

On the Association between Greater Family Identification and Lower Paranoid Ideation
among Non-Clinical Individuals: Evidence From Cypriot and Spanish Students

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Abstract

A large literature has provided evidence of the 'social cure': a positive relationship between group identification (a sense of group belonging) and mental wellbeing, commonly measured in terms of levels of depression, anxiety, or stress. However, non-clinical populations may experience other symptoms of mental distress, including paranoia. We hypothesised that since group identification promotes satisfying and supportive relationships (something paranoid individuals appear to lack), there should be a negative relationship between family identification and paranoid ideation. We confirmed this in a cross-sectional study with Cypriot students ($N = 108$) and in a two-wave longitudinal study with Spanish students ($N = 206$). The second study also revealed that family identification predicts paranoia over time, but not vice versa. These studies are the first to confirm that family identification is a negative predictor of paranoid ideation, and highlight the need to further explore the effects of group identification on psychotic-like symptoms.

Keywords: Social identity; paranoia; anomalous experiences; family; psychotic symptoms.

Introduction

Group identification is a core human experience which encompasses one's feelings of belonging and connectedness to a social group, coupled with one's sense of sharing standards (values, ideals, goals) with the other members of the group (Sani, Madhok, Norbury, Dugard, & Wakefield, 2015a, 2015b). Importantly, social psychologists taking a social identity perspective on group processes (Haslam, 2004; Tajfel & Turner, 1986; Turner et al., 1987) have found group identification to be consequential for a variety of individual perceptions and behaviors. For instance, Platow et al. (2007) found that experimental participants involved in the physically painful activity of immersing their hand into a bath of ice water experienced less pain when they were given support by a member of a group with which they identified (compared to when support came from a member of an out-group). Furthermore, Sani, Herrera, and Bowe (2009) found that experimental participants who were instructed to reflect upon their own mortality exhibited more identification with their national in-group than control participants, arguably because group identification affords one a sense of meaning and structure that provides defense against existential anxiety. Additionally, Greenaway et al. (2015) found that American community members who were primed with strong feelings of identification with the United States reported a greater sense of personal control over their life than community members who were primed with a low sense of identification, which the authors argued was due to the feelings of permanence and agency provided by national group identification.

Group Identification and Mental Health

Clearly, if stronger group identification paves the way for more supportive social interactions, provides protection from distressing mental states such as existential anxiety, and fosters a greater sense of personal control (which is also known to promote mental

wellbeing; Greenaway et al., 2015; Ross & Mirowsky, 2012), then it can be assumed that group identification constitutes a form of 'social cure' (Jetten, Haslam, & Haslam, 2012, 2014). Indeed, this is exactly what a substantial body of literature has demonstrated, with numerous studies confirming a link between group identification and mental health in a variety of social groups. For instance, Sani, Magrin, Scignaro, and McCollum (2010) found that greater identification with the group of prison guards predicted lower levels of psychiatric disturbance and perceived stress in a sample of guards in a (real-world) Italian prison. Wakefield, Bickley, and Sani (2013) found a negative association between identification with a support group and depressive symptomatology among people with multiple sclerosis. Cruwys, Haslam, Dingle, Jetten, Hornsey et al. (2014) asked participants at risk of depression to join a community recreation group (Study 1) and adults diagnosed with depression to join a clinical psychotherapy group (Study 2). In both situations, participants exhibiting greater levels of identification with the group were more likely to recover from depression. Similar findings have also been observed in younger populations: a study involving Australian high school pupils found greater school identification to be associated with lower depression, more positive affect, and less destructive behavior (Bizumic, Reynolds, Turner, Bromhead, & Subasic, 2009), while a study involving Scottish high school pupils found a negative association between identification with either the participants' family, their school, or their group of friends, and their levels of psychological distress (Miller, Wakefield, & Sani, 2015).

Group Identification and Paranoia

As implied in our brief literature review, social identity researchers interested in group identification and mental health have mainly focussed their attentions on symptoms of depression, anxiety, and stress, arguably because these are the most common symptoms of

mental distress (e.g., Lovibond & Lovibond, 1995). However, research conducted over the last two decades has revealed that psychotic symptoms such as delusions and hallucinations, which were once believed to be related only to psychotic disorders such as schizophrenia, are actually fairly common in non-clinical populations of both adults and children (Linscott & van Os, 2013; Perälä et al., 2007). Interestingly, the delusions most commonly reported by non-clinical individuals are paranoid thoughts (Verdoux & van Os, 2002). Indeed, Freeman et al. (2005) found that approximately one-third of their non-clinical sample reported experiencing paranoid thoughts, leading the authors to conclude that such thinking is likely to stem from typical and rational emotional concerns.

We believe that paranoid ideation and group identification are likely to be inversely related. This is because, as noted above, greater group identification tends to promote more satisfactory social relationships qualified by mutual support and trust. For example, Kramer, Hanna, Su, and Wei (2014) explored a range of evidence from organisational psychology which supports the idea that a person's willingness to trust fellow group members is determined by the extent of the person's identification with the group. Furthermore, Han and Harms (2010) found that participants' identification with their employee team positively predicted trust in their peers, which in turn predicted lower levels of relationship conflict. Ultimately, group identification appears to foster a sense of trust and support, and it is exactly this which individuals with paranoid thoughts appear to lack (Riggio & Kwong, 2011).

Additionally, paranoia has been found to be associated with loneliness (Riggio & Kwong, 2011); an experience that is antithetical to group identification (Sani, 2012). More generally, we fully agree with Bentall (2009, p. 133) when he states that "experiences...of 'not belonging' confer an increased vulnerability to psychosis and particularly paranoid beliefs". In summary, we believe that the lack of trust, lack of support, and loneliness associated with

low levels of group identification means that we are likely to observe a negative correlation between group identification and paranoid thoughts. Thus, in order to extend the 'social cure' literature, we feel it would be particularly worthwhile to investigate this predicted relationship between group identification and paranoia.

Aim and Overview of Research

The aim of this research is therefore to begin exploring this relationship. As a first step, we decided to focus on identification with a specific group: the family. This decision was based on two observations. First, studies have already revealed a robust link between family identification and mental health. For instance, Sani, Herrera, Wakefield, Boroch, and Gulyas (2012) found a negative association between family identification and depression, satisfaction with life, and perceived stress in a community sample of Polish people, while Sani et al. (2015b) recruited a large Scottish community sample and found family identification to contribute to lower odds of being depressed. Furthermore, Naughton, O'Donnell, and Muldoon (2015) found that greater identification with the extended family in young adults was related to a reduction in the detrimental effects of exposure to parental intimate partner violence on anxiety and self-esteem. Finally, Swartzman, Sani, and Munro (2016) found a negative association between family identification and post-traumatic stress among cancer survivors, while Miller et al. (2015) found that high school pupils with greater levels of family identification experienced lower levels of psychological distress. We feel that this link between family identification and various dimensions of mental health is likely to extend to other dimensions yet to be explored, such as paranoia.

Second, several studies have demonstrated that negative experiences within the family (e.g., perceiving hostility or lack of emotional support from family members) increase paranoid ideation among young people (Ellett, Lopes, & Chadwick, 2003; Riggio & Kwong,

2011). Since lower family identification is related to negative interpersonal experiences with family members (Swartzman et al., 2016), it could be argued that lower family identification should also be related to greater feelings of paranoia towards family members in general. Indeed, there is evidence to suggest that these negative interpersonal experiences with family members could actually foster greater feelings of paranoia towards other people in general. For instance, Rankin, Bentall, Hill, and Kinderman (2005) found that paranoid patients have negative beliefs about their families which persist even after recovery, while Myhrman, Rantakallio, Isohanni, and Jones (1996) showed that being unwanted by one's parent/s at birth increases the risk of psychosis. Additionally, Bentall, Wicknall, Shevlin, and Varese (2012) explored the 2007 Adult Psychiatric Morbidity Survey, and found a positive relationship between being brought up in institutional care and paranoia.

With these observations in mind, we investigated the relationship between family identification and paranoia in two studies, both involving university students. In Study 1, which involved a cross-sectional design and was conducted in Cyprus, we sought evidence of an association between family identification and paranoid thoughts. This was followed by Study 2, which involved a two-wave longitudinal design and was conducted in Spain.

Study 1

Method

Participants and Procedure

A sample of 108 university students (both undergraduate and postgraduate) from several universities in Northern Cyprus (90 males, 18 females; $M_{age} = 23.34$ years, $SD = 3.43$, range: 17-35 years) were recruited. Participants were approached in various places on the university campus, and invited to complete a pencil-and-paper questionnaire. Those who agreed to participate completed the questionnaire on-site and returned it to the researcher.

Measures

To assess *family identification* we used the 4-item Group Identification Scale (GIS; Sani et al., 2015a). The items tapped one's feelings of belonging to/bonding with the family (e.g., "I have a sense of belonging to my family") and one's sense of commonality/similarity with one's family members (e.g., "I have a lot in common with the members of my family"). Participants specified their disagreement or agreement with each item using a seven-point scale (1= "strongly disagree", 7= "strongly agree"). Participants were instructed to define 'family' "in any way you wish (e.g., immediate family or extended family, etc.)". The overall score for family identification was obtained by calculating the mean of the four items, with higher scores indicating greater family identification.

Paranoia was assessed with a slightly modified version of the 20-item self-report scale of general paranoid ideation, which was devised by Fenigstein and Venable (1992) to investigate paranoia in non-clinical samples. Although the scale is uni-dimensional, the items take into account general paranoid thoughts (e.g. "It is safer to trust no one") as well as interpersonal dimensions of paranoia experienced (e.g., "Someone has been trying to influence my mind"). In the original version of this instrument, each item is rated on a 5-point scale (1= "not at all applicable to me", 5= "extremely applicable to me"). However, in our study we used a seven-point scale (1= "completely disagree", 7= "completely agree"). This was done in order to keep the rating scales consistent across the three measures used in this study, thereby making questionnaire completion easier and quicker for participants. The overall score for paranoia was obtained by calculating the mean of the 20 items, with higher scores indicating greater paranoid ideation.

Because previous studies have found a negative correlation between perceived quality of life and paranoia symptoms (Ritsner et al., 2003), as well as a positive relationship

between family identification and life satisfaction (Sani et al., 2012; Wakefield et al., 2016), we used *life satisfaction* as a control variable in our statistical analyses. To measure this construct we used the Satisfaction with Life (SWL) scale by Diener, Emmons, Larsen, and Griffin (1985). This is a 5-item scale of global cognitive judgment about one's life (e.g., "In most ways my life is close to my ideal"). Respondents specify their degree of agreement (1= "strongly disagree", 7= "strongly agree") with each item. We calculated the mean of the five items so that an overall score could be obtained. Higher scores indicate greater SWL.

Results

Descriptives, Reliabilities, and Inter-correlations

Table 1 shows means, standard deviations, and reliabilities for the three measured variables, as well as the inter-correlations among these variables and both gender and age.

[TABLE 1]

Reliability was satisfactory, with Cronbach alphas ranging from .70 to .85. Mean scores for the measures were broadly in line with those obtained in other studies using the same measures with university/college students - see for instance Wakefield, Sani, Herrera, Khan, and Dugard (2016) for GIS-family, Ellett and Chadwick (2007) for paranoia (although a direct comparison cannot be made due to our study using a 7-point scale instead of a 5-point one), and Wakefield, Sani, and Herrera (under review) for SWL.

Family identification had a significant negative correlation with paranoia ($r = -.23, p = .019$). Family identification was also positively correlated (but only marginally so in terms of statistical significance) with SWL ($r = .17, p = .079$). Finally, the correlation between paranoia and SWL was negative and also marginally significant ($r = -.18, p = .059$). Age was marginally positively correlated with family identification ($r = .16, p = .089$) and marginally negatively

correlated with gender ($r = -.16, p = .096$), indicating that male participants tended to be older than female participants. Gender was not related to any of the other variables.

Regression Analysis

To assess the independent effects of family identification on paranoia while controlling for the effects of SWL, we used standard multiple regression analysis. Because gender and age were unrelated to paranoia, we did not enter these variables into the regression equation. Our data met the assumptions for regression analysis.

The regression analysis revealed that the model had a good fit with the data, $F(2) = 4.08, p = .02$. As reported in Table 2, this analysis also showed that the model accounted for 7% of variability in the outcome, and that family identification was the only statistically significant predictor of paranoia ($\beta = -.20, p = .038$).

[TABLE 2]

Discussion

These results confirmed that lower levels of family identification predict greater paranoid ideation, even when the effects of SWL are accounted for. Clearly, this study had the obvious limitation of being cross-sectional, which impedes speculations about which variable might *determine* changes in which variable. This is an important issue, because greater paranoia could be both an antecedent and a consequence of lower family identification. In other words, a high degree of suspiciousness might obstruct the development of one's identification with the family, which in turn could increase one's sense of social disconnectedness, ultimately leading to an increase in distrust and suspiciousness (see Bebbington et al. [2013] for a similar argument, albeit not specifically concerning the family). Thus, in an attempt to shed light on the causal direction of the effects, we conducted a further study, this time based on a two-wave longitudinal design.

To increase generalisability, we also used Study 2 as an opportunity to recruit a very different sample of participants compared to those in Study 1. Thus, for this study we recruited a sample that was almost twice as large as the sample used in Study 1, and that was drawn from a different country, namely Spain.

Finally, in Study 2 we expanded upon Study 1 by including a new covariate: anomalous experiences (e.g., a sense of having magical powers; a frightening feeling that passing thoughts are real). Researchers have found a strong link between anomalous experiences and delusional ideas such as paranoia in non-clinical individuals (Freeman, 2007). Although the nature of this link is not entirely clear, researchers believe that individuals might explain puzzling and confusing experiences through the use of delusions, due to a lack of plausible alternative explanations. Because lack of family identification (and the sense of isolation that this may imply) could be linked with anomalous experiences, it is important to ascertain that the effects of family identification on paranoia are independent from the effects of anomalous experiences on paranoia. We consider this in Study 2. However, note that because Study 1 showed that SWL did not predict paranoia, we did not include SWL among the covariates in Study 2.

Study 2

Method

Participants and Procedure

A sample of 223 undergraduate students at the University of Valencia, Spain, completed a questionnaire (T1). Of these, 206 (92.38%; 41 males, 165 females; $M_{\text{age}} = 19.31$ years, $SD = 1.52$, range = 18-28) completed the same questionnaire seven months later (T2). The data reported concern these 206 individuals. Both questionnaires were completed at the end of a mandatory practical class, leading to high levels of completion.

Measures

Family identification was assessed as it was in Study 1.

Concerning *paranoia*, we used the 20-item self-report scale created by Fenigstein and Vanable (1992). However, this time the items were rated using a 5-point scale (1= “not at all applicable to me”, 5= “extremely applicable to me”), in line with the original format of the scale. Overall paranoia was computed in the same way as in Study 1.

Finally, we measured *anomalous experiences* using the 12-item Unusual Experiences scale (e.g., “Do you feel that your accidents are caused by mysterious forces?”) developed by Mason, Linney, and Claridge (2005) for use in non-clinical individuals. Participants responded each item with either “yes” or “no”. The total score is calculated by summing the number of “yes” answers, which may range from 0 to 12 inclusive, with higher values indicating more anomalous experiences. This scale is a short version of a subscale of the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason & Claridge, 1996).

Results

Descriptives, Reliabilities, and Inter-correlations

Means, standard deviations, and reliabilities for the three measured variables as well as the inter-correlations among these variables and gender, are reported in Table 3.

Correlations with age are not reported, as all *ps* were > .13.

[TABLE 3]

Reliability of the measurement instruments was satisfactory. Cronbach alphas were in the high .80s for the family identification measures and in the low .90s for the paranoia measures (see Table 3 for exact values). Because the measure of anomalous experiences was based on binary ratings, an alpha score was obtained by calculating KR-20. This was .69 at T1 and .77 at T2.

Mean scores for family identification measures were in line with previous studies using GIS among university students (e.g., Wakefield et al., 2016). Similarly, mean scores for paranoia were consistent with those reported in previous studies using undergraduate college students as participants (e.g., Ellett & Chadwick, 2007), and mean scores for anomalous experiences were only slightly below the mean score obtained by Mason, Lynne, and Claridge (2005), who recruited members of the general public as participants.

For each variable, we found a positive, statistically significant correlation across T1 and T2 measurements, with r -values ranging from .46 to .54 (p s < .001). The correlation between family identification and paranoia was negative, and statistically significant, at both T1 ($r = -.31, p < .001$) and T2 ($r = -.24, p < .001$). Statistically significant negative correlations were also found between family identification T1 and paranoia T2 ($r = -.37, p < .001$) and between paranoia T1 and family identification T2 ($r = -.19, p = .008$). Anomalous experiences was positively correlated with paranoia, both cross-sectionally ($r = .33, p < .001$ at T1, and $r = .44, p < .001$ at T2) and longitudinally ($r = .33, p < .001$ for paranoia T1 and anomalous experiences T2, and $r = .31, p < .001$ for anomalous experiences T1 and paranoia T2). Furthermore, anomalous experiences T1 correlated negatively with family identification T1 ($r = -.27, p < .001$), and anomalous experiences T2 correlated negatively with family identification T2 ($r = -.15, p = .031$). Family identification T1 was also negatively correlated with anomalous experiences T2 ($r = -.30, p < .001$). Finally, we found gender to correlate with family identification at both T1 ($r = .25, p < .001$) and T2 ($r = .21, p = .002$), with females having greater family identification than males.

Mean Differences Between T1 and T2

Two repeated measures t -tests (with a Bonferroni corrected alpha level of $p < .025$; i.e., $.05/2$) were conducted to determine if there were across-time mean differences on

either family identification or paranoia. No mean differences were found between T1 and T2 for either family identification, $t(205) = 1.11, p = .27$, or for paranoia, $t(205) = -1.44, p = .15$.

Cross-Lagged Model

We tested the reciprocal effects between family identification and paranoia over time, controlling for anomalous experiences, in a cross-lagged path analysis model, using AMOS 20.0 (Arbuckle, 2011; see Figure 1 for a summary of results). Given that gender and age were unrelated to both paranoia and anomalous experiences, we chose not to include these variables in the model. Due to missing data, seventeen participants were removed from the data-file before conducting the analyses. Standardized estimates are reported. Through the inclusion of all cross-lagged paths as well as residual associations between T2 measures, we were able to assess each path while controlling statistically for all other paths. This approach led to a saturated model, however, thereby making fit indexes irrelevant.

[FIGURE 1]

The analysis confirmed that each T1 measure positively predicted its correspondent T2 measure, with betas in the low-to-mid .40s, and with $ps < .001$. Importantly, the analysis showed that greater family identification T1 predicted lower paranoia T2 ($\beta = -.22, p < .001$), while paranoia T1 was unrelated to family identification T2 ($\beta = -.06, p = .40$). We also found greater family identification T1 to predict lower anomalous experiences T2 ($\beta = -.14, p = .02$), but not vice versa, and paranoia and anomalous experiences to be reciprocally linked over time (betas were .15 and .13 respectively for the impact of paranoia T1 on anomalous experiences T2 and the impact of anomalous experiences T1 on paranoia T2, with $ps < .05$). The R^2 values for family identification T2, paranoia T2, and anomalous experiences T2 were .22, .33, and .34 respectively, indicating that the T1 predictors explained 22%, 33%, and 34% of the variance in the three outcome variables respectively.

Discussion

Study 2 confirmed the existence of a negative relationship between family identification and paranoia. In addition, the tested model shed light on possible causal paths. Specifically, the results suggest that greater family identification leads to decreased paranoid ideation over time, but that paranoid thinking does not lead to changes in family identification over time. This was the case even after controlling for the links between anomalous experiences and both family identification and paranoia. Incidentally, we also found that greater family identification predicted reduced anomalous experiences over time, but not vice versa. In other words, family identification not only determines paranoia but also anomalous experiences. This suggests that lower family identification might influence the development of a range of psychotic experiences, not just paranoid ones. Finally, it is worthwhile noting that we found reciprocal effects between paranoia and anomalous experiences over time. This may be of particular interest to researchers investigating the relationship between these two variables and debating the nature of such relationships (Freeman, 2007). Our findings suggest that these two variables may affect each other over time, thereby creating a pathogenic loop.

General Discussion

Across two studies (conducted in Cyprus and Spain respectively) involving samples of non-clinical individuals, we found greater identification with the family group to be linked to lower levels of paranoid ideation, even after controlling for the effects of other relevant variables such as satisfaction with life (Study 1) and anomalous experiences (Study 2). While the first study was cross-sectional, and therefore it could only establish the existence of an association between family identification and paranoia, the second study was longitudinal and showed that family identification influences paranoia over time, but not vice versa.

To our knowledge, this is the first paper showing a link between identification with a social group (the family in our specific case) and paranoid thoughts in a non-clinical sample. As we discussed in the Introduction, there is particular significance to the family group, and why we chose to select it for this research. The family is most people's 'first group': the one into which they are born. It is unsurprising, then, that the nature of our family relationships can color our thoughts about and attitudes towards people more generally: while family identification is likely to promote feelings of trust in others (e.g., Kramer et al., 2014), lack of family identification is likely to promote loneliness and isolation (Sani, 2012): conditions which may foster paranoid thoughts. Indeed, there is a range of evidence to suggest that problematic interactions with family members (which are often associated with low family identification) can lead to paranoia (e.g., Rankin et al., 2005; Myhrman et al., 1996; Bentall et al., 2012). Our findings lend weight to these studies, but extend them by explicitly exploring the relationship between family identification and paranoia, rather than inferring it from observing the relationship between problematic family interactions and paranoia.

These findings are particularly important because researchers have found that paranoid ideation is continuously distributed, with actual paranoid delusions occupying the extreme end of the continuum (Bebbington et al., 2013). Thus, although our research revealed a negative relationship between family identification and paranoid thoughts in non-clinical participants in the short-term (cross-sectionally in Study 1 and across seven months in Study 2), it could be the case that chronic low family identification across a longer period of time could be a risk factor for the development of more serious paranoia.

Of course, our study is not without limitations. Most notably, all our participants were students. Clearly, it is necessary to demonstrate that our findings extend to the general adult population. Also, given that paranoid thoughts appear to be relatively

common in children and adolescents (Wong, Freeman, & Hughes, 2014), the link between group identification and paranoia should be investigated in these younger age-groups too. Second, we used only two waves of data collection in Study 2. Although a two-wave longitudinal design may give useful indications about processes over time, three or more measurements would be better suited for assessing change and causal processes (Ployhart & Vandenberg, 2010). Third, the only socio-demographic variable we measured was gender (and it was ultimately not included in the regression analyses due to its lack of predictive power). Previous research has shown that various socio-demographic variables may impact upon mental health, particularly urbanicity (Krabbendam & Van Os, 2005) and socio-economic status (Werner, Malaspina, & Rabinowitz, 2007). Because these variables are also likely to be linked to group identification, adding them as covariates in future research would contribute to a better understanding of the independent effects of group identification on mental health. Fourth, it is important to remember that depression has been shown to be negatively associated with both group identification (e.g., Sani et al., 2015b) and paranoia (e.g., Buckley, Miller, Lehrer, & Castle, 2009), and thus represents a potential confound in our study. It would therefore be useful to also measure the extent of participants' depressive symptomology in future research. The final limitation concerns the fact that we have considered only one social group: the family. Although discovering that the family group is linked to paranoia is important in itself, we believe that future research should assess the effects of identification with other social groups (e.g., the friends, the workplace) on paranoia. Additionally, it would be interesting to assess the impact of multiple group identifications (e.g., Iyer, Jetten, Tsivrikos, & Postmes, 2009) on paranoia, to see whether additional group identifications decrease the risk of participants experiencing paranoid thoughts. This observation speaks to recent work by McIntyre, Elahi, and Bentall

(2016), who propose that the relatively high levels of psychotic symptoms (such as paranoia) in migrant populations may be due to the social disconnection and dis-identification that often occurs when people move to a new country. The authors suggest that migrants who join multiple new social groups after migrating may thus help to protect themselves against psychotic symptoms.

As well as addressing the limitations of our studies, future research could also explore the effects of group identification on different forms of paranoia. For instance, Trower and Chadwick (1995) made a distinction between those who consider their persecution as undeserved ('poor-me' paranoia) and those who consider their persecution as deserved ('bad-me' paranoia). Interestingly, highly paranoid people who are nonetheless non-psychotic are more likely to experience bad-me paranoia, while poor-me paranoia is by far the more common type of paranoia observed in clinical practice (Fornells-Ambrojo & Garety, 2005). In addition, bad-me paranoia tends to be associated with much lower self-esteem and higher levels of depression compared to poor-me paranoia (Chadwick, Trower, Juusti-Butler, & Maguire, 2005). Since group identification is negatively related to depression (Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014; Sani et al., 2015b) and positively related to self-esteem (Bizumic et al., 2009), it is possible that group identification predicts bad-me paranoia more strongly than poor-me paranoia.

Related to this, future research could fruitfully explore variables that might mediate the relationship between group identification and paranoia. As stated above, this list of variables could feasibly include depression and self-esteem, but as we outlined in the Introduction, it could also involve the sense of support, trust, and loneliness reduction that group identification fosters (e.g., Kramer et al., 2014; Sani, 2012). Exploring such variables

would shed further light on the relationship between group identification and paranoia, thus also extending the practical implications of our research.

At present, our findings may have implications not only for paranoid thoughts, but also for other psychotic-like symptoms, such as anomalous experiences (which, indeed, in our study appear to be influenced by family identification), hallucinations, and so on. Specifically, we believe that greater identification with social groups may predict lower odds of experiencing psychotic-like symptoms. We also believe that it is important to submit this assumption to empirical test. This is because while subclinical psychotic experiences appear to be transitory in the majority of individuals, in some individuals these experiences will endure over time, and may be followed by a psychotic disorder (van Os & Reininghaus, 2016). Therefore, if a lack of group identifications was found to be related to greater psychotic symptoms, then we might conclude that it is a risk factor for psychotic disorders.

If the causal impact of group identification on paranoid ideation and other psychotic-like experiences was confirmed by further research, this would have obvious implications for clinical practice. In particular, it would highlight the necessity to devise forms of psychotherapeutic interventions for patients either suffering from psychotic disorder or considered at risk of developing a psychotic disorder. As with the Groups4Health program (Haslam, Cruwys, Haslam, Dingle, & Chang, 2016), these interventions could be based on reconnecting patients to their groups and helping them develop new group identifications.

To conclude, our paper confirms the general importance of subjective group identification for mental health, by showing that students with greater levels of family identification tend to have lower levels of paranoid ideation. Arguably, this is because greater family identification facilitates more positive exchanges with other family members based on greater trust and expectations of support. These results point to the necessity to

explore the relationship between group identification and psychotic-like symptoms further, as this might have important implications for a better understanding of the psycho-social determinants of psychotic symptoms and disorders, and therefore for clinical practice.

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Table 1

Means, Standard Deviations, and reliabilities for Variables, and Intercorrelations, in Study 1.

Variable	1	2	3	4	5
1. Family Identification ($\alpha = .76$; $M = 5.79$; $SD = 1.11$)	-				
2. Paranoia ($\alpha = .85$; $M = 3.86$; $SD = 0.94$)	-.23*	-			
3. Satisfaction With Life ($\alpha = .70$; $M = 4.68$; $SD = 1.14$)	.17†	-.18†	-		
4. Gender (male = 0, female = 1)	-.04	.12	.06	-	
5. Age ($M = 23.34$; $SD = 3.43$)	.16†	.04	-.13	-.16†	-

Note: * $p < .05$; † $p < .10$.

Table 2

Summary of Multiple Regression Analysis for Variables Predicting Paranoia in Study 1

	Paranoia				
	B	SE	β	Lower 95% CI for B	Upper 95% CI for B
Constant	5.41	.55		4.32	6.51
Family Identification	-.17	.08	-.20*	-.33	-.009
Satisfaction with Life	-.12	.08	-.15	-.28	.03

$R^2 = .07$

Note: * $p < .05$

Table 3

Means, Standard Deviations, and Reliabilities for Variables, and Intercorrelations, in Study 2.

Variable	1	2	3	4	5	6	7
1. Family Identification T1 $\alpha = .86; (M = 5.81; SD = 1.01)$	-						
2. Family Identification T2 $\alpha = .88; (M = 5.71; SD = 1.19)$.46***	-					
3. Paranoia T1 $\alpha = .90; (M = 1.81; SD = 0.60)$	-.31***	-.19**	-				
4. Paranoia T2 $\alpha = .94; (M = 1.88; SD = 0.71)$	-.37***	-.24***	.52***	-			
5. Anomalous Experiences T1 $\alpha = .69 (M = 3.66; SD = 2.52)$	-.27***	-.13†	.33***	.31***	-		
6. Anomalous Experiences T2 $\alpha = .77 (M = 3.60; SD = 2.83)$	-.30***	-.15*	.33***	.44***	.54***	-	
5. Gender (male = 1, female = 2)	.25***	.21**	-.04	.01	-.06	.02	-

Note: *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$.

Figure 1 Caption:

Figure 1. Cross-lagged model testing the relationship between family identification, paranoia, and anomalous experiences over time in Study 2.

