (2016). Additionally, items from

Hall and Xing (2015) and items assumed to be effective were included, producing a final list of 40 items.<sup>1</sup> Because the goal was to make direct comparisons of the effectiveness of the flirtation tactics across context and sex, the items were identical in all four versions of the questionnaire. The tactics predominantly covered different cues of sexual availability, investment, and commitment, but also non-intimate communication and humor production and responses to humorous behavior tactics were included (see preregistration <https://osf.io/x8qfh/>). For all tactic effectiveness judgments, the participants responded to a 7-point Likert scale with anchors 1 (*Not very effective*) and 7 (*Very effective*) with mid-point 4 (*Moderately effective*).

Rather than treating the various items assumed to reflect sexual availability as one global measure, we first differentiated between physical and non-physical forms.<sup>2</sup> The latter covered three items; display upper body, dress to impress, and dress sexy. The internal consistency (Cronbach’s alpha) of these three items was 0.65. The remaining physical items covered 13 behaviors, including “Having sex”. Because having sex cannot be considered a part of the flirtation tactics for short-term mating but rather an outcome of flirtation tactics used, we did not include this item in the scaling analysis. The remaining 12 items were subject to exploratory factor analyses (maximum likelihood principal components) that guided the development of the final scales. The analysis identified three components that reflected either friendly physical contact (4 items,  $\alpha = 0.72$ ), initial physical contact (4 items,  $\alpha = 0.77$ ), or sexualized physical contact (4 items,  $\alpha = 0.73$ ). The items that loaded on the scale Initial Contact was “Moves closer”, “Dances”, “Touches lower back” and “Touches arm”. Items that loaded on the scale Friendly Contact was “Hugs”, “Kisses on the cheek”, “Tickles”, and “Hold hands”, while the items loading in the scale Sexualized Contact included “Rubs against body”, “Kisses on mouth”, “Touches foot”, and “Makes body contact”. Finally, a confirmatory factor analysis suggests a less than optimal, albeit promising fit for a model with the above three latent physical factors,  $\chi^2(51) = 340.14$ , RMSEA = 0.080 [0.072, 0.088], CFI = 0.914, TFI = 0.889, SRMR = 0.053, CD = 0.975. This three-factor model fit the data far better than a model with a single latent physical factor,  $\chi^2(54) = 873.62$ , RMSEA = 0.131, TLI = 0.703.

The remaining items were sorted conceptually into three scales reflecting diverse long-term tactics: Investment/Generosity (4 items,  $\alpha = 0.79$ ), Commitment (4 items,  $\alpha = 0.79$ ), and Spending Time (4 items,  $\alpha = 0.75$ ), and three scales reflecting Non intimate/attention seeking tactics (4 items,  $\alpha = 0.70$ ), Humor production (2 items,  $r = 0.44$ ), and Responses to jokes (single item).

**Sociosexuality.** To measure participants’ sociosexuality the 9-item revised Sociosexuality Orientation inventory (SOI-R; Penke & Asendorpf, 2008) was used. Here 3 theoretically meaningful components of sociosexuality are measured: past behavioral experiences (e.g., How many different partners have you had sex within the past 12 months?), the attitude toward uncommitted sex (e.g., Sex without love is OK), and sociosexual desire (e.g., In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?). Internal consistency was good for the

9-item SOI-R scale ( $\alpha=0.86$ ) and for each of the dimensions: Behavior ( $\alpha=0.87$ ), Attitudes ( $\alpha=0.82$ ), and Desire ( $\alpha=0.87$ ).

**Extraversion.** Extraversion was measured by the 4-item extraversion scale from the Mini-IPIP (Donnellan *et al.*, 2006). The measure included items such as “I am the life of the party” and “I don’t talk a lot” (reversed). Internal consistency was good ( $\alpha=0.81$ ).

**Mate value.** We applied the Self-Perceived Mating Success Scale (Landolt, Lalumière, & Quinsey, 1995) for measuring self-perceived mate value. This 8-item scale include items such as “I receive sexual invitations from members of the opposite sex” and “Members of the opposite sex notice me”. Internal consistency was good ( $\alpha=0.89$ ).

**Religiosity.** The two questions posed to measure level of religious beliefs were identical to those constructed by Bendixen *et al.* (2017) for Norwegian and US samples. The items tap into (1) considering on self as religious, and (2) believing in living by religious doctrines and rules ( $r=0.78$ ). To form a scale, we multiplied the scores of these two items. Higher scores reflect stronger religiosity.

### Statistical Analyses

For testing the hypotheses of the effectiveness of each flirtation tactic, we applied a  $2 \times 2 \times 2$  (Sex of actor  $\times$  Mating context  $\times$  Nation) univariate analysis of variance (ANOVA). Hypothesis involving the effect of individual differences on effectiveness judgement will be tested using analysis covariance (ANCOVA) adding one covariate at the time to the above ANOVAs.

## Results

### Tactic Descriptives, Initial Analyses, and Validation Tests

An overall presentation of the 10 highest rated flirtation tactics when applied by women and men in short-term and long-term mating contexts is found in Table 1. Six of the 10 tactics overlapped on the top-10 list for women and men in the short-term context, but the tactics that were judged most effective for women for a one-night stand were exclusively sexual or physical. In contrast, men were judged more effective if they, in addition to physical and sexual tactics, also smiled, showed interest in conversations, gave compliments, and made her laugh.

Tactics employed for long-term mating were more similar for women and men (nine out of ten overlapped). There is also a greater overlap between short-term and long-term tactic effectiveness for men (six tactics) than for women (three tactics).

Because participant sex composition was not equal across nations (Norway: 56% women, US: 69% women),  $\chi^2$  (1,  $N=991$ ) = 18.78,  $p < .001$ , preliminary analyses of all relevant outcome variables were tested for participant sex, nation, and participant sex  $\times$  nation interaction effects. Across the 10 outcome variables there were no significant participant sex  $\times$  nation

**Table 1.** Ranking of the 10 Tactics Rated Most Effective for Men and Women Across Mating Contexts. Scores: 1 (Not Very Effective) – 7 (Very Effective).

Women		Men	
Short-Term Mating Context	Mean	Short-Term Mating Context	Mean
1. Has sex	6.41	1. Makes her laugh	5.99
2. Kisses on the mouth	6.12	2. Smiles	5.92
3. Rubs against	6.05	3. Has sex	5.87
4. Makes body contact	5.80	4. Kisses on the mouth	5.83
5. Moves closer	5.76	5. Makes body contact	5.68
6. Dresses sexy	5.70	6. Shows interest in conversations	5.63
7. Dances with him	5.58	7. Dances with her	5.59
8. Dresses to impress	5.54	8. Laughs/giggles at jokes	5.56
9. Touches arm	5.48	9. Gives compliments	
10. Laughs/giggles at jokes		10. Moves closer	
Long-term Mating Context	Mean	Long-term Mating Context	Mean
1. Makes him laugh	6.17	1. Makes her laugh	6.40
2. Shows interest in conversations	6.16	2. Spends time with her	6.32
3. Spends time with him	6.07	3. Shows interest in conversations	6.28
4. Engages in deep conversations	5.93	4. Engages in deep conversations	6.05
5. Kisses on the mouth	5.83	5. Smiles	5.95
6. Smiles	5.83	6. Kisses on the mouth	5.86
7. Makes body contact	5.79	7. Says "I love you"	5.81
8. Laughs/giggles at jokes	5.65	8. Gives compliments	5.65
9. Says "I love you"		9. Laughs/giggles at jokes	5.61
10. Has dinner with him		10. Has dinner with her	

interactions. However, there was some main effects of nation in four of the tactics: Display ( $d=0.38$ ), Initial contact ( $d=0.16$ ), Generosity ( $d=0.52$ ), and Seeking attention ( $d=0.13$ ). All were rated more effective in the US sample. Participant sex differences were significant, but the effects were small for the following scales: Initial contact ( $d=-0.16$ ), Seeking attention ( $d=-0.16$ ), Humor production ( $d=-0.18$ ), and Humor response ( $d=-0.16$ ); all rated higher in women. Given the general lack of participant sex effect, and no moderation effect of sex on the nation effects, we omitted sex of participant from the later analysis.

Finally, we compared differences in level of religiosity and sociosexuality between the Norwegian and US participants in this study with those reported in Bendixen and colleagues (2017). Similar to Bendixen *et al.* ( $\eta_p^2 = .262$ ,  $d = 1.19$ ), US participants reported markedly higher levels of religiosity in this study ( $\eta_p^2 = .192$ ,  $d = 0.97$ ). On the other hand, Norwegian participants scored moderately higher on sociosexual behavior ( $d = 0.62$ ) and attitudes ( $d = 0.48$ ), while the desire component of sociosexuality did not differ much between Norwegian and US

**Table 2.** Flirtation Tactic Effectiveness Judgment for Testing Hypothesis 1 (Marginal Means are Controlled for Nation).

Tactics	Mating context			
	Short term		Long term	
	MM	95% CI	MM	95% CI
Display body and dress sexy (3 items, $\alpha = .65$ )				
Men	4.92	[4.78–5.06]	4.46	[4.32–4.59]
Women	5.42	[5.28–5.55]	4.50	[4.37–4.64]
Friendly contact (4 items, $\alpha = .72$ )				
Men	4.54	[4.40–4.68]	5.11	[4.98–5.25]
Women	4.25	[4.11–4.38]	5.03	[4.89–5.17]
Initial phase physical contact (4 items, $\alpha = .77$ )				
Men	5.37	[5.28–5.50]	5.09	[4.96–5.22]
Women	5.55	[5.42–5.68]	5.06	[4.93–5.18]
Sexualized physical contact (4 items, $\alpha = .73$ )				
Men	5.00	[4.87–5.13]	4.86	[4.84–4.99]
Women	5.80	[5.67–5.92]	5.28	[5.15–5.41]

Note. Men and women are the sex of the actor. Scale scores ranged from 1 (not very effective), through 4 (moderately effective) to 7 (very effective). MM = Marginal Means, CI = Confidence interval.

participants ( $d = 0.22$ ). These latter results were also very similar to those reported in Bendixen *et al.* (2017).

### Sexual Availability Tactics

Flirtation tactics that included display of body, and dress sexy/ dress to impress were rated more effective when employed by women ( $MM = 4.96$ ) than when employed by men ( $MM = 4.69$ ),  $F(1, 927) = 15.98$ ,  $p < .001$ ,  $\eta_p^2 = .017$ . These tactics were rated more effective in short-term mating ( $MM = 5.17$ ) than in long-term mating ( $MM = 4.48$ ) contexts,  $F(1, 927) = 99.58$ ,  $p < .001$ ,  $\eta_p^2 = .097$ . The effect of Sex of actor was moderated by Mating context,  $F(1, 927) = 9.92$ ,  $p = .002$ . As shown in Table 2, it was women who used body display as a tactic in a short-term mating context who were rated more effective, as predicted by Hypothesis 1. There was an overall effect of Nation,  $F(1, 927) = 40.32$ ,  $p < .001$ ,  $\eta_p^2 = .042$ , suggesting that this tactic was rated more effective in the US sample ( $MM = 5.02$ ) than in the Norwegian sample ( $MM = 4.57$ ). Nation did not have any moderating effects of Sex of actor and Mating context. Hypothesis 8 was not supported given the lack of participant sex effect in the initial analyses. Overall, the model accounted for 14.9% ( $R_{adj}^2$ ) of the variance in ratings of tactic effectiveness.

Flirtation tactics that were characterized by friendly contact (hug, kiss on the cheek, tickle, etc.) were rated slightly more effective when employed by men ( $MM = 4.83$ ) than by women ( $MM = 4.64$ ),  $F(1, 924) = 6.21$ ,  $p = .013$ ,  $\eta_p^2 = .007$ , and markedly more effective in long-term ( $MM = 5.07$ ) than in short-term ( $MM = 4.39$ ) mating contexts,  $F(1, 924) = 95.85$ ,  $p < .001$ ,  $\eta_p^2 = .094$ . The Sex of actor did not moderate the effect of Mating context ( $p = .161$ ). Further, there was no difference in ratings of effectiveness between the Norwegian and the

US samples, and Nation did not moderate any of the above effects. The model accounted for 9.9% of the variance in ratings of tactic effectiveness.

Flirtation tactics that covered initial phase physical contact were not rated more effective when employed by women ( $MM = 5.32$ ) than when employed by men ( $MM = 5.21$ ),  $F(1, 926) = 3.39$ ,  $p = .066$ , but were rated more effective when employed in short-term ( $MM = 5.46$ ) than in long-term ( $MM = 5.07$ ) mating contexts,  $F(1, 926) = 34.69$ ,  $p < .001$ ,  $\eta_p^2 = .036$ . There was partial support for Hypothesis 1 as short-term mating context was rated as most effective, but there was no difference between women and men. The US sample rated this tactic significantly more effective than the Norwegian sample,  $F(1, 926) = 10.28$ ,  $p = .001$ ,  $\eta_p^2 = .011$ , but Nation did not moderate the effect of mating context ( $p = .087$ ). The model accounted for 4.8% of the variance in ratings of tactic effectiveness.

Sexualized physical contact as a flirtation tactic was rated markedly more effective when employed by women ( $MM = 5.53$ ) than by men ( $MM = 4.93$ ),  $F(1, 924) = 89.07$ ,  $p < .001$ ,  $\eta_p^2 = .089$ . Further, this tactic was rated more effective in short-term ( $MM = 5.40$ ) than in long-term ( $MM = 5.07$ ) mating contexts,  $F(1, 924) = 25.34$ ,  $p < .001$ ,  $\eta_p^2 = .027$ , and rated particularly effective for women in short-term mating contexts (significant Sex of actor  $\times$  Mating context interaction),  $F(1, 924) = 9.54$ ,  $p = .002$ . Again, this was in accordance with Hypothesis 1. There was no difference in rating of this tactic across nation, and Nation did not moderate any of the other effects. The model accounted for 11.5% of the variation in tactic effectiveness ratings.

### Generosity and Other Long-Term Mating Tactics

Tactics involving generosity (cues to investment) were rated markedly more effective when employed by men ( $MM = 4.55$ ) than by women ( $MM = 3.73$ ),  $F(1, 925) = 101.22$ ,  $p < .001$ ,  $\eta_p^2 = .099$ , and more effective in long-term ( $MM = 4.51$ ) than in short-term ( $MM = 3.76$ ) mating contexts,  $F(1, 925) = 93.06$ ,  $p < .001$ ,  $\eta_p^2 = .091$ . This tactic was rated least effective for women in short-term mating contexts (see Table 3) producing a significant Sex of actor  $\times$  Mating context interaction,  $F(1, 925) = 4.09$ ,  $p = .044$ . This was in support of Hypothesis 2 where such tactics were predicted to be most effective when employed by men and in a long-term context. Generosity was generally rated markedly more effective in the US ( $MM = 4.47$ ) than in the Norwegian ( $MM = 3.73$ ) sample,  $F(1, 925) = 90.80$ ,  $p < .001$ ,  $\eta_p^2 = .089$ , and particularly so for men in long-term mating contexts ( $MM = 4.99$ ), producing a Sex of actor  $\times$  Nation interaction effect,  $F(1, 925) = 10.39$ ,  $p = .001$ . Nation did not moderate any of the other effects. These factors accounted for 24.5% of the variance in ratings of tactic effectiveness.

Taking part in intimate conversations is one way of signaling commitment. This tactic was rated more effective when used by men ( $MM = 5.34$ ) than by women ( $MM = 4.90$ ),  $F(1, 925) = 38.82$ ,  $p < .001$ ,  $\eta_p^2 = .040$ . This tactic was rated massively more effective when employed in long-term ( $MM = 5.92$ ) compared to short-term ( $MM = 4.30$ ) mating contexts,  $F(1, 925) = 564.65$ ,  $p < .001$ ,  $\eta_p^2 = .379$  (corresponding to a

Cohen's  $d = 1.56$ ). The latter effect was moderated by Sex of actor,  $F(1, 925) = 9.76, p = .002$ , suggesting that the mating context effect was stronger for women due to low ratings in short-term mating contexts (see Table 3). Both findings were in support of Hypothesis 3. The effect of intimate conversations was rated somewhat more effective in the US ( $MM = 5.20$ ) than in the Norwegian ( $MM = 5.02$ ) sample,  $F(1, 925) = 7.13, p = .008, \eta_p^2 = .008$ , and there was a stronger Mating context difference in the Norwegian sample relative to the US sample (significant interaction,  $F(1, 925) = 8.43, p = .004$ ). Nation did not moderate any other effects. Overall, the model accounted for fully 40.0% of the variance in tactic effectiveness ratings.

Spending time is another way of commitment signaling. This tactic was rated somewhat more effective when employed by men ( $MM = 5.01$ ) compared to women ( $MM = 4.79$ ),  $F(1, 927) = 10.35, p = .001, \eta_p^2 = .011$ , and markedly more effective when employed in long-term ( $MM = 5.37$ ) compared to short-term ( $MM = 4.42$ ) mating contexts,  $F(1, 927) = 226.32, p < .001, \eta_p^2 = .196$  (Cohen's  $d = 0.99$ ). Again, the effect of Mating context was moderated by Sex of actor,  $F(1, 927) = 13.33, p < .001$  due to relatively low ratings for women signaling that they want to spend time in short-term contexts. These findings were in support of Hypothesis 4. There was no effect of Nation, but the Mating context effect was stronger in the Norwegian sample, producing a significant Nation  $\times$  Mating context interaction,  $F(1, 927) = 17.09, p < .001$ . Nation did not moderate any other effects, and the model accounted for 21.4% of the variance in effectiveness ratings for spending time.

### Non-Intimate Seeking Attention and Humor Tactics

Seeking attention and contact through comments, chats, and compliments was rated more effective for men ( $MM = 5.09$ ) than for women ( $MM = 4.86$ ),  $F(1, 925) = 11.39, p < .001, \eta_p^2 = .012$ , and more effective in long-term ( $MM = 5.17$ ) than in short-term ( $MM = 4.77$ ) mating contexts,  $F(1, 925) = 37.71, p < .001, \eta_p^2 = .039$ . The finding of more effectiveness in long-term than short-term context provides no support for Hypothesis 5. There was no effect of Nation ( $p = .089$ ) in this model (that also included mating context as opposed to the small differences found in the initial analyses), and none of the interaction effects were significant. The model accounted for 5.1% of the variance in effectiveness ratings.

Tactics involving humor production were rated more effective when employed by men ( $MM = 5.94$ ) than by women ( $MM = 5.64$ ),  $F(1, 923) = 22.01, p < .001, \eta_p^2 = .023$ , and more effective in long-term ( $MM = 5.96$ ) than in short-term ( $MM = 5.61$ ) mating contexts,  $F(1, 923) = 29.54, p < .001, \eta_p^2 = .031$ . In addition, the effect of Sex of actor was significantly moderated by Mating context,  $F(1, 923) = 12.62, p < .001$ . Women in short-term mating contexts were rated relatively less effective using this tactic (See Table 4). None of the remaining effects were significant, and the model accounted for 6.1% of the variance in effectiveness ratings. This was partly supportive for Hypothesis 6 as men in long-term context were not rated as more effective than women in long-term context.

**Table 3.** Flirtation Tactic Effectiveness Judgment for Testing Hypothesis 2, 3, and 4 (Marginal Means are Controlled for Nation).

Tactics	Mating context			
	Short term		Long term	
	MM	95% CI	MM	95% CI
Generosity (4 items, $a = .79$ )				
Men	4.26	[4.11–4.42]	4.84	[4.68–4.99]
Women	3.27	[3.12–3.43]	4.19	[4.03–4.34]
Commitment/Intimate conversation (4 items, $a = .79$ )				
Men	4.63	[4.49–4.77]	6.04	[5.90–6.17]
Women	3.97	[3.83–4.10]	5.81	[5.67–5.95]
Spending time (4 items, $a = .75$ )				
Men	4.65	[4.52–4.78]	5.36	[5.24–5.49]
Women	4.19	[4.06–4.31]	5.38	[5.25–5.50]

Note. Men and women are the sex of the actor. Scale scores ranged from 1 (not very effective), through 4 (moderately effective) to 7 (very effective). MM = Marginal Means, CI = Confidence interval.

**Table 4.** Flirtation Tactic Effectiveness Judgment for Testing Hypothesis 5, 6, and 7 (Marginal Means are Controlled for Nation).

Tactics	Mating context			
	Short term		Long term	
	MM	95% CI	MM	95% CI
Seeking attention and contact (4 items, $a = .70$ )				
Men	4.92	[4.79–5.05]	5.25	[5.12–5.38]
Women	4.62	[4.50–4.75]	5.09	[4.96–5.22]
Humor production (2 items, $r = .44$ )				
Men	5.89	[5.76–6.02]	6.00	[5.87–6.12]
Women	5.34	[5.21–5.47]	5.92	[5.80–6.05]
Responses to humor (1 item)				
Men	5.59	[5.43–5.75]	5.65	[5.50–5.80]
Women	5.48	[5.32–5.63]	5.83	[5.68–5.99]

Note. Men and women are the sex of the actor. Scale scores ranged from 1 (not very effective), through 4 (moderately effective) to 7 (very effective). MM = Marginal Means, CI = Confidence interval.

Finally, we looked at responses to humor. We found that laughing or giggling at someone's jokes did not differ for men and women ( $p = .539$ ), but it was rated slightly more effective when done in long-term ( $MM = 5.74$ ) than in short-term ( $MM = 5.53$ ) mating contexts,  $F(1, 922) = 8.22, p = .004, \eta_p^2 = .008$ . Hypothesis 7 was not supported. This effect was moderated by Nation,  $F(1, 922) = 4.85, p = .028$ . The marginal means shows that this tactic was relatively less effective in short-term mating contexts in Norway (but still effective,  $MM = 5.39$ ).

### Analyses of Covariates (Individual Differences)

The following variables were added to the above analyses as covariates: sociosexuality, extraversion, mate value, and religiosity. For the whole sample (not disaggregating into sex, nation, short-term or long-term mating contexts), the associations

**Table 5.** Zero-Order (Pearson's *r*) Associations Between Flirtation Tactics and the Four Covariates.

	SOI-R	Mate Value	Extraversion	Religiosity
Display body and dress sexy	-0.01	0.09	-0.01	0.09
Friendly contact	-0.10	-0.03	-0.03	0.05
Initial phase physical contact	0.05	0.13	0.06	0.01
Sexualized physical contact	0.08	0.09	0.04	0.01
Generosity	-	0.02	-0.06	0.12
Intimate conversation	0.16	-0.03	-0.03	0.06
Spending time	-	0.02	0.03	0.02
Seeking attention	0.11	0.11	0.07	-0.01
Humor production	-	0.13	0.14	-0.00
Responses to humor	0.05	0.11	0.07	-0.02
	0.01			
	0.05			
	0.01			

Note. SOI-R = Sociosexual Orientation Inventory Revised.

between these four variables and the 10 flirtation tactics were generally very small (see Table 5). The strongest association was found for sociosexuality and generosity, suggesting that unrestricted participants rated generosity somewhat less effective.

Given these associations, we would not expect the covariates to affect the effectiveness ratings for many of the flirtation tactics. When adding sociosexuality to the analyses of generosity, sociosexuality had a main effect on the ratings ( $p = .033$ ), but it did not moderate the effects of the other predictors (sex of actor, mating context, or nation). A similar finding was evident for the effect of mate value on initial physical contact (main effect,  $p < .001$ , but no moderation effects). Apparently, these individual differences do not have much of an impact on the flirtation tactic effectiveness judgements, indicating no support for Hypotheses 9–12.

## Discussion

This large-scale study attempts to measure the perceived efficacy of flirtation tactics across two cultures using Sexual Strategies Theory (SST), and provides valuable insights into flirting based on sex, mating context, and culture. There was consensus across the sexes as to which flirtation tactics are most effective and in which mating context they are most effective. In addition, the most robust SST hypotheses are supported in this study, in both samples as well as the total sample, dovetailing neatly with the findings from the work on other mate acquisition tactics (Bendixen & Kennair, 2015; Schmitt & Buss, 1996), most recently in a Greek cultural context (Apostolou, Wang, & Gavriilidou, 2021). It also supports the established research on humor's role in attraction and mate value.

As was predicted (H1), flirtation tactics that included cues to sexual availability such as displaying the body, dressing sexy, and sexualized physical contact were judged as more effective

when they are employed by women in a short-term mating context. Less sexual, friendly contact was not. The taxonomy of flirtation tactics has therefore become more finely differentiated with the post hoc analyses in this study, highlighting how different types of contact seeking behavior may be perceived as more or less friendly or sexual. It is important to note that H1 was formulated with more sexually laden physical contact behaviors in mind, and that the more the behaviors were in line with that reasoning the larger the sex difference was and thus the more the prediction was supported.

Additionally (H2–H4), flirtation tactics that included cues to generosity and commitment, like intimate conversation and spending time together, were judged as more effective when they were employed in a long-term mating context, specifically by men. In line with SST, both sex and mating context are relevant for flirtation tactics, especially these most robust predictions based on previous research. Overall, these data thus support work initiated by Schmitt and Buss (1996), creating consistency of findings on the effectiveness of different mate acquisition tactics within specific domains across time and culture.

The prediction that seeking attention and contact through comments, chats, and compliments would be more effective in a short-term context (H5) was not supported. However, these comments and compliments may be perceived, particularly by women, as a form of investment, just as intimate conversations were. Women did find these effective in a long-term context, just as they did intimate conversations. Verbal investment or committed attention, such as light conversations/chats, compliments, random comments, and texts, even if it is not prolonged or intimate, may signal continued (even if small) investment. Hess, Fannin, and Pollom (2007) identified three strategies men and women used for increasing closeness in romantic relationships; openness (willingness to share personal information, to seek out and share time together), attention (attending to and trying to remember the other's messages), and involvement (making the effort to be alone with the other). It is this effect that committed attention has on *closeness* that may be key to it being perceived as effective in long-term contexts.

The differences in humor (H6) were particularly interesting, even if they were expected. Humor production was rated as more effective when used by men and more effective in long-term contexts, and the least effective when used by women in short-term contexts. However, responding to humor through laughing or giggling (H7) was considered an equally effective flirtation tactic for both men and women. Laughing at someone's jokes, regardless of whom they are, is seen as effective flirting. In addition, there was no support for participant sex differences in perceptions of flirtation tactics (H8). Male participants did not find sexual availability tactics more effective than women.

## Individual Differences

Overall, the predictions on individual differences, such as sociosexuality, extraversion, mate value, and religiosity, were not supported (H9–H12). More importantly, for the whole sample, the associations between these four variables and

flirtation tactics were very small (see Table 5). Of these variables, sociosexuality showed the greatest effects. Yet, even then, the effect was small and it did not moderate the effects of other predictors. This is in line with Bendixen and Kennair (2015), who found significant associations with SOI and increased perceived effectiveness of sexual availability tactics on the one hand and reduced perceived effectiveness of signaling love and commitment tactics on the other. Further, Howell, Etschells, and Penton-Voak (2012) found that people high in sociosexuality, regardless of sex, perceived potential mates as more flirtatious. One would expect that those high in SOI would rate any number of tactics as more effective for flirting, and yet the strongest association was found in unrestricted participants rating generosity somewhat less effective. One issue here may be context. While Penke and Asendorpf (2008) studied flirting and SOI, they assumed this was with the goal of short-term mating, an assumption specifically acknowledged in a footnote in the study. In this study, flirting behaviors that were rated as more effective in long-term contexts in the sample as a whole were rated (albeit slightly) lower in effectiveness as SOI rose. If high SOI individuals do flirt with the express goal of short-term mating as Penke and Asendorpf (2008) assumed, their ratings would (and do) shift in this direction based on mating context. However, this still does not explain the lack of clear-cut differences in SOI ratings by mating context in the sample. Mating context may not have mattered for SOI ratings since short-term mating may be used to test for long-term mate potential (Schmitt & Buss, 1993). Overall, restricted as well as unrestricted individuals may be flirting to secure long-term mates. However, the individual factors may be primarily relevant for participants when they themselves are in a flirting situation.

### Cultural Differences

It is important to note that some cultural differences were found in perceived flirting effectiveness. In particular, the US sample rated bodily displays and initial contact as more effective flirting techniques. The US participants also rated generosity as an effective strategy, but particularly male generosity in long-term mating contexts. While the U.S. and Norway may be expected to be similar, as they are both WEIRD (Western, Educated, Industrialized, Rich, and Democratic) samples (Henrich, Heine, & Norenzayan, 2010), they do meaningfully diverge on aspect relevant to the current topic; especially on gender equality, sexual liberalism (sociosexuality) and religiosity as found in this and in a comparable previous study (Bendixen et al., 2017). This may provide an interesting, albeit indirect insight; that some variation persists even in cultures meeting the restrictive criteria of WEIRD samples, and further investigation could identify specific cultural factors (like the items listed above) that trigger similar behavioral patterns in other cultures. However, these current research findings show that this cultural variation is overshadowed by consistent differences based on sex and mating context.

### Limitations and future research

Despite being a pre-registered study, the factorial design with participants being randomly assigned to one of four conditions, and having previous research to build upon, there are limitations involved in how specific such a plan for research is specified. In the current project we noticed that we should have been more detailed in how we defined specific groups of tactics: the factor analysis thus is *post hoc* and more specific than the preregistration. However, the preliminary analyses of the Norwegian results panned out in the American data. Thus, we have an internal replication; there were no interactions with nation. The universality and replicability of the current findings needs to be addressed in future studies, preferably employing non-WEIRD samples (Henrich, Heine, & Norenzayan, 2010). The current research included heterosexual participants only, which some might think is also a limitation. However, recent research with United States and Canadian participants indicates that sexual orientation does not predict flirting techniques (Clark, Oswald, & Pedersen, 2021).

Regarding the individual characteristics studied: SOI, mate value, extraversion, and religiosity, it appears that the hypothetical nature of the study plays a key role. Participants appear to be able to discern the effectiveness of a flirtation tactic regardless of their tendency or desire to engage in said tactic. While this seems like an obscure or insignificant observation, this is important for research in sexuality, especially in younger samples; a participant does not have to be actively engaging in a romantic or sexual behavior to recognize its effectiveness. In fact, by framing the study in this way, researchers can remove obstacles that are found in studying performed behaviors. For example, Penke and Asendorpf (2008) found that behaviors in high SOI individuals were limited by their relationship status and their partners' sexual preferences. Those limitations were removed in this current experimental framework.

There are many diverse possible behaviors that may be included under the heading of flirtation tactics (Wade & Feldman, 2016). While some of these are verbal and others non-verbal, still others may be categorized according to different domains of content, such as generosity or sexual availability, as in this study. While the current work attempted to organize and categorize a varied cache of flirtation tactics, more work on the taxonomy of the many possible different flirtation tactics is warranted, building on the current factor analysis. In addition, the combination of these categories can be explored. Men and women often combine tactic categories to test and increase their effectiveness; men may combine generosity and intimate conversation to indicate multileveled investment, women may combine laughing at jokes and physical touch to indicate interest more effectively. These combinations warrant further study. Such combination might also include the added effect of a factor that seemed fundamental in the Norwegian dataset, but that, alas, was not included in the American study: Smiling and establishing eye contact. These and other more precise future predictions will be informed by better defined groups of tactics.

## Conclusion

Across two samples from different cultures, that vary in both religiosity and sexual liberalism (Bendixen et al., 2017), we found support for Sexual Strategies Theory's predictions of the most clear-cut groups of tactics, dovetailing with similar findings from the self-promotion and competitor derogation literature (Apostolou et al., 2021; Bendixen & Kennair, 2015; Schmitt & Buss, 1996). These cross-cultural findings provide support for Eibl-Eibesfeldt and Hass (1967) and Luscombe (2008, January) reports that flirting is universal since the most effective flirtatious actions are the same for the Norwegian and US samples. Flirtation tactics that signal sexual availability are judged as most effective for women in short-term contexts. Flirtation tactics that signal generosity and commitment are judged as most effective when employed by men and in long-term contexts.

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## Supplemental Materials and Data

Anonymous materials and data are uploaded as supplemental to this submission. Links to OSF data and materials will be made available before publication.

## Notes

- 1 The item «Makes eye contact» was by mistake omitted from the US sample, leaving 39 tactics for analysis.
- 2 Fundamental communication skills such as smiling and making eye contact were excluded from the analysis (2 items,  $\alpha = .70$  in the Norwegian sample), because “making eye contact” was omitted from the US measure.
- 3 Marginal Means

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