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Dominance and deference: Men inhibit creative displays during mate competition when their competitor is strong

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ABSTRACT

Dominance is a form of social status based on an individual's ability to inflict costs (e.g. physical aggression) onto others. Subordinate individuals defer to dominant individuals in order to avoid physical aggression. We hypothesized that relatively subordinate men defer to dominant men by inhibiting creative displays during mate competition. Male participants were led to believe they were competing for a date with an attractive female. Participants believed they were competing against either a strong or weak male. During an interview with the attractive female, participants were prompted to display their creativity to the female by telling funny jokes and interesting stories. We found that participants competing against a strong male were less likely to tell jokes and less likely to tell stories. Additionally, participants competing against a strong male told jokes that were less funny and less elaborate.

1. Introduction

Social status is a salient feature of human social life. The elaborate dance of "how to communicate" is largely governed by our relative social position. Specifically, we engage in *deference* when we are low in relative status. Low status individuals actively signal their low status by speaking softly, speaking in a higher voice, standing with a constricted posture, and smiling more (Benjamin, 1981, 1992; Ellyson & Dovidio, 1985; Argyle, 1994; Puts, Gaulin, & Verdolini, 2006; Ketelaar et al., 2012). Though many particular behaviors associated with deference have been identified, there is a relative paucity of evolutionary psychological research on *why* we defer (but see McGuire, Troisi, & Raleigh, 1997; Preuschoft & van Hooff, 1997; von Hooff, 1972). This paper represents an attempt to further our understanding of the evolutionary psychology of deference in humans.

As deference is closely linked to social status, a good starting point in the investigation of deference is an examination of *dominance*. Dominance refers to an individual's relative access to resources and mates as a function of their ability to inflict costs (e.g. physical aggression) onto others (Henrich & Gil-White, 2001; von Rueden, Gurven, & Kaplan, 2011). Dominance is an important form of social status in many animal species. An individual's position in a dominance hierarchy is largely determined by their relative size and strength, as well as the formidability of the coalitions the individual is a part of (Cowlishaw & Dunbar, 1991; de Waal, 2007). The benefits accrued to dominant individuals include increased access to resources and increased mating opportunities (Henrich & Gil-White, 2001). The association between dominance and increased mating opportunities may be due to dominant individuals' ability to physically monopolize mates, their ability to intimidate rivals into avoiding potential mating opportunities, and/or because they are preferred by females (Puts, 2010). Females may preferentially mate with dominant males due to a preference for resources or because dominance is an indicator of genetic quality (Puts, 2010).

There is a strong consensus amongst researchers that dominance played a significant role in human social life throughout evolutionary history (see Puts, 2010; Pinker, 2011). Evidence from many different avenues of research point towards the importance of dominance in human evolution including ancient skeletal remains indicative of interpersonal violence (e.g. Walker, 2001), sexual dimorphism in strength, size, speed, and aggression (e.g. Mayhew & Salm, 1990; Watson & Kimura, 1991; Kimura, 1999; Hines et al., 2003; Puts, Hodges, Cardenas, & Gaulin, 2007; Lassek & Gaulin, 2009), psychological mechanisms that seem crafted for managing dominance interactions (e.g. Sell et al., 2009), data on the high prevalence of violence throughout human history (e.g. Pinker, 2011), and research on women's mate preferences for physical features and behaviors associated with dominance (e.g. Buss & Schmitt, 1993; Feinberg, Jones, Little, Burt, & Perrett, 2005; Frederick & Haselton, 2007; Horvath, 1981; Pawlowski & Jasienska, 2005; Puts, 2005; Sadalla, Kenrick, & Vershure, 1987; but see Snyder, Kirkpatrick, & Barrett, 2008). Research on the fitness payoffs of dominance conducted in small-scale societies has shown that dominant men have higher

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fertility, engage in more extra-marital affairs, and marry women who are younger and more attractive (von Rueden et al., 2011).

Amongst various animal species subordinate individuals signal their low rank to higher ranked others through acts of deference (see Maynard Smith & Harper, 2003). For example, subordinate wolves will crouch or roll on their backs (Schenkel, 1967) and subordinate chimpanzees will lower their bodies and emit a short sequence of pant-grunts (de Waal, 2007). Deference also occurs within mating contexts as in the case of subordinate male grizzly bears inhibiting mating behavior in the presence of dominant male grizzly bears (Barash, 2012). Acts of deference such as these function to communicate a lack of interest in challenging the existing dominance hierarchy (de Waal, 2007). By deferring subordinate individuals make it clear to higher-ranking members of the social group that they do not want to engage in physical contests over contested resources. As human mating is a highly social enterprise, mating contexts may be fruitful settings in which to search for evolved deference mechanisms in humans.

1.1. Human mating and deference

Throughout evolutionary history, human mating was determined at least partially by female choice (Kirkpatrick, 1982; Puts, 2010). Women have preferences for resources (Buss & Schmitt, 1993), health (Buss et al., 1990), genetic quality (Gangestad & Thornhill, 1997; Thornhill & Gangestad, 2006), relationship compatibility (Buss, 2003), and parenting ability (La Cerra, 1994; Brase, 2006). One way men fulfill these preferences and thereby acquire mates is by signaling their traits via behaviors. For example, women prefer mates who are capable of producing creative displays such as humor (Buss & Barnes, 1986) and storytelling (Donahue, 2009). So, men produce humor and stories as a means of attracting women. If subordinate men defer to dominant men within mating contexts, one way they may do so is by inhibiting the types of behaviors that would attract women. For example, subordinate men may inhibit the production of creative displays when dominant men are around. This inhibition would represent a "failure to compete for contested resources" analogous to the grizzly bear example above. And as in the case of subordinate grizzly bears inhibiting mating behavior, men's inhibition of creative displays could function to prevent physical aggression.

1.2. Hypothesis

We hypothesize that throughout human evolution dominant males have used physical force to prevent subordinate males from mating. One way that dominant males have kept subordinate males from mating is by preventing them from doing the types of things that could attract mates, such as creative display production (or perhaps punishing them for creative display production). Subordinate males' creative display abilities are inhibited during mate competition against dominant males as an adaptation for avoiding aggression. This inhibition manifests as an inability to produce creative displays or a decrement in the quality of creative displays.

1.3. The present study

In the current experiment we investigated whether relatively subordinate men would defer to dominant men by inhibiting creative displays in a competitive mating context. Male participants (*P*s) were led to believe they were competing for a date with an attractive female. *P*s believed they were competing against either a strong or weak male. *P*s were prompted to display their creativity to the female by telling funny jokes and interesting stories. We hypothesized that *P*s who believed they were competing against a strong male would be less likely to tell jokes and less likely to tell stories than *P*s who believed they were competing against a weak male. Additionally, we hypothesized that of those who did tell jokes or stories, *P*s who believed they were competing against a strong male would tell jokes that were less funny and stories that were less interesting than *P*s who believed that they were competing against a weak male.

2. Methods

2.1. Participants

Fifty undergraduates at a large Southwestern university participated and were compensated with course credit. In the experiment advertisement it was asked that only single heterosexual males participate.

2.2. Procedures

Participants (*P*s) entered the lab alone and were informed that they would be videotaped while engaging in a social interaction. *P*s were led to believe that they would be interviewed by an attractive female who would also be interviewing another male participant and then selecting one of the two *P*s for a date. In reality, there was no attractive female, instead *P*s were shown a photograph of a female that had been used in previous research (see Sell et al., 2009). Moreover, there was no actual competitor present, instead *P*s were randomly assigned to be presented with a picture of either a strong or weak competitor adapted from previous research on dominance (see Sell et al., 2009). *P*s in the strong competitor condition were presented with a picture of a shirtless male whose picture had been rated in the top 10% in strength from a large sample of pictures of undergraduates. *P*s in the weak competitor condition were presented with a picture of a shirtless male whose picture had been rated in the bottom 10% in strength from a large sample of pictures of undergraduates. *P*s were told that after their interview a picture of them would be taken (preferably shirtless) after which their competitor's interview would take place. In the *P*s' minds the chronology of the study was as follows: 1) A picture of the competitor is taken, 2) This picture is shown to the participant, 3) The participant's interview takes place, 4) A picture of the participant is taken, 5) This picture is shown to the competitor, 6) The competitor's interview takes place (in actuality the study ended after (3)). After receiving these instructions and completing an informed consent, *P*s completed three activities: 1) a Q & A session during which they responded to a series of questions posed by the "attractive female," 2) a storytelling exercise, and finally, 3) a joke telling exercise (see details below). Finally, *P*s were led to believe that following their interview with the attractive female they would meet and complete an activity with their competitor, however in actuality the experiment ended after the interview concluded.

*P*s were interviewed via instant messenger and gave their responses out loud to a video camera pointing towards them. *P*s were led to believe that the camera was on a live feed to both the female and their competitor, though in actuality it was merely videotaping the participant. These sorts of "dating game" cover stories have been used effectively in previous research [see Puts et al. (2006) and Simpson, Gangestad, Christensen, and Leck (1999) for similar methodologies].

After completing the joke telling exercise *P*s were asked to complete a survey regarding their sexual preferences and relationship status. *P*s were then debriefed and dismissed. For each participant a separate videotape was generated and rated by a team of coders who scored the presence of various creative displays and rated the quality of these displays if they were produced (see below).

2.2.1. Q & A session

During the Q & A session all *P*s were asked the same set of questions concerning basic facts about their lives such as "where are you from?" and "what is your major and why did you pick it?" This Q &

A session functioned to familiarize *P*s with the means by which they would be communicating with the attractive female.

2.2.2. Storytelling exercise

Immediately after the Q & A session, *P*s were asked by the attractive female to tell a story. The instant message sent was "tell me a story about your life that you think is interesting."

2.2.3. Joke telling exercise

Immediately after the storytelling exercise, *P*s were asked by the attractive female to tell a joke. The instant message sent was "tell me a joke that you think is funny."

2.2.4. Video coding of participants' creative displays

The videos of the *P*s' storytelling exercise and joke telling exercise were coded by nine independent female coders who were blind to experimental condition. One participant who completed the experiment reported being primarily attracted to men so his data was excluded from analyses. For the storytelling exercise, coders recorded whether or not each participant produced a story. When coders disagreed over whether a story was told the majority opinion was used. Disagreement only occurred in 3 out of 49 cases. Coders also rated how interesting and elaborate the story was, if one was produced. The αs for interestingness and elaborateness were .74 and .88 respectively (the standard convention for sufficient reliability is .7 or higher). For the joke telling exercise, coders recorded whether or not each participant produced a joke. When coders disagreed over whether a joke was told the majority opinion was used. Disagreement only occurred in 2 out of 49 cases. Coders also rated the funniness and elaborateness of the joke, if a joke was told. The αs for funniness and elaborateness were .72 and .88 respectively.

3. Results

In the advertisement used to recruit participants for the experiment it was asked that only single heterosexual males participate. In spite of this, one participant who completed the experiment reported being primarily attracted to men. His data was excluded from analyses. Additionally, 15 participants (*P*s) in committed relationships completed the experiment. All of the following analyses were performed on the single and committed *P*s separately. In no instance did the results of these analyses substantially differ, so committed *P*s' data were included. Also note our raw data can be found in the Supplementary Online Material.

3.1. Frequencies of joke telling and storytelling

To test whether *P*s in the strong competitor condition were less likely to engage in creative display compared to *P*s in the weak competitor condition, the percentages of *P*s who told jokes and stories across conditions were compared. As predicted, *P*s in the strong competitor condition were less likely to tell jokes than *P*s in the weak competitor condition (42% vs. 60%, $p = .026$, Fisher's exact test). Also, *P*s in the strong competitor condition were less likely to tell stories than *P*s in the weak competitor condition (79% vs. 92%, $p = .025$, Fisher's exact test).

3.2. Coder ratings of creative displays

To test whether *P*s in the strong competitor condition produced lower quality creative displays than *P*s in the weak competitor condition comparisons of coder ratings of joke funniness and elaborateness across conditions were conducted. Additionally, comparisons of coder ratings of story interestingness and elaborateness across conditions were conducted. These analyses only included *P*s who told jokes ($N = 25$) and stories ($N = 42$). As predicted, *P*s in the strong competitor condition told less funny jokes than *P*s in the weak competitor condition ($M = 2.87, M = 3.80$), $t(23) = -2.56$, $p = .018$, $d = -1.04$. Also, *P*s in the strong competitor condition told less elaborate jokes than *P*s in the weak competitor condition ($M = 2.19, M = 3.38$), $t(23) = -2.88$, $p = .008$, $d = -1.18$. Though group differences in the interestingness and elaborateness of stories trended in the predicted direction, these differences were not significant [interestingness: ($M = 4.44$, $M = 4.74$), $t(40) = -1.08$, $p = .29$, $d = -.33$; elaborateness: ($M = 4.12, M = 4.28$), $t(40) = -.43$, $p = .67$, $d = -.13$].

4. Discussion

Male participants (*P*s) were led to believe they were competing for a date with an attractive female. *P*s believed they were competing against either a strong or weak male. During an interview with the attractive female, *P*s were prompted to display their creativity to the female by telling funny jokes and interesting stories. We found that *P*s competing against a strong male told jokes that were less funny and less elaborate. Additionally, *P*s competing against a strong male were less likely to tell jokes and less likely to tell stories.

These effects may represent acts of deference. Since women prefer men capable of producing creative displays (Buss & Barnes, 1986; Donahue, 2009), the inhibition of these displays may function to signal to the competing male a disinterest in entering into competition. Deferring in this way may benefit subordinate males by allowing them to avoid the risk of physical aggression.

One alternative account of the current findings is that men "give up" when they calculate that their chance of success in mate competition is so low that the costs of mating effort outweigh the potential benefits. Women prefer dominant mates and men are aware of this (at least to some extent), so perhaps men inhibit creative display production when competing against dominant males because it would not increase their chance of mating enough to be worth the expenditure of mating effort. The plausibility of this alternative explanation is limited by the magnitude of the particular costs incurred by *P*s who did engage in creative display; telling a joke or a story when asked for one does not seem particularly costly in terms of time or energy. Additionally, though it seems likely that there are reputational costs associated with "putting in your best effort" (e.g. trying to be funny) and then being rejected, in our experiment the potential for reputational damage seems very low. The plausibility of this alternative explanation is also limited by the fact that women have a wide array of mate preferences, and though women often prefer dominant partners, it is only one consideration amongst many. Indeed, women's preference for dominance may predominantly manifest in short-term rather than long-term mating (see Penton-Voak et al., 1999; Little, Jones, Penton-Voak, Burt, & Perrett, 2002; Havlicek, Roberts, & Flegr, 2005; Snyder et al., 2008). Even women of extremely high mate value (e.g. Mia Farrow circa 1980) choose mates who lack characteristics associated with dominance (e.g. Woody Allen). It is not obvious that competing against an individual who is more attractive than you in one particular domain should make the pursuit of a mate seem futile. Given these limitations, an explanation that invokes deference seems more likely than an explanation that relies on participants' perception of their chance of success.

A second alternative account of the current findings is that the effects found do not reflect adaptations related to creative display within mating contexts, but rather reflect adaptations for something else that coincidentally affects creative displays as a byproduct. For example, it has been shown that men raise the pitch of their voice when addressing dominant males in a mate competition context (Puts et al., 2006). Perhaps men have been selected to raise the pitch of their voice when competing against dominant males, and this coincidentally happens to degrade the quality of particular creative displays (and this effect on creative display was not itself selected for). The plausibility of this alternative explanation is limited by the fact that the current experiment produced several different effects, all of which

seem related to creative display: men competing against a dominant male were less likely to tell jokes, less likely to tell stories, and told jokes that were less funny and less elaborate. If all of these effects are byproducts, then the true selection pressure must impact willingness to produce two kinds of creative display and two distinct facets of joke telling as a mere side effect. Though this alternative account cannot be ruled out, it seems less likely than an explanation that posits adaptations for the inhibition of creative display specifically.

In the future it may be worthwhile to investigate whether the current findings generalize to another form of social status known as "prestige" (see Henrich & Gil-White, 2001). Prestige refers to an individual's relative access to resources and mates as a function of their ability to confer benefits onto others. If men defer to dominant competitors in mating contexts it is plausible that men also defer to prestigious competitors in mating contexts. If a competitor may or may not confer some benefit onto you in the future, it may be in your best interest to defer to that competitor to increase the likelihood of receiving that benefit in the future. As prestige and dominance are often associated with similar consequences in practice (see von Rueden, Gurven, & Kaplan, 2008; von Rueden et al., 2011), it is possible that the current findings could be replicated using a prestigious competitor rather than a dominant competitor.

Supplementary Materials

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.evolhumbehav.2013.05.003.

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