Does verbal street harassment signal perpetrator dominance to male and female observers?

Faye T. Nitschke and Michael Lam

The University of Queensland

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Corresponding author: Faye T. Nitschke, The School of Psychology, The University of Queensland. Address: Level 3, McElwain Building, The University of Queensland, St Lucia, Q4072, Australia. Email: f.nitschke@uq.edu.au. ORCID: 0000-0003-1200-4765

Michael Lam, The School of Psychology, The University of Queensland. Address: Level 3, McElwain Building, The University of Queensland, St Lucia, Q4072, Australia. Email: m.lam@uq.edu.au. ORCID: 0000-0001-9648-7738

Abstract

Objective

It is difficult to explain why verbal street harassment, where typically a male harasser yells sexually harassing statements at a female victim, has survived as a behaviour. We propose that verbal street harassment may signal a harasser's dominance and aim to test this in our registered report.

Methods

Participants ($N = 241$) will read one of two vignettes describing either a street harassment incident (in which a male perpetrator harasses a female victim) or a street incident without harassment. Participants will be asked to evaluate whether the male target possesses a range of traits (including dominance) and to evaluate any harm the female target suffered from the incident.

Results

In accordance with costly signalling theory, we expect results to show that male participants perceive a male target to be more dominant than female participants when the male target engages in verbal street harassment but not when the male target does not engage in harassment. We also expect results to show that female participants perceive a female target to be more harmed than male participants when the female target is verbally street harassed, but not when the female target is not harassed.

Conclusions

These results will be the first demonstration that verbal street harassment may signal a harasser's dominance which may be why the behaviour has been maintained. Understanding why street harassment persists as a behaviour is critical to designing effective intervention to prevent street harassment incidents and the negative impacts of harassment on victims.

Keywords: costly signalling theory, street harassment, sex differences, person perception

Does verbal street harassment signal perpetrator dominance to male and female observers?

Verbal street harassment is commonly experienced by women and is committed most often by a male harasser. In a multi-national survey of street harassment experiences, 57% of women report having experienced harassment (Kearl 2014). Verbal street harassment incidents often involve a male perpetrator making sexualised comments about a female victim's appearance or sexual innuendos (a form of sexual harassment colloquially referred to as "cat-calling"; Frazier, Cochran and Olsen 2015). Victims of street harassment experience increased anxiety, feel unsafe in and avoid public spaces to evade harassment (Fairchild and Rudman 2008; Street, Gradus, Stafford and Kelly 2007).

It is difficult to explain why perpetrators engage in verbal street harassment behavior. Harassment victims tend to ignore harassers to avoid escalating the behaviour (e.g., Gruber 1989). Perpetrators also risk consequences for engaging in street harassment, as harassers can be punished through police orders and fines (e.g., in Australia and the United Kingdom; Walsh and Taylor, 2007). Most research to date has examined proximate explanations for harassment behaviour, such as women's reactions to and perceptions of street harassment (e.g., Fileborn and Vera Grey 2017; Logan 2015; Mellgren, Andersson and Ivert 2018). Proximate level explanations do not identify why the behaviour has persisted over time (Scott-Phillips, Dickins and West 2011). Understanding why the behaviour survives (i.e., the ultimate explanation for the behaviour) is critical to designing effective interventions to prevent street harassment incidents and protect harassment victims. Costly Signaling Theory offers an ultimate explanation for verbal street harassment behaviour, that harassment behaviour might advertise traits about the harasser.

Costly Signalling Theory

Costly Signalling Theory has been used to explain why human behaviours persist when an immediate benefit does not follow which rewards the behaviour. According to Costly Signalling Theory (Zahavi 1975; Zahavi and Zahavi 1997), costly behaviours can advertise an individual's traits or qualities that are difficult to directly observe. For example, peacocks advertise their genetic

quality to peahens by their tail, which is costly to develop and maintain. Large, quality tails make peacocks vulnerable to predators and require significant resources to sustain (e.g., food and energy). However, the development of a costly but high-quality tail means that a peacock's tail is a reliable indicator of genetic quality. Costly signalling theory was originally intended to understand communication between animals. However, recently, the theory has been used to explain human behaviour including purchasing environmentally friendly 'green' products (van der Bergh, Tybur and Griskevicius 2010), posting workout selfies on social media (Vandenbroele, Van Kerckhove and Geuens 2019) and disruptive classroom behaviours (i.e., students acting as "class clowns"; Wagner 2019).

For example, students who act as "class clowns" disrupt lessons with attempts to make jokes and do so at the learning experience of other students. Compared to students who do not play the "class clown", students who play the "class clown" are more disruptive, aggressive and have lower assessment completion rates (Damico and Purkey 1978). However, despite these negative consequences of the behaviour, relative to their peers, students identified as "class clowns" have more mutual friends and peer perceived social status (Wagner 2019). In this case, playing the "class clown" signals social affability and pays off for the signaller in the form of a benefit of increased social status, despite the other negative consequences of the behaviour.

We propose that verbal street harassment may function as a costly signal for the harasser. To establish whether a behaviour may be a costly signal, there are several conditions to be met (Bird, Smith and Bird 2001; Zahavi and Zahavi 1997). First, the behaviour must be clearly observable. Second, the behaviour must be costly to the signaller in some significant domain. Third, the behaviour must be a reliable indicator of an unobservable trait or quality of the signaller. Finally, displaying the behaviour must provide benefit to the signaller. Street harassment is a clearly observable behaviour. There are significant costs associated with the behavior as street harassers risk a range of punishments including police orders to move on (e.g., in Australia and the United Kingdom; Walsh and Taylor, 2007), restraining orders (in New Zealand; s9 Harassment Act 1997)

or substantial fines (in France and the Netherlands; Boffey, 2019; Willsher, 2019). Some countries have even criminalized aggressive forms of street harassment (e.g., New Zealand; s8, Harassment Act 1997). However, we do not know what traits verbal street harassment signals about harassers. In the proposed study, we aim to answer this question by investigating what traits verbal street harassment signals. By examining what verbal street harassment signals, this study takes the next important step in investigating an explanation for why street harassment has survived as a behaviour using the costly signal theoretical framework.

What Traits are Signalled by Street Harassment?

Dominance. An unobservable trait signalled by street harassment may be dominance. Dominance is an evolved strategy which involves using power and intimidation to gain social ranking in groups (Maner 2017). Social rank is obtained by dominant group members because other group members are fearful of the more dominant group member (de Waal-Andrews, Gregg and Lammers 2015). Men are particularly motivated to seek status and are more sensitive to signals of status. For example, male customers spend more money and purchase more expensive products than their female counterparts in the presence of a physically dominant male shop employee (Otterbring, Ringler, Sirianni and Gustafsson 2018). Forcibly imposing sexual attention on women, including instances of sexual assault and sexual harassment, has been theorized to be a means for a perpetrator to signal dominance (Grubbs, Exline and Twenge 2014; Hitlan, Pryor, Hesson-McInnis and Olson 2009; Zahavi and Zahavi 1997).

If engaging in verbal street harassment of women signals that the perpetrator is dominant, there are multiple benefits that may follow for the perpetrator. Individuals high in dominance have greater influence over decisions within their group (Cheng, Tracy, Foulsham, Kingstone and Henrich 2013). Both in-group and out-group members also perceive individuals high in dominance to have greater influence and status within the group (Cheng et al 2013). Men who achieve status via dominance also have more allies and higher quality romantic partners (Von Rueden, Gurven and Kaplan 2010).

Dark Personality. Observers often ascribe dark personality traits to perpetrators of crime like psychopathy (a lack of concern for others and social rules; O’Boyle, Forsyth, Banks and McDaniel 2012) and narcissism (an overly high view of self-worth or importance; Morf and Rhodewalt 2001; Edens, Clark, Smith, Cox and Kelley 2013; Kelley, Edens, Mowle, Penson and Rulseh 2019). Moshagen, Hilbig and Zettler (2018) proposed dark personality traits like psychopathy may be manifestations of a dark personality factor. Individuals who score high on measures of the dark factor of personality are motivated protect their own interests regardless of whether this causes cost or harm to others (Moshagen et al 2018). Individuals who measure as high on the dark factor of personality are also more likely to have engaged in criminal or deviant behaviour and measure highly on narcissism and psychopathy (Moshagen, Hilbig and Zettler 2020). Given that crime perpetrators are perceived as having ‘dark’ personality traits (particularly psychopathy and narcissism; Edens et al 2013), an anti-social behaviour like verbal street harassment may also signal to others that the perpetrator has a dark personality.

While possessing a dark personality may seem disadvantageous to a harasser, there are potential benefits associated with dark personality traits. For example, narcissists have been shown to be socially popular and are often considered charming at first sight (Back, Schmukle & Egloff, 2010). In this study, we will investigate whether street harassment signals that harassers possess traits with potential benefits to the harasser, in particular, dominance and a dark personality.

Who responds to Verbal Street Harassment?

If verbal street harassment does function as a signal, the behaviour is being maintained by the utility of the behaviour to advertise otherwise unobservable traits like dominance or a dark personality. However, the existing literature on how male and female observers evaluate perpetrators of sexual offences indicates that there could be a sex difference in how male and female observers respond to verbal street harassment. Typically, female observers view perpetrators of sexual offences, like sexual assault and sexual harassment, more negatively than male observers do (Kleinke and Meyer 1990; Newcombe, van der Eynde, Hafner and Jolly 2008). In criminal trials,

female observers are more likely to think perpetrators of sexual offences are guilty than male observers (e.g., Schutte and Hosch 1997). Female observers are also more likely to support punishing perpetrators of sexual offences than male observers (van der Bruggen and Grubb 2014; Rotundo et al 2001) and specifically perpetrators of rape with psychopathy symptoms (Guy & Edens, 2003; 2006). These sex difference in how perpetrators of sexual harassment and other sexual offences are perceived have been demonstrated through numerous narrative and meta-analytic reviews of the literature (e.g., Grubb and Harrower 2008; Grubb and Turner 2012; van der Bruggen and Grubb 2014; Rotundo et al 2001; Suarez & Gadalla, 2010; Schutte and Hosch 1997). This suggests there could be differences in the extent to which harasser traits are signaled by verbal street harassment to male and female observers.

Verbal street harassment is anti-social behaviour in which the victim is harmed (e.g., Davidson, Butchko, Robbins, Sherd and Gervais 2016; Fileborn 2019). As a result of street harassment, victims suffer a range of negative effects including feeling unsafe as well as depression, anxiety and other mental health issues (e.g., Legena 2018; Street et al 2007). Generally, research suggests observers of sexual harassment, and other sexual offences, perceive the victims of these behaviours have suffered harm or injury as a result (Pickett, Mancini and Mears 2013; Pickel and Gentry 2017). However, female observers consistently perceive victims of sexual harassment and sexual offences to be more harmed by the offending behavior than male observers (e.g., Grubb and Turner 2012). Female observers also evaluate a broader range of sexual harassment behaviours as threatening, harmful to the victim and warranting punishment of the perpetrator than male observers (e.g., Jensen and Gutek 1982; Kenig and Ryan 1986; Rotundo et al 2001). We suggest that even though observers may acknowledge the harm caused to the victim by verbal street harassment, the harassment behaviour may still function as signal explaining why the behaviour is maintained despite the anti-social nature of the behaviour. In this study, we will measure participants' perceptions of harm to the victim to see if participants view the street harassment incident as harmful, while also responding to verbal street harassment as a signal.

Current Study

Our aim in this study is to assess whether verbal street harassment by a male perpetrator signals dominance and a dark personality and explore sex differences in the traits signalled. In this study, we will present participants with a vignette describing either a typical verbal street harassment incident (in which a male target or perpetrator makes sexualised comments towards a female target or victim; Kearn 2014) or an incident on the street (in which the woman is not harassed). Participants will be placed in the role of an observer of the events in the vignette. After reading the vignette, participants will be asked about their perceptions of the male target's traits and the harm to the female target from the vignette event.

(H1) Drawing on Costly Signalling Theory we expect an interaction of participant sex and incident type on perceptions of the male target as dominant and possessing a dark personality. Given that men are more sensitive to signals of status (Otterbring et al 2018) and dominance can lead to status (Maner 2017), we expect male participants will rate the male target (the perpetrator) as more dominant than female participants in the harassment condition but not in the no harassment condition (H1a). Given that female observers are more likely to view perpetrators of sexual offences negatively (e.g., Newcombe et al 2008; Rotundo et al 2001) we expect that female participants will rate the male target (perpetrator) as having more dark personality traits than male participants in the harassment condition but not in the no harassment condition (H1b).

(H2) Given that female observers typically have more perceive sexual offences as more threatening and harmful to victims of sexual violence than men (e.g., Grubb and Harrower 2008; Grubb and Turner 2012; van der Bruggen and Grubb 2014), we also expect an interaction of participant sex and incident type on perceptions of harm to the female target. We expect female participants will perceive the female target (victim) to be more harmed than male participants in the harassment condition but no sex differences in the no harassment condition.

Method

Participants

Participants will be 441 adult (i.e., over 18 years old) American community members recruited online through Amazon Mechanical Turk. Participants will be paid USD \$0.55 for their time based on our estimate for the study completion time. This study protocol has been approved by the University of Queensland Human Research Ethics Committee (Approved Protocol #2019002887).

Data will be analysed using frequentist statistics. We conducted an a priori power analysis via G*Power (Faul, Erdfelder, Lang and Buchner 2007) to determine sample size. As the focal effect in this study is novel, it is difficult to select an effect size precedent for power analysis. The effect size of sex differences in how male and female observers perceive perpetrators of sexual offences (including rape, sexual assault and harassment) is consistent and moderate. There have been several meta-analyses of these effects and the effect sizes range from strongly moderate (e.g., $d = 0.58$; Suarez and Gadalla 2010) to between small and moderate ($r = 0.17$ or $d = 0.35$; Schutte and Hosch 1997 or $d = 0.42$ Rotundo et al 2001). A large-scale review of effect sizes across psychology indicates that studies about attitudes have strongly moderate effects (e.g., $r = .27$ or $d = 0.56$; Richard, Bond and Stokes-Zoota 2003). In order to be conservative, we will use $d = 0.35$ ($f = 0.17$) as our effect size precedent. This is the smallest published meta-analytic effect size estimate for sex differences in evaluating perpetrators of sexual offences (Schutte and Hosch 1997). Given our study design, alpha level (0.05) and effect size precedent ($d = 0.35$) to achieve 90% power, G*Power indicates 441 participants are required. The G*power output is available with the full study materials at the Open Science Framework:

https://osf.io/sev53/?view_only=4394392132044485b4a1dc7732aef8a4

Design

In the proposed study, we will use a two cell between-subjects experimental design in which the type of street incident will be manipulated. There will be two conditions, one describing a

typical incident of verbal street harassment and one describing a street incident with no harassment. In the harassment condition, a male harasser will make sexualized comments about a female victim (based on female victim's accounts of typical verbal street harassment incidents; Kearl 2014; Fairchild 2010; Wesselmann and Kelley 2010). In the no harassment condition, the male and female target will have a small interaction on the street which involves no verbal street harassment (Fairchild 2010). We will also include participant (i.e., observer) sex as a predictor in our analyses. Our key dependent variables will be perceptions of the male target (i.e., harasser) traits and harm to the female target (victim).

Procedure and Materials

Study materials will be presented to participants online via Qualtrics. Participants will be given an online participant information sheet which details what participation involves and their rights. Participants will be asked to confirm they consent to participate by clicking the consent button (i.e., participants will be asked to provide informed consent). Then participants will provide their age, sex, ethnicity and current relationship status. Participants will be randomly allocated to read one of the two vignettes (via a randomizer in Qualtrics) either the harassment or no harassment condition.

After reading the vignette, participants will complete a brief questionnaire measuring our key dependent variables. To avoid contamination between the key outcomes, harasser traits will be measured first, followed by perceptions of harm to the victim. Each measure of harasser traits and harassment severity will be presented on a separate page in Qualtrics and participants will not be able to navigate back to measures completed earlier.

Harasser dominance. Perceptions of the harasser's possession of dominance and prestige will be assessed using the male peer rating version of the Dominance-Prestige Scale (17 items; Cheng et al 2010). Participants are asked to rate the harasser (or male target), indicating their agreement to each item on a scale of 1 (*Not at all*) to 7 (*Very much*). The 17-item measure includes eight items measuring dominance ($\alpha = .88$) and nine items measuring prestige ($\alpha = .85$) with

acceptable internal consistency for each sub-scale. Factor analyses suggest that the sub-scales are reliably independent (see Cheng et al 2010). Composite scores for each sub-scale will be created by averaging participants scores across items. The dominance sub-scale will be used to evaluate H1a and the inclusion of the prestige sub-scale is for exploratory analysis.

Harasser personality. Given that there are strong correlations between individual dark personality traits (e.g., like psychopathy and Machiavellianism or psychopathy and narcissism; Muris et al 2017; O’Boyle et al 2012) and strong evidence that the Dark Factor of Personality is the underlying construct beneath these individual traits (Moshagen et al 2018), we will use the 16 item Dark Factor of Personality measure to investigate the extent to which the harasser is perceived as possessing dark personality traits (the D16; $\alpha = .91$; Moshagen et al 2020). Participants’ responses are recorded on a five point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). This measure shows high criterion validity and has high test re-test reliability ($r_{tt} = .90$; Moshagen et al 2020). In the original inventory, participants are asked to rate themselves on the dark factor of personality traits. To assess perceptions of the male target in our vignettes, we adapted the wording of the items to focus on the harasser in the vignette. For example, the item “It is hard for me to see someone suffering” was adapted to “The man finds it hard to see someone suffering”. Items will be reverse coded as required and a composite will be created for analysis by averaging scores across items contained in the scale. This measure will be used to evaluate H1b.

To investigate whether the harasser is seen as possessing other traits, we will ask participants to rate the extent to which they find the harasser threatening, masculine, and trustworthy on a seven-point scale from 1 (*Not at all*) to 7 (*Extremely*). These items are drawn from research on person perception (Ma, Corell and Wittenbrink 2015) and will be analysed at the item level. These items have been included for exploratory analysis.

Harm to the victim. To test H2, we will use two measures of harm to the victim (the female target). First, four items will be used to assess the harmful effects of the events described in the vignette on the female target. These items are drawn from prior research on street harassment

(Fairchild 2010; McCarty, Iannone and Kelly 2014; Myers, Lynn and Arbuthnot 2002). Three of these items, drawn from McCarty and colleagues work, formed a reliable composite ($\alpha = .89$). If the four items form a reliable composite (i.e., with a coefficient alpha score of above .80; Bandalos 2018), they will be analysed as a single measure of harm to the victim. The composite score will be created by averaging participants' scores across all four items.

The second measure of harm to the victim will focus on participants' perceptions of the emotional experience of the female target during the events described in the vignette (a measure used previously by Fairchild, 2010). Participants indicate the extent to which they thought the female target experienced eight different emotions, some positive (e.g., excitement) and some negative (e.g., sadness) on a seven-point scale from 1 (*Not at all*) to 7 (*Extremely*). Fairchild (2010) reversed scores the three positive emotions and created a composite averaging across all eight items which showed acceptable reliability ($\alpha = .88$). We will also compile data into a composite using Fairchild's (2010) method.

Data Quality Measures

Manipulation check. To ensure that two vignettes are viewed as intended, participants will respond to a single item about the extent to which the man verbally harassed the woman on the street. Participants will respond on a 7-point scale from 1 (*Not at all*) to 7 (*Very*). We expect the street harassment vignette to be rated as more harassing to the female target than no harassment vignette if the manipulation is successful.

Attention checks. As the experimental manipulation relies on participants reading and attending to the vignette content, we will assess participants' recall of the vignette through a series of attention checks (4 items). First, participants will be asked to describe what happened in the vignette they read (as an open-ended free recall question). Then participants will be asked to respond to a series of fact-based questions about the content of the vignettes (3 memory recall items). If participants fail to correctly respond to all three recall memory questions and not respond

to the free recall question, their data will be excluded from the analyses on the basis that they have not attended to the vignette and therefore could not have responded sensibly to the questionnaire.

Demand characteristic probe. Participants will also be asked to respond to two questions about whether there is anything they want to tell the experimenters about the study and what they think the study is about. These questions are intended as a demand characteristic probe (multiple questions are more effective than single questions to detect demand characteristics; Page 1971; Blackhart & Clark, 2019). If participants were to accurately guess at the experimental hypotheses in response to these questions, then it is possible that they would be subject to demand characteristics (that is, responding in the way they think they should given the study purpose; Kite and Whitley 2018). If participants accurately guess the experimental hypotheses their data will be excluded from the final analysis.

The open-ended questions have a second function, as a recommended bot detection mechanism (see for example Paolacci, Chandler and Sisso 2019). There has been discussion about whether some workers (participants) on MTurk might be human assisted bots (and therefore data provided by these participants is not valid; Matherly 2019). Human assisted bots typically provide nonsensical responses to open-ended questions. By asking participants to respond to two open-ended questions, we will be able to manually screen for responses provided by human assisted bots and remove these prior to data analysis (following guidelines by Paolacci et al 2019).

After completing the measures, participants will be provided with a debriefing information sheet which explains the purposes of the study in full. The debriefing information sheet includes contact details for the research team if they want to ask further questions about the study or results.

Analysis Pipeline

Exclusions to Ensure Data Quality

As our study relies on vignettes for one experimental manipulation, participants must pass attention checks so we can verify they have attended to the material in the vignette. Participants data will be excluded prior to analysis if they respond incorrectly to all three fact based attentions

checks and skip (i.e., do not respond) the open-ended question asking them to describe the vignette as this would indicate that they had not attended to the vignette. In addition, we want to exclude participants that demonstrate any evidence of demand characteristics, as this can also threaten the integrity of the data. If participants accurately guess at the experimental hypotheses in their response to the demand characteristic probes, their data will be excluded prior to analysis. We will continue to recruit participants until we have data from 441 participants which meet our data quality criteria as described.

Analytic Strategy for Hypothesis Tests

To test H1a and H1b, we will conduct two factorial ANOVAs with participant gender and harassment condition entered as independent variables and scores for perceptions of the perpetrator's dominance (via scores on the dominance subscale of the Dominance-Prestige Scale) and dark personality (via scores on the Dark Factor of Personality measure) entered into separate analyses as dependent variables. We will follow up significant interactions with contrasts (using Tukey's test) as specified in the hypotheses.

To test H2, we will conduct two factorial ANOVAs with participant gender and harassment condition entered as independent variables and scores for the two measures of harm to the victim entered into separate analyses as dependent variables. We will follow up significant interactions with contrasts (using Tukey's test) as specified in the hypothesis. An R script for these analyses is available on the Open Science Framework at:

https://osf.io/sev53/?view_only=4394392132044485b4a1dc7732aef8a4

Proposed Timeline for Execution of Protocol and Return of Stage 2 Manuscript

Task	Expected Duration for
Implementation of sampling plan via MTurk	2 weeks
Coding (manipulation check and demand characteristic probe data)	2 weeks
Data analysis and results write up (including analysis of quantitative data for pre- registered pipeline and exploratory analyses)	2 weeks
Drafting of discussion section	6 weeks
Editing and reviewing	3 weeks
Total	15 weeks

Disclosures

Ethics: This protocol has been cleared by the University of Queensland Human Research Ethics Committee (Approved Protocol #2019002887).

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Conflict of Interest: The authors declare that they have no conflict of interest.

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