



'Eavesdropping' and perceived male dominance rank in humans

Benedict C. Jones^{a,*}, Lisa M. DeBruine^a, Anthony C. Little^{b,1}, Christopher D. Watkins^a, David R. Feinberg^{c,2}

^aSchool of Psychology, University of Aberdeen

^bDepartment of Psychology, University of Stirling

^cDepartment of Psychology, Neuroscience, & Behaviour, McMaster University

ARTICLE INFO

Article history:

Received 31 August 2010

Initial acceptance 29 November 2010

Final acceptance 2 March 2011

Available online 3 April 2011

MS. number: 10-00649

Keywords:

copying

dominance

faces

intrasexual competition

recognition

social learning

Effects of social learning on mate preferences have been observed in a wide range of animal species, including humans. However, it is not known whether social learning also influences other important aspects of social perception in humans. We investigated whether 'eavesdropping', a form of social learning whereby observers extract information about individuals' qualities by observing their interactions with others, influences men's perceptions of the dominance of potential rivals. We found that observing the responses of other individuals modulates the perceived dominance of aggressors. Observers rated aggressors' dominance higher when they had previously observed others responding to the aggressor in a fearful, intimidated manner than when they had observed others responding to the aggressor in an angry, aggressive manner. By contrast with this finding for rated dominance, observing identical interactions did not affect observers' perceptions of the trustworthiness of the aggressors. The effect of observing others' responses on the perceived dominance of aggressors demonstrates that eavesdropping influences perceptions of dominance rank among men, which would be adaptive if it reduces the costs (e.g. risk of serious injury and/or loss of resources) that may be associated with acquiring knowledge of others' dominance rank via exclusively self-reliant learning. While previous research on social learning and sexual selection has focused on intersexual interactions (i.e. mate choice copying effects), our findings suggest that eavesdropping may also influence sexual selection for male traits via intrasexual competition.

© 2011 The Association for the Study of Animal Behaviour. Published by Elsevier Ltd. All rights reserved.

Mate choice copying effects, whereby females increase relative preferences for previously less-preferred males after seeing them mate, have been demonstrated in a number of different nonhuman species (reviewed in Dugatkin 2000; Brown & Fawcett 2005; Galef & Laland 2005), including guppies, *Poecilia reticulata* (e.g. Dugatkin 1992; Dugatkin & Godin 1993; Godin et al. 2005), Japanese quail, *Coturnix japonica* (e.g. Galef & White 1998; White & Galef 2000; Ophir & Galef 2003a) and zebra finches, *Taeniopygia guttata* (Swaddle et al. 2005). These effects cannot be explained by changes to males' behaviour after pairing with females or females preferring locations where more conspecifics had been present (see Ophir & Galef 2003a, White 2004 and Brown & Fawcett 2005 for discussion) and can generalize to preferences for novel males that are

physically similar to the paired male (White & Galef 2000; Godin et al. 2005; Swaddle et al. 2005). While orthodox models of sexual selection have emphasized genetic influences on female mate preferences (e.g. Andersson 1994), mate choice copying effects suggest that social transmission of mate preferences may also contribute to sexual selection for male traits (Kirkpatrick & Dugatkin 1994; Laland 1994; Brown & Fawcett 2005; Galef & Laland 2005). Indeed, mate choice copying may be adaptive when there is a cost (e.g. time, energy) to evaluating the quality of potential mates or when discriminating between the quality of potential mates is difficult (Wade & Pruett-Jones 1990).

The experiments described above demonstrate effects of social learning on females' mate preferences in a variety of nonhuman animals. More recent experiments have demonstrated analogous effects of social learning on attractiveness judgements in human observers (Jones et al. 2007a; Hill & Buss 2008; Little et al. 2008; Gilbert et al. 2009). For example, Jones et al. (2007a) found that observing other women with smiling (i.e. positive) expressions looking at male faces increased women's preferences for those men to a greater extent than did observing women with neutral (i.e. relatively negative) expressions looking at the same male faces.

* Correspondence: B. C. Jones, School of Psychology, University of Aberdeen, Aberdeen AB24 3FX, U.K.

E-mail address: Ben.jones@abdn.ac.uk (B. C. Jones).

¹ A. C. Little is at the Department of Psychology, University of Stirling, Stirling FK9 4LA, U.K.

² D. R. Feinberg is at the Department of Psychology, Neuroscience, & Behaviour, McMaster University, Hamilton, Ontario L8S4L8, Canada.

Other experiments have shown that pairing individuals with opposite-sex partners increases their attractiveness (Hill & Buss 2008), particularly when the opposite-sex partners are physically attractive (Little et al. 2008; Yorzinski & Platt 2010). Consistent with these findings, participants' responses to partners in speed dates are influenced by public information about how enjoyable others found the company of those individuals (Gilbert et al. 2009). Collectively, these findings suggest that social learning influences attractiveness judgements of opposite-sex individuals and, potentially, mate preferences (Jones et al. 2007a; Hill & Buss 2008; Little et al. 2008; Gilbert et al. 2009).

While recent experiments have presented compelling evidence that social learning influences attractiveness judgements and/or mate preferences in humans (e.g. Jones et al. 2007a; Hill & Buss 2008; Little et al. 2008; Gilbert et al. 2009), the extent to which other fundamentally important social attributions may be similarly shaped by social learning is currently unknown. Many researchers have emphasized the importance of dominance attributions for social behaviour in many nonhuman animals (Waitt et al. 2003; Reby et al. 2005; Shepherd et al. 2006; Ghazanfar et al. 2007) and humans (e.g. Mueller & Mazur 1996; Puts et al. 2006; Fink et al. 2007; Oosterhof & Todorov 2008; Sell et al. 2009). Indeed, there is good evidence from the fossil record that aggressive conflict was a significant selection pressure on human evolution (Manson & Wrangham 1991; Keeley 1996; Bowles 2009). To date, however, research on dominance in humans has focused almost exclusively on identifying either physical cues that influence perceptions of others' dominance, such as masculine characteristics in human faces and voices (e.g. Perrett et al. 1998; Feinberg et al. 2006; Puts et al. 2006; Boothroyd et al. 2007; Main et al. 2009; Jones et al. 2010a, b), or traits that are correlated with these cues, such as indices of physical strength, physical aggression, reproductive potential and social status (e.g. Mueller & Mazur 1996; Rhodes et al. 2005; Puts et al. 2006; Fink et al. 2007).

Exclusively self-reliant learning of others' dominance through direct experience (e.g. by engaging in aggressive conflict) may be costly because aggressive conflicts can result in serious injury and/or loss of resources (e.g. Sell et al. 2009; Watkins et al. 2010a, b). Moreover, although research has identified a variety of physical cues to others' dominance (reviewed in Watkins et al. 2010a, b), the correlations between these characteristics and indices of actual dominance are far from perfect, suggesting that relying solely on physical cues to dominance may be a somewhat poor strategy for assessing the dominance of individual competitors. For example, Fink et al. (2007) found that dominance ratings of men's faces explained only ca. 14% of the variance in their upper body strength. Additionally, although Carre & McCormick (2008) demonstrated the existence of facial correlates of aggressive personality in men, these cues only explained between ca. 9% and ca. 29% of the variance in men's aggression (depending on the sample and/or the measure of aggressive personality used).

Social learning could help to overcome the problem of how to identify dominant individuals by providing critical additional information about the qualities that others might possess and how they might behave. However, we know of no previous studies that have examined whether social learning can influence human's perceptions of rivals' dominance. This is, perhaps, surprising since observing how conspecifics respond to aggressors (i.e. eavesdropping) influences subsequent responses in some nonhuman animals (reviewed in Ophir & Galef 2003b; Griffin 2004; Kendal et al. 2005). Thus, eavesdropping, a form of social learning whereby observers extract information about individuals' qualities by observing their interactions with others, is a form of social learning through which individuals might acquire information about others' dominance (Van Schaik 2010). While social learning could provide important

information about others' dominance, there can also be substantial costs to using information acquired by observing others' behaviour. For example, strategies for acquiring information that are overly reliant on social learning can cause erroneous information to be rapidly transmitted through the group, sometimes to the detriment of efficient behaviour (for a discussion of the problems associated with these informational cascades, see Giraldeau et al. 2002). Such issues may bias against the use of information acquired via social learning when assessing others' dominance.

In light of the above, we conducted an experiment to test whether eavesdropping influences perceived dominance rank in men. The experiment consisted of two parts. In an initial observation phase, male participants watched a slideshow in which men displaying angry expressions (i.e. aggressors) were paired with other men (i.e. responders) who responded to the aggressor in either an aggressive (i.e. angry) or intimidated (i.e. fearful) manner. After watching this slideshow, participants rated the dominance of the aggressors. We predicted that participants would rate the aggressors as more dominant after observing the responders responding in an intimidated, fearful manner than after observing the responders responding in an aggressive, angry manner. Such results would demonstrate that eavesdropping influences perceptions of dominance rank among men, since the only cues that can be used to distinguish between the two groups of aggressors are the responders' responses.

In addition to investigating whether observing how responders respond to aggressors affects perceptions of their dominance, we investigated whether perceptions of the aggressors' trustworthiness were similarly affected. We compared the effects of observing responders' responses to aggressors on perceptions of dominance and trustworthiness in light of recent research suggesting that these perceptions are orthogonal (Oosterhof & Todorov 2008). If the effects of observing responders' responses to aggressors are primarily related to perceptions of dominance rank, we would expect watching the slideshow to affect dominance perceptions but not necessarily to affect perceptions of trustworthiness.

METHODS

Stimuli

Front-view images of eight men with neutral expressions were randomly selected from the Karolinska directed emotional faces (KDEF) image set (Lundqvist & Litton 1998) for use in the face perception test that followed the observation phase of the experiment. These eight images were split into two groups of four images (Group A and Group B) that were approximately matched in terms of their perceived dominance using ratings (1 = not very dominant, 7 = very dominant) provided by 25 men who did not participate in the main experiment (mean age $\pm$ SD = 22.9 $\pm$ 5.0 years). The approximate matching consisted of ensuring that, for a given face assigned to one group, a face that was similar in terms of its average rated dominance was assigned to the other group. The mean absolute (i.e. unsigned) difference in rated dominance for these face pairs was 0.06 (SD = 0.05).

For each of the eight men to be shown in the dominance perception test, left-profile images with angry expressions were also obtained from the KDEF image set for use in the observation phase of the experiment. These individuals were designated the aggressors. The other images that were used in the observation phase of the experiment were left-profile images of a further eight males (the responders) with angry expressions and left-profile images of these same individuals with fearful expressions. The images of these additional males were randomly selected from the KDEF image set. Right-profile versions of all left-profile images, both aggressors and responders, were manufactured by mirror

Download English Version:

<https://daneshyari.com/en/article/2416755>

Download Persian Version:

<https://daneshyari.com/article/2416755>

[Daneshyari.com](https://daneshyari.com)