The effect of unfavourable and favourable social comparisons on paranoid ideation: An experimental study

Leonie Ascone[*], Edo S. Jaya, Tania M. Lincoln

Clinical Psychology, Institute of Psychology, University of Hamburg, Germany

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ABSTRACT

Background and objectives: Low social rank is associated with paranoia, but there is a lack of evidence for causality. We tested the effects of social comparisons on negative affect and paranoia with an online social rank paradigm, and whether striving to avoid inferiority or fears of social rejection moderated paranoid reactions.

Method: Female students ($N = 172$) were randomly exposed to one of two validated online profiles depicting a same-aged, high (unfavourable comparison) vs. low rank (favourable comparison) female student. Moderators were assessed at baseline. Social rank, anxiety, sadness and paranoia were assessed pre and post profile-exposure.

Results: There was a large effect of the experimental manipulation on social rank ($p < 0.001$, $\eta^2_{partial} = 0.191$). The manipulations had no effects on anxiety and paranoia ($p > 0.38$). Sadness was significantly altered ($p = 0.016$, $\eta^2_{partial} = 0.033$). There were significant moderation effects between the experimental conditions and insecure striving (trend-level) as well as fears of rejection.

Limitations: Our findings may be biased (overestimation of effects) as students are likely to be more competitive compared to the general population.

Conclusion: Our rank manipulations did not alter paranoia. This suggests that changes in the cognitive representation of social rank alone - without triggering a strong emotional response — do not suffice to evoke paranoia. Although our results do not support the notion that threats to social rank cause paranoid symptoms, they suggest that threats to social rank are more likely to trigger paranoid states in those who are insecure in regard to their social position.

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1. Background

Social rank appraisals reflect an individual's perception as how attractive the individual is to others, how much potential he or she has to challenge and win over others, and how likely it is for him or her to be included by social groups (Allan & Gilbert, 1995). Occupying a position of low social rank is associated with negative affect and psychopathology, such as social anxiety and depression (Gilbert, 2000). Recent research has focused on the association of social rank with psychosis and particularly paranoia. For example, Allison, Harrop, and Ellett (2013) found patients with first episode psychosis to exhibit a lower perceived social rank compared to matched controls, and several population-based studies showed an association between social rank and paranoia (e.g. Freeman et al., 2005; Wickham, Shryane, Lyons, Dickins, & Bentall, 2014). However, so far the question of whether reductions in social rank cause paranoia or merely result from it remains unclear. To our knowledge, only one experimental study tested the effect of social rank manipulations on paranoia. Freeman et al. (2014) manipulated social rank in a virtual reality environment by reducing participants' body height in thirty adult females. As expected, the manipulation resulted in increased levels of paranoia, and the effect was fully mediated by decreases in perceived social rank.

The manipulation in the study by Freeman et al. (2014) was a creative way of manipulating social rank in a well-controllable manner in order to investigate the associations of interest. However, the effects of a height manipulation might not be generalizable to the everyday social comparison processes that take place on a more subjective and cognitive level. In addition, as the authors

* Corresponding author. University of Hamburg, Institute of Psychology, Von-Melle-Park 5, 20146, Hamburg, Germany.

E-mail address: leonie.ascone@uni-hamburg.de (L. Ascone).

point out themselves, the manipulation only involved decreasing social rank while the effect of increasing social rank was not covered. Favourable social comparisons have been established conceptually and empirically as an active coping-strategy with a range of benefits such as increases in well-being and regulation of negative affect (see Buunk, Gibbons, & Buunk, 2013). If social rank is causal to paranoia, increasing social rank via favourable social comparisons should be expected to reduce it.

The present study extends the research conducted by Freeman et al. (2014) by investigating the effects of both unfavourable and favourable social comparisons and by applying an approach to manipulate social rank that more readily reflects social comparisons in every-day life. Building on vulnerability-stress based theoretical models that postulate an affective pathway from social stressors to paranoia (see Freeman & Garety, 2014) and on the accumulating evidence for the role of affect as a precursor of paranoia (e.g. Lincoln, Lange, Burau, Exner, & Moritz, 2010; Lincoln, Mehl et al., 2010; Thewissen et al., 2011; Fowler et al., 2011; Oliver, O'Connor, Jose, McLachlan, & Peters, 2011), we included anxiety and sadness as additional dependent variables, which we expected to act as mediators of the effect of the rank manipulation on paranoia in situations of self-evaluation. The focus on these emotions was justified by the fact that both anxiety and sadness have been linked to clinical and non-clinical paranoia in theoretical models (Preti & Cella, 2010; Freeman, 2007) and in experimental studies that manipulated self-evaluations (e.g. Hartmann, Sundag, & Lincoln, 2014; Kesting, Bredenpohl, Klenke, Westermann, & Lincoln, 2013). Furthermore, it is reasonable to assume that individuals differ in their reactions to changes of social rank. In this context it has been postulated that insecure striving (i.e. striving to avoid inferiority) and fears of social rejection are important moderators for psychopathological reactions to social rank challenges (Gilbert et al., 2007). Consequently, we tested insecure striving and fears of rejection as moderator variables regarding the impact of our rank manipulations on paranoia.

In order to induce decreases versus increases in social rank, we used exposure to online profiles. These profiles either presented participants a high-ranking and attractive (unfavourable comparison condition) or a low-ranking and unattractive (favourable comparison condition) person. We tested the effect of the manipulations on paranoia and a potentially mediating effect through anxiety and sadness. Moreover, we tested whether individuals with higher compared to lower levels of insecure striving and fears of rejection show more pronounced paranoid reactions to the rank manipulations.

2. Method

2.1. Sample selection and recruitment

Because social comparisons require a target that is similar to oneself (see Festinger, 1954) we designed the profiles to describe a female psychology student, as these were the largest homogeneous target group that could feasibly be recruited in the university setting in which the research was conducted. Inclusion criteria were thus being a female bachelor student and being between 18 and 25 years old. Exclusion criteria were any past or current mental health problems for which a potential participant had received a diagnosis. By agreeing to the consent statements, individuals indicated that they fulfilled the requirements for participation. The decision to exclude participants with mental health problems was based on ethical considerations. Due to the online nature of the study, we would have been unable to recognize and attend to any severe mental distress triggered by the study. The recruitment was

implemented by uploading the link onto the university's study platform that serves students to gain participation credits which are required for graduation.

2.2. Participants

Initially, 206 participants entered the study. Incomplete data was deleted list-wise resulting in a sample of 172 (83.5%). The majority of participants were primarily enrolled as Bachelor of Science psychology students, 16 participants were also enrolled in other curricula.

2.3. Design and procedure

We conducted the experiment online, applying an independent groups experimental design with two conditions. The experiment started with a brief study description stating that the purpose of the study was to investigate the attractiveness of personal online profiles based on salient features. Participants were told that at the end of the study they would have to judge the profile based on central features. After the informed consent, we assessed socio-demographic data and insecure striving, as well as fears of rejection. Hereafter, social rank anxiety, sadness and paranoia were measured, followed by a randomized exposure to either the unfavourable or favourable profile condition with the following instruction: 'You will now see an online profile. Please attend to it carefully. It is a profile of a person from your cohort of B.Sc. psychology students. Please take your time while attending to the profile and try to gain an impression of the person. You will then be asked to fill out some further questionnaires and rate the profile based on specific criteria. As there will be some time lag between viewing the profile and rating it, it is important that you attend to it carefully in order to remember it accurately'. This was followed by a reassessment of social rank, anxiety, sadness, and paranoia. At the end of the study we used an open question (textbox) to assess whether participants had noticed anything about the study. This was done to identify individuals who had figured out what the study was about. In addition, we asked how realistic they had perceived the profile (1 = 'very unrealistic' to 7 = 'very realistic'). All participants were debriefed after completion of the study.

2.4. Measures

Social rank was assessed with the Social Comparison Scale (SCS, Allan & Gilbert, 1995) that measures the perceived social rank of the respondent in comparison to others in regard to eleven dimensions by asking them to complete the sentence 'In comparison to others I generally feel … ', followed by each of the dimensions: 'inferior-superior', 'incompetent - competent', 'unlikeable - likeable', 'left out - accepted', 'different - same', 'untalented - more talented', 'weaker - stronger', 'unconfident - more confident', 'undesirable - more desirable', 'unattractive - more attractive', 'outsider - insider'. The eleven items are rated on a 10-point scale (values ≤ 5 indicating inferior and ≥ 6 superior status concerning the attribute in question). Similar to the experimental study by Freeman et al. (2014) we adapted the scale to a state format (instruction: 'Please indicate how you feel in comparison to other female fellow students of your cohort at the moment'). Cronbach's α of the adapted scale was 0.91 in the present study.

To assess negative emotions, we used intensity rating scales labelled with adjectives describing each emotional state (scaling ranging from 1 = 'not applicable' to 11 = 'completely applicable'). The adjectives were for sadness: 'sad', 'depressed', 'miserable', and 'dejected', and for anxiety: 'frightened', 'timid', 'afraid', and 'scared'.