IF YOU WORK IT, FLAUNT IT

Conspicuous display of exercise efforts increases mate value
ABSTRACT

Three studies show that conspicuous display of exercise efforts serves as a signal of healthiness that increases mate value of the sender. Moreover, we demonstrate that the signal qualifies itself as a costly signal, so that senders use it as a self-promotion tactic in mating.

INTRODUCTION

Technology has changed the way that we exercise (Etkin, 2016). Before social media, hard work in the gym was only recognized by an improved posture. Nowadays, some people admit that they do it ‘for the gram’ (i.e., exercising with the goal of posting a picture on Instagram) and the following rewarding notifications of their friends (Marshall, Lefringhausen, & Ferenczi, 2015). But, could the posting of gym visits possibly also serve other purposes besides receiving encouragements?

Considering that social media are important tools in self-presentation management (Baumeister, 1982; Nadkarni & Hofmann, 2012), sharing exercise efforts could perhaps be a self-presentation strategy, that is a strategy to self-promote valued characteristics to enhance others’ perceptions of oneself. Building on costly signaling literature (Bird, Smith, & Bird, 2001) and evolutionary theories on human mating strategies (Buss, 1988; Griskevicius et al., 2007; Griskevicius & Kenrick, 2013), we propose that conspicuous display of exercise efforts serves as a self-promotion tactic in mating. Specifically, from an evolutionary point of view, it is important to seek out healthy partners (Buss, 1988; Eastwick & Finkel, 2008). As it is difficult to directly observe potential partners’ healthiness, we are hardwired to infer this from specific physical cues, such as facial symmetry (Grammer & Thornhill, 1994; Rhodes et al., 2007; Shackelford & Larsen, 1999). However, individuals nowadays might recognize the potential of social media to show off healthiness more directly, for example by sharing their exercise efforts, rather than having peers judge their healthiness exclusively on the basis of physical cues (Grammer & Thornhill, 1994).

HYPOTHESES DEVELOPMENT

We suggest that the act of posting about work-outs qualifies as a costly signal in mating. Costly signals appear to be useless at first sight, however, they signal important underlying characteristics that contribute to reproductive success (Nelissen & Meijers, 2011; Zahavi et al., 1997). Hence, as a first criterion (of four), the costly signal should be interpreted as an indicator of a valued trait. As such, people should thus infer from others’ exercise posts that the ‘poster’ is healthy.

H1: Conspicuous display of exercise efforts (vs. not doing so) leads to enhanced perceptions of health.

We acknowledge that people using the signal might not only be perceived as more healthy, but also as more physically attractive. However, we expect the signal to increase mate value because of enhanced healthiness perceptions, even when controlling for physical attractiveness (see: Jones et al., 2001; Rhodes et al., 2007). This higher attributed mate value constitutes the required benefit of the signal for the sender (i.e., second criterion).

H2: Conspicuous display of exercise efforts (vs. not doing so) leads to a higher attributed mate value, because of increased healthiness perceptions.
Furthermore, individuals should send the signal in the appropriate context (Wang & Griskevicius, 2014). We expect that activating a mating motive will trigger both sexes to show off work-outs to display health (Buss, 1988; Eastwick & Finkel, 2008). In doing so, they increase exposure for their signal via social media, thus conforming with the highly visible nature of a costly signal (i.e., third criterion).

Because individuals with inflated self-views share more posts related to self-promotion (Carpenter, 2012), we assume that self-reported mate value (i.e., how attractive people think they are as a partner) will positively relate to one’s baseline level of sharing work-outs on social media. For people high in self-perceived mate value, a mating mood may not induce an additional increase in sharing work-out-related posts. In contrast, people with a lower self-reported mate value should become more willing to show off work-outs when in a mating mood.

**H3:** A mating (vs. control) motivation increases the willingness to conspicuously display exercise efforts when self-reported mate value is low, but not when self-reported mate value is high.

Lastly, the signal should involve a cost in terms of a limited resource (i.e., fourth criterion), which is the case for work-outs that require high energy expenditure. Consequently, people in a mating mood should especially be willing to show off posts about activities involving a high energy cost (f. ex., running) versus low energy cost (f. ex., reading). Moreover, the signal will only be effective if senders reach their target audience. Hence, we expect individuals in a mating mood to like it more that their shared posts are noticed by a potential mate, however, this will only be the case for high energy cost posts.

**H4:** A mating (vs. control) motivation leads senders to like it more that potential mates notice their high energy posts, but not their low energy posts.

Study 1 explores how receivers perceive the signal (H1-2). Studies 2 (H3) and 3 (H4) concern the senders’ perspective and examine the context and nature of the signal in more detail.

**STUDY 1**

**Method**

MTurk participants (n = 201; 108 M; Mage = 36.02) evaluated a person based on a social media profile and were randomly assigned to the profile content: work-out posts (n = 101) versus non-work-out posts (n = 100). The posts were five landscape pictures with a caption on it. The pictures and two filler posts were identical. Only the captions of three posts differed between-subjects, referring to work-outs in the work-out condition and non-work-outs in the non-work-out condition, see Figure 1. The gender of the person’s profile (Tom or Megan) was defined by the (or one of the) participant’s sexual orientation preference(s), so that the signal was evaluated by someone of the intended audience and we provided a picture of Tom/Megan to minimize physical attractiveness inferences. A pretest confirmed that the (non-)work-out activities were perceived as such and that Tom/Megan were rated as equally physically attractive.

After seeing the posts, participants assessed the mate value of Tom/Megan using the 4-item, 7-point ‘Mate Value Scale’ (α = .89) (Edlund and Sagarin, 2014). Perceived healthiness and physical attractiveness were measured on a 7-point Likert-scale.
Results

The signal was correctly interpreted, as Tom/Megan was perceived as being healthier in the work-out condition ($M_{\text{work-out}} = 6.08$ vs. $M_{\text{no-work-out}} = 5.42$; $t(199) = -4.09$, $p < .001$), confirming $H_1$.

A mediation model (model 4 PROCESS; Hayes, 2013) tested whether perceived healthiness mediates the effect of showing off exercise efforts on mate value. The gender of the persons’ profile (Tom/Megan) was a non-significant covariate and is not included in the analysis. Physical attractiveness was (marginally) significantly higher in the work-out condition ($M_{\text{work-out}} = 5.53$ vs. $M_{\text{no-work-out}} = 5.17$; $t(199) = -1.91$, $p = .057$), therefore, we included the variable as covariate in the model.

The results show a significant indirect effect of the mediation path through perceived healthiness ($b = .14$; SE = .06, 95% CI: [.04, .30]). The remaining direct effect of posting work-out pictures on perceived mate value was not significant ($b = -.19$, SE = .12, $p = .118$), indicating that it is fully mediated by perceived healthiness (Rucker, Preacher, Tormala & Petty, 2011). So, even when controlling for physical attractiveness inferences, showing off work-outs appear to increase mate value because of enhanced healthiness perceptions. Moreover, when adapting the model so that physical attractiveness is the mediator and perceived healthiness is the covariate, the mediation no longer holds ($b = -.02$; SE = .07, 95% CI: [-.16, .11]). These results confirm $H_2$.

STUDY 2

Method

Hundred and two participants were recruited (73W; $M_{\text{age}} = 22.61$) in exchange for a monetary reward. Participants were randomly assigned to a mating ($n = 56$) or control condition ($n = 46$). In the mating condition, they were asked to think back and write about a situation in which they felt sexually aroused to evoke mating related emotions and goals (see: Ainsworth & Maner, 2012; Griskevicius et al., 2007), while in the control condition participants thought and wrote about a moment wherein they felt very happy, in order to match the level of valence and arousal of the mating condition (Maner et al., 2007). Manipulation checks were performed after the writing task and confirmed that the task evoked the right emotions and motivations.
In a second task, the cover story informed participants that a brand, producing wearable activity trackers, wants to know which of the tracked sports that users have performed they would like to share (i.e., type of activity and duration) with their network in the corresponding social application. Participants were asked to imagine that they owned such an activity tracker and imagined for three different (pretested) work-out activities separately that they had performed the activity. Next, they filled in the ‘Intention to Give Information’ 3-item, 7-point scale of Mackenzie & Spreng (1992) to indicate for each activity to what extent they would be willing to share the work-out. Lastly, participants assessed their own mate value by means of the ‘Mate Value Scale’.

Results

A moderated regression analysis (model 1 PROCESS; Hayes, 2013) tested whether (mean-centered) self-reported mate value moderates the effect of an active mating motive on sharing intentions of the three work-outs ($\alpha = .94$). Relationship status and gender appeared to be non-significant covariates and are not included in the analysis.

The main effect of self-reported mate value on sharing intentions was significant ($b = .81; SE = .30, 95\% CI: [.21, 1.40]$); higher self-reported mate value was positively related to sharing intentions of work-outs. The main effect of mating motivation was not significant ($b = .19; SE = .32, 95\% CI: [-.44, .83]$). However, a significant interaction effect was found between motive and self-reported mate value ($F(1,98) = 4.67, p = .033; Johnson-Neyman point = 3.57$). Individuals feeling low in mate value and having an active mating motivation are more willing to share exercise efforts, confirming $H_3$.

STUDY 3

Method

Hundred and six undergraduates of a large West European university ($47 M; M_{age} = 21.97$) participated in a lab study in exchange for a course credit. The study applied a mixed design with one two-level between-subjects factor, namely mating ($n = 57$) versus control motivation ($n = 49$), and one two-level within-subjects factor, namely the cost involved in the shared activity (high vs. low energy cost).

First, they completed the same writing task as in study 2. Again, the manipulation check confirmed that the right emotions and motivations were evoked by the writing task. The second task was presented as a study about social media. For this task, we created six social media posts (similar to S1); three referring to a high energy cost activity (i.e., work-out; e.g., “morning run”) and three to a low energy cost activity (i.e., no work-out; e.g., “reading view”). Perceived energy cost of the activities was pretested to differ significantly. For each social media post, participants had to imagine that they had shared it on a social media channel of their choice. Next, they rated on a 9-point Likert-scale to what extent they would like it that (1) an attractive man or (2) attractive woman would see it. According to their sexual orientation, we created a new variable reflecting the likeability that the social media post is seen by an attractive individual of (or one of) the sex(es) they are interested in.

Results

We ran a multi-level model (Maximum Likelihood estimation) with participants and social media posts as higher-level variables, considering that each participant rated each of the six social media posts. Both motivation and cost of the signal served as first level predictors in
the model. Our dependent variable was the desirability of the social media post being noticed by a potential mate. Participants’ gender and relationship status were added to the model as significant covariates, however, excluding them from the model does not change the meaning of the results.

We found a marginal significant interaction effect of motivation and cost of the signal \(F(1,636) = 3.36, p = .067\). The simple effects analysis shows no differences for low energy cost posts \(F(1,636) = .36, p = .549\). However, for high energy cost posts, desirability is significantly higher in the mating condition \(M_{mating} = 5.50\) vs. \(M_{control} = 4.97; F(1,636) = 10.12, p = .002\). Participants in a mating mood liked it more that their post involving a high energy cost would be noticed by a potential mate, but this was not the case for their low energy cost posts, confirming \(H_4\).

**DISCUSSION**

We first contribute to literature on human mate preferences by demonstrating that showing off exercise efforts acts as a signal of healthiness. Second, we build on costly signaling literature to demonstrate that the signal meets all four criteria to be qualified as a costly signal. Third, we add to literature on fundamental motives, by showing how a mating motivation influences the way we interact with consumer products, such as wearable devices and social media, while also taking more proximate drivers into account (e.g., self-reported mate value).

The study highlights that people are more willing to share user-generated content in a social media community, if this delivers a benefit in terms of their self-presentation, so a first recommendation would be that marketers should facilitate this process. Moreover, since social media engagement is shown to be an important predictor for increased purchase expenditures (Goh, Heng, & Lin, 2013), especially fitness brands could benefit from applying a mating approach in the marketing strategy of their online communities. Lastly, public health promotion campaigns can incorporate these insights, because indeed, if people are willing to show off their work-outs, they should first perform them.

It would be interesting to examine which type (i.e., content) of posts (still) are positively deciphered and to what frequency, because there may be a thin line between positive disclosure and bragging (Packard et al., 2016). Another potential backfire effect of the signal may be its reliability. Research suggests that once people are aware of the fakeness of a signal, there will be no longer a benefit attributed to the sender, making the signal ineffective (Nelissen & Meijers, 2011; Wang & Griskevicius, 2014). Lastly, it is unclear whether the higher attributed mate value by the signal will reflect in higher mate selection too, as this study did not measure actual behavior. Nevertheless, many researchers believe that the mark of evolved mate preferences will be observed in mate selection because of their possession of significant evolutionary functions (Buss & Schmitt, 1993; Wood & Brumbaugh, 2009).
### Table 1. Summary of results

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Perceived Healthiness</th>
<th>Mate Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictors</td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>X: Type of posts</td>
<td>.50</td>
<td>3.58 ***</td>
</tr>
<tr>
<td>ME: Perceived Healthiness</td>
<td>.27</td>
<td>4.45 ***</td>
</tr>
<tr>
<td>COV: Physical Attractiveness</td>
<td>.44</td>
<td>8.70 ***</td>
</tr>
</tbody>
</table>

### Study 2

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$b$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>X: Motive</td>
<td>.19</td>
<td>.60</td>
</tr>
<tr>
<td>MO: Self-Reported Mate Value</td>
<td>.81</td>
<td>2.68 **</td>
</tr>
<tr>
<td>X x MO</td>
<td>-.79</td>
<td>-2.16 *</td>
</tr>
</tbody>
</table>

### Study 3

<table>
<thead>
<tr>
<th>Simple effects</th>
<th>$M$ (SD)</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Energy Cost x Control</td>
<td>5.16(.12)</td>
<td>.36</td>
<td>.549</td>
</tr>
<tr>
<td>Low Energy Cost x Mating</td>
<td>5.26(.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Energy Cost x Mating</td>
<td>5.50(.11)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**General note.** ME = mediator variable; COV = covariate variable; MO = moderator variable; * $p < .05$; ** $p < .01$. *** $p < .001$.

**Note Study 1.** Type of posts coded as 0 = no-work-out posts and 1 = work-out posts.

**Note Study 2.** Motive coded as 0 = control motivation and 1 = mating motivation.
REFERENCES


