To cite this output:
Sani, Fabio (2008). Perceiving collective continuity: Social psychological implications: Full Research Report
ESRC End of Award Report, RES-000-27-0185. Swindon: ESRC

Research Report (4,998 words)

Background

One of the core aspects of the personal self is that of being experienced and perceived as temporally extended, as a singularity that moves across time (Neisser, 1988). Importantly though, the individual self is not the only human element that we perceive as temporally continuous. In fact, we also attribute endurance to those human groups (nations, religious institutions, political parties, extended families, work organizations, and so on) to which we may belong, and which form our collective self (Reicher & Hopkins, 2000). In other words, people tend to see their ingroups as entities that move through time, a phenomenon I call 'perceived collective continuity' (PCC). My earlier collaborative research on PCC produced four main findings (Sani, Bowe, & Herrera, 2008; Sani et al., 2007).

- PCC has two distinct but related dimensions. The first one concerns the perception that the group norms - values, beliefs, attitudes, traditions - have been, are, and will be trans-generationally transmitted within the group (perceived *cultural* continuity). The second dimension is related to the perception that different events and ages in the group history are causally interconnected, that they form a coherent narrative (perceived *historical* continuity).
- PCC can be measured with a 12-item scale (6 items for each of the two dimensions of the construct). Studies have confirmed that the PCC scale is internally reliable and temporally stable.
- PCC correlates positively with social identification, collective self-esteem, perceived group entitativity, and other dimensions of social identity, either cognitive, affective, or evaluative.
- Mortality reminders enhance people's PCC ratings, presumably because PCC implies a sense of symbolic immortality thereby defending one from the existential anxiety engendered by death related thoughts.

The general aim of the current project was to use the PCC scale in order to refine and extend these findings in various directions.

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Objectives

The main objectives of this research were as follows.[i]

(i) Exploring whether the impact of PCC on group identification is stronger among individuals who are more generative and who endorse self-transcendent values. This was achieved in studies 1 and 2, which produced mixed results.

(ii) Investigating the implications of PCC for well-being. This was done in studies 3 and 4, from which it emerged that enhanced PCC has positive effects on several well-being indicators, and that perceived group entitativity and CSE mediate these effects.

(iii) Testing the prediction that the perceived continuity of a subordinate ingroup will have positive effects on support for independence from a superordinate group when identification with the superordinate group is low, and negative effects when identification with the superordinate group is high. This was achieved in Study 5. Results demonstrated that, as hypothesised, (i) high perceptions of Scottish group continuity predict a strong desire for independence from the UK, because on average Scottish people do not identify highly with the UK, while (ii) high perceptions of Valencian group continuity predict a low desire for independence from Spain, because Valencians tend to identify highly with Spain.

(iv) Testing the hypotheses that (i) PCC mediates the positive effects of mortality salience on group identification, and that (ii) the effects of mortality salience on PCC are stronger among people with low self-esteem. This was achieved in studies 6 and 7. Results confirmed the first hypothesis. Self-esteem, however, did not appear to moderate the effects of mortality salience on PCC.

(v) Testing the hypothesis that threats to a 'secure base' (i.e., activation of an insecure base) lead people to emphasise collective continuity because it provides an alternative form of security. This was done in studies 8 and 9, which confirmed the hypothesis.

(vi) Creating a measure of perceived family continuity (PFC), and assessing its implications for family identification and well-being. This was achieved in studies 10, 11, and 12, which led to the construction of a valid and reliable PFC scale, and showed that higher levels of PCC predict stronger family identification and higher degrees of well-being.

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The studies

Studies 1 and 2: Exploring the effects of PCC on social identification

My previous research on PCC revealed a strong positive impact of PCC on various aspects of group identification and evaluation (e.g., social identification, collective self-esteem) (Sani et al., 2007). Presumably, perceiving an ingroup as having cultural and historical continuity enhances one's own sense of self-continuity and, because self-continuity is one of the core psychological needs that people pursue when embracing identities (Vignoles et al., 2006), an enhanced sense of self-continuity in turn increases one's own social identification with the ingroup. It is sensible to assume, however, that the effects of PCC on social identification will be higher among people who have strong concerns for self-continuity than among people who do not have such concerns. This is the issue that I investigated in the first two studies.

Study 1 involved 200 students at the University of Dundee. They completed a questionnaire including the PCC scale, a scale of social identification (Doosje, Ellemers, & Spears, 1995) and, as an indicator of concern for self-continuity, a scale measuring the degree to which the respondent embraces self-transcendent values (Stern, Dietz, and Guadagnano, 1998). It was found that PCC had a positive effect on social identification ($\beta = .43$, $p < .01$). Also, moderation analysis (Baron & Kenny, 1986) showed that the positive influence of PCC on social identification was stronger when self-transcendence was high than when self-transcendence was low. However, these effects were only marginally significant: *F-change*=3.30, $p = .07$.

Study 2 was conducted to further investigate the issues explored in study 1, using an independent sample and different indicators. This study involved 180 participants (mean age = 44 years) recruited from the general public in Dundee and Edinburgh. They completed a questionnaire including the PCC scale, the social identification subscale of the collective self-esteem scale (Luhtanen & Crocker, 1992), and the Loyola Generativity Scale (LGS; MacAdams & de St. Aubin, 1992). This is an instrument measuring 'generativity' (Erikson, 1950), which refers to people's concern for the well-being of future generations, as expressed in parenting, teaching, mentoring, and other activities aimed at leaving a positive legacy of the self for the future (MacAdams & de St. Aubin, 1992). This construct was seen as an appropriate indicator of concern for self-continuity. As expected, regression analyses showed that PCC had a positive

impact on social identification ($\beta = .42$, $p < .01$). However, moderation analysis failed to confirm that the positive influence of PCC on social identification is higher among people with high generativity than among people with low generativity.

Studies 3 and 4: Investigating the connections between PCC and social well-being

Several authors have demonstrated that a sense of self-continuity is at the basis of mental health (e.g., Lampinen, Odegard, & Leding, 2004). As a consequence, since the group is as an aspect of self, perceptions of collective continuity should enhance well-being too. This proposition is consistent with research by Fivush, Bohanek and Duke (2008), who observed that having a sense of self as embedded in an intergenerational family context has positive effects on preadolescents' self-understanding and well-being.

The main aim of studies 3 and 4 was to test the predicted links between PCC and *social* dimensions of well-being. It was hypothesised that people with higher PCC scores would be better integrated into their social group, and would feel less estranged and anomic. A further aim was to test a path model concerning the ways in which PCC affects social well-being. This model predicted that PCC would have positive effects on collective self-esteem (CSE) - because PCC affords the group a sense of timelessness and transcendence thereby providing its members with symbolic immortality - and on perceived group entitativity (PGE) - because PCC contributes to make a collective more like a single, cohesive entity. The model also hypothesised that higher PGE would further enhance CSE. This is because people like to be members of entitative groups (Castano, Yzerbyt, & Bourguignon, 2003) and, as a consequence, high entitativity should enhance people's pride at being members of such groups. Finally, the model predicted that increased CSE would produce greater levels of social well-being, in accordance with research conducted by Bettencourt and Dorr (1997) who found that CSE is a predictor of subjective well-being.

Study 3 involved a sample of 150 individuals (mean age = 38 years) recruited from the general public in Dundee, while study 4 involved a sample of 145 individuals (mean age = 38 years) recruited from the general public in Valencia (Spain). In both studies, participants completed a questionnaire including measures of PCC, CSE, and PGE, with reference to either the Scottish national group (study 3) or the Valencian regional group (study 4). Concerning

indicators of social well-being, both studies included Srole's (1956) Anomie scale and a measure of Misfit (Cozzarelli & Karafa, 1998). In addition, study 4 included Keyes and Ryff's (1998) scale of Social Well-Being (SWB).

As predicted, in both studies higher levels of PCC were associated with higher levels of social well-being. For instance, Pearson's *r* correlation between PCC and Anomie was -.27 in study 3, and -.25 in study 4. To test the hypothesised model, I conducted path analyses in accordance with a structural equation modelling (SEM) approach. In study 3, I tested two models, one with Anomia and one with Misfit as outcome variable, while in study 4 three models, one with Anomia, one with Misfit, and one with SWB as outcome variable, were tested. Results broadly confirmed the hypotheses. In all models the path coefficients were statistically significant, and the direction of the effects was as predicted. Also, the amount of variance explained by the models was satisfactory: R^2 ranged from .09 to.34. Finally, models had a good fit with the data: e.g., CFI always exceeded .95, and RMSEA ranged from .00 to .08.

Study 5: Perceived continuity of a subgroup and concern for independence from the over-inclusive group

This study investigated the effects of the perceived continuity of a subordinate group on the desire for independence of such a group from a superordinate group. It was predicted that these effects would depend on the level of identification with the superordinate group. People who are highly identified with the superordinate group should see the continuity of the subordinate group as a sign of a long history of relatedness to the superordinate group. Therefore, in this case higher PCC should result in less desire for independence. On the contrary, people who do not identify highly with the superordinate group should see the continuity of the subordinate group as a sign of long history of distinctiveness of the subordinate group. Therefore, in this case higher PCC should result in a stronger desire for independence.

This study involved 170 undergraduate students (80 Scottish from Dundee University, and 90 Valencians from the University of Valencia). They completed a questionnaire including measures of PCC with reference to the subordinate group (i.e., either Scotland or Valencia), as well as measures of identification with the superordinate group (i.e., either Great Britain or

Spain) and an item asking about the desire for independence of the subordinate group from the superordinate group.

Results were consistent with hypotheses. Identification with the superordinate group was much higher among Valencians than among Scottish respondents: t (1, 168) = 3.57, $p < .001$. Also, among the Scottish participants, PCC had positive effects on desire for independence (β = .31, $p < .01$), while among Valencian participants the effect of PCC on desire for independence was negative (β = -.24, $p < .05$).

Studies 6, 7, 8, and 9: PCC as a defence against existential threats

According to terror management theory (TMT) (Pyszczynski, Greenberg, & Solomon, 2000), the inevitability of death conflicts with our instinctual motive for self-preservation, and as a consequence it creates intense existential anxiety. TMT has demonstrated that identifying with a group and defending its worldviews constitutes a psychological defence against such anxiety. According to TMT, this is because the group values and beliefs have *continuity through time*, and therefore people who embrace them are afforded a sense of death transcendence and symbolic immortality. This assumption, however, has never been tested empirically.

Study 6 was designed to test this hypothesis. That is, it aimed to demonstrate that perceptions of group continuity mediate the effects of mortality salience on group identification. A sample of 88 students at the University of Valencia (Spain) participated in this study, which was based on a TMT experimental paradigm. Participants were randomly assigned to either a mortality salience condition - in which they wrote about the emotions that the thought of their own death aroused in them - or to a control condition - in which they wrote about the emotions that the thought of their next important exam aroused in them. After a distractive task aimed at putting the idea of death out of focal consciousness, participants filled out a questionnaire including the PCC scale and Doosje et al.'s (1995) measure of social identification (order of presentation was counterbalanced). All scale items referred to the Spanish national group.

Two independent t-tests confirmed that both PCC and social identification scores were higher among participants in the mortality salience condition than among participants in the control condition. The hypothesised mediational model was tested through mediation analysis (Baron & Kenny, 1986). Regressions showed that the influence of the experimental condition on

group identification was significant, $\beta = .24$, $p < .05$, and that the impact of PCC on group identification was also significant, $\beta = .34$, $p < .01$. Also, and crucially, a regression analysis with both the experimental condition and PCC predicting group identification revealed that, this time, the effect of PCC on group identification was $\beta = .31$, $p < .01$, while the direct effect of the experimental condition on group identification was non-significant: $\beta = .10$, $p > .05$. This confirmed that, as predicted, PCC carries the influence of the experimental condition on group identification.

Study 7 was designed to replicate results emerged from study 6, and to test the prediction that the effects of mortality salience on PCC would be more accentuated among high rather than low self-esteem people. This is because, as contended by TMT, self-esteem is a buffer against fear of death. The procedure for study 7 - which involved 80 students at the University of Valencia (Spain) - was exactly the same as in study 6. However, this time, participants completed a self-esteem scale (Rosenberg, 1965) two weeks before the experimental session. Analyses confirmed results obtained in study 6. However, hypotheses about the moderating effects of self-esteem were not confirmed, as even high self-esteem individuals perceived substantially more collective continuity when thinking about death than when thinking about an exam.

While the thought of death constitutes the most immediate, direct psychological threat to the survival of the self, there exist other thoughts that may produce psychological threats to survival. According to Bowlby (1969), one such thought is the sense that a 'secure base' – i.e., one's conviction that in case of distress there are significant others who can be approached and will offer support – is lacking. A need for a secure base is part of our bio-psychological make up, and it emerged at the dawn of human history, when mother-infant physical contact protected infants from predators, thereby enhancing infants' chances of survival. Although we now live in a completely different environment, lack of a secure base still produces distress and fear.

Study 8, which involved 51 students at Dundee University, tested the prediction that PCC can be deployed as a psychological defence against threats to a secure base. Participants had to perform either of two guided imagination tasks. In the 'insecure base' condition participants had to imagine a situation in which they were distressed but the person from whom they would normally expect help was not supportive (adapted from Mikulincer & Arad, 1999). In the control condition participants imagined that a person bag-snatched them in the street.

Following the priming, participants completed a PCC scale (with reference to the Scottish group). It should be observed, however, that people with high levels of spatial-symbolic self - i.e., people who feel particularly threatened by the "destruction or eradication of familiar markers and symbols of one's identity" (Burris & Rempel, 2004, p. 25) - may experience bag-snatching as self-threatening too. Therefore, two weeks prior to the experiment participants took part in a pre-testing session in which they completed a measure of 'spatial-symbolic self' (SSS), which is part of the Amoebic Self scale (Burris & Rempel, 2004). It was hypothesised that people with high SSS scores would display high levels of PCC in both conditions of the experiment, because they would perceive both insecure base and bag-snatching as threatening, but that low SSS people would rate PCC as higher in the insecure base than in the bag-snatching condition, because only the former situation would be perceived by them as psychologically threatening. Statistical analysis of data confirmed the predicted interaction between the experimental condition and SSS: F (3, 48) = 4.22, $p < .05$.

Study 9 was conducted in order to replicate these results. In addition, I wanted to explore the possibility that a further dimension of Burris and Rempel's amoebic self, that is the bodily self (BS) - which concerns the extent to which one feels threatened by the idea that the bodily envelope is breached - would also interact with the experimental condition. It was expected that PCC ratings made by high BS people would be similar in the two conditions, because they would experience bag-snatching as a violation of their body, and therefore as a threat from which to defend the self. On the other hand, it was expected that low BS people would rate PCC as higher in the insecure base than in the bag-snatching condition. A sample of 46 students at Dundee University participated in this study. The procedure was the same as in study 8. However, this time the pre-testing session included also a measure of BS. Data analysis showed a marginally significant interaction between the experimental condition and SSS: F (3, 43) = 3.69, $p = .06$, thereby replicating, to some extent at least, results from study 8. On the contrary, the predicted interaction between experimental condition and BS did not emerge, in that even high BS had higher PCC scores in the insecure base condition than in the bag-snatching condition.

Studies 10, 11, and 12: Perceived family continuity, family identification, and well-being

Researchers interested in family storytelling and the family life cycle (e.g., Pratt & Fiese, 2004) argue that family members construe shared narratives about the intergenerational family - emphasising family culture, values, and norms - in order to establish symbolic links between different family generations and to maintain a sense of family continuity, identity, and integrity (Kellas, 2005). In turn, a sense of family continuity and a strong family identity improve family functioning and foster well-being in the family members (Fivush, Bohanek, & Duke, 2008). These, however, are qualitative studies involving very small samples. The aim of my last three studies was to explore the interplay between perceived family continuity, family identification, and psychological well-being in the adult population, using procedures that may overcome the limitations of existing research.

Study 10 involved 149 students recruited at the University of Valencia, who completed a questionnaire including 26 items tapping on the notion of perceived family continuity (PFC), and measures of Family Identification (FI) (e.g., Doosje et al., 1995), Perceived Group Entitativity (PGE), General Family Functioning (GFF) (Epstein, Baldwin, & Bishop, 1983), Family Knowledge (FK) (a measure designed specifically for this study to assess respondents' degree of knowledge of their family history), and Psychological Well-Being (PWB) (Ryff, 1989).

The 26 PFC items were first submitted to principal component analysis, which revealed the existence of a single meaningful factor. At this point I selected 14 items based on factor loadings, and submitted them to structural equation modelling (SEM) in order to reduce the number of items further. This procedure led to a 7-item model with a very good fit with the data: (e.g., CFI = .98; RMSEA = .07). The seven items had good internal consistency, $\alpha = .91$, and so they were combined into a PFC scale in subsequent analyses. As expected, PFC correlated positively with all other measures, with Pearson's *r* ranging from .20 to .61. This confirmed that PFC is intimately related to a sense of family cohesion, to the functioning of the family, to the degree to which one identifies with the family, and to a sense of being a typical representative of family values and characteristics. Also, these perceptions are generally linked to good psychological stability and happiness.

In study 11, 152 Spanish adults recruited from continuing education and training courses at Valencia University (mean age = 41 years) completed a questionnaire including the PFC scale,

together with FI, PGE, PWB, and the Loyola Generativity Scale (LGS). This last measure was included in order to test the prediction that people with higher perceptions of family continuity should particularly appreciate the intrinsic value of intergenerational connections, and therefore should be highly generative (i.e., should have stronger concerns for the well-being of future generations). Analysis revealed positive correlations between PFC and all the other variables, thereby replicating results of study 10 and confirming the new hypothesis. I also tested a path model by means of structural equation modelling that, in line with expectations, indicated that PFC predicts FI ($\beta = .42$; $p < .01$) and that enhanced FI leads to higher PWB ($\beta = .38$; $p < .01$). The fit of the model with the data was good: e.g., CFI = 1.00; RMSEA = .03.

Encouraged by the two studies above, a further questionnaire study was conducted in Scotland, involving 200 students at the University of Dundee, in order to refine and improve the PFC scale. The original 7 items were included in the questionnaire, together with a set of new items. The questionnaire also included some social identity related measures, e.g., family identification, and a set of well-being measures, e.g., satisfaction with life (Diener et al., 1985). Factor analysis led to the selection of two factors. Consistent with the original PCC scale, these two factors concerned the perceived cultural continuity and the perceived historical continuity of the family respectively. After dropping some items on the basis of structural equation modelling procedures, a two-factor model holding good fit with the data was achieved (e.g., CFI = .98; RMSEA = .08). As a result, a two-dimensional PFC scale was constructed. Correlation analyses confirmed the positive link between PFC and social identity and well-being indicators.

Conclusions

Overall, the 12 studies constitute a further demonstration that perceiving groups as entities that move through time has numerous and important implications, and that studying PCC may help social psychologists to enhance their general understanding of core issues in the domain of group processes, social integration, and well-being. It is worthwhile to remember, however, that some of the predicted effects were only partially confirmed by results, and some effects were not confirmed. I am referring to two specific issues. First, it is still unclear whether PCC and group identification are more strongly connected among people with high, rather than low concern for self-continuity. More research is needed in order to find an answer to this question.

In such research, it will be important to use especially devised indicators of concern for self-continuity, instead of using indicators that were not originally conceived as indicators of concern for self-continuity, which is what I did in studies 1 and 2. Second, the use of PCC as a defence mechanism against fear of death was not moderated by self-esteem, nor was the use of PCC as a defence mechanism against threats to a secure base moderated by bodily amoebic self. These results indicate that a range of individuals wider than previously imagined appear to respond to reminders of death and loss of a secure base with increased PCC. This points to the necessity to refine and extend theory on PCC as a psychological defence mechanism.

Activities

The research described in this report has been discussed with a number of colleagues all around the world, spanning several psychology domains (e.g., social, developmental, cognitive, and neuropsychology). This has led to the creation of an informal network forming the basis of an edited book titled "Self Continuity: Individual and Collective Perspectives", published by Psychology Press at the beginning of 2008. Outstanding scholars such as Jeff Greenberg, Steve Reicher, Jolanda Jetten, John Levine, Russell Spears, Constantine Sedikides, and David Hamilton - just to name a few - have contributed to this book.

This network is also at the basis of a symposium that I presented, together with Vivian Vignoles (University of Sussex), at the Annual Conference of the BPS Social Psychology Section, held in Birmingham in 2006. This symposium was titled "Self-continuity in individuals and groups: Social psychological perspectives", and included presentations by Viv Vignoles, myself, Romin Tafarodi and Daan vanKnippenberg. Russel Spears participated as discussant.

The research has also been presented in various seminars, including one at the University of Lausanne (Switzerland), held in October 2007, one at the University of Milan Bicocca (Italy), held in April 2008, and one at the University of Southampton, held in November 2008.

Outputs

To date, research stemming from this project has been published in two international refereed journal articles and one book chapter, and has been presented in four conferences. A full list is included below.

Journal articles

- Sani, F., Herrera, M., & Bowe, M. (in press). Perceived collective continuity and ingroup identification as defence against death awareness. *Journal of Experimental Social Psychology*.
- Sani, F., Bowe, M., & Herrera., M. (2008). Perceived collective continuity and social well-being: Exploring the connections. *European Journal of Social Psychology, 38*, 365-374.

Book chapters

- Sani, F., Bowe, M., & Herrera, M. (2008). Perceived collective continuity: Seeing groups as temporally enduring entities. In F. Sani (Ed.). *Self-continuity: Individual and collective perspectives*. New York: Psychology Press.

Conference papers and posters

- Bowe, M., Sani, F., Herrera, M., & Bolognesi, A. (2008). Perceived Family Continuity, Well-Being and Family Functioning. *Poster presented at the General Meeting of the European Association of Experimental Social Psychology (EAESP), Opatija, Croatia.*
- Bowe, M., Sani, F., Herrera, M., & Bolognesi, A. (2007). Perceptions of family continuity, family identification, and well-being: a cross-national investigation. *Poster presented at the Annual Conference of the BPS Social Psychology section: Canterbury, England.*
- Sani, F., Bowe, M. & Herrera, M. (2006). Perceived collective continuity: On seeing groups as temporally enduring entities. *Paper presented at the Annual Conference of the BPS Social Psychology section: Birmingham, England.*
- Sani, F. & Bowe, M. (2005). Perceived collective continuity: Seeing the ingroup as an entity that moves through time. *Paper presented* at the *Annual Conference of the BPS Social Psychology section: Edinburgh, Scotland*.

Impacts

This research has had a substantial impact on academics, governmental agencies, and the media. Concerning academics, an increasing number of researchers are using the PCC scale in their work, e.g., Jolanda Jetten and her colleagues at the University of Queensland (Australia), and Immo Fritsche and his colleagues at Friedrich-Schiller-Universität Jena (Germany). Regarding the impact on governmental agencies, I am in a continuous dialogue with members of the Executive-backed Scottish Centre for Confidence and Well-being (based in Glasgow), directed by Dr. Carol Craig. Finally, concerning media interest, the results of this research have been reported in local and national newspapers and magazines. For instance, an extensive article making use of the first preliminary results on the links among PCC, group identification, and well-being, appeared on 23rd October 2005 in the Sunday Herald (author: Esther Black), and a more recent article using results from this research in the context of a discussion on the Scottish 'national psyche' appeared on 16th September 2007 in the Sunday Herald (author: Rachelle Money).

Future research priorities

I am convinced that PCC has wide applicability in social psychological research. At present, I would like to suggest two possible avenues for future research.

(i) In his monumental work 'Principles of Psychology', William James (1890/1981) considered the sense of continuity as a foundational aspect of the 'I', or the 'self as knower'. The importance of individual self-continuity raises the question of how this specific form of continuity may interplay with our sense of collective continuity. Do they reinforce each other? Do they play similar functions? And do deficits in one of these two forms of continuity produce defensive efforts to reinforce continuity in the other form? These are intriguing questions that future research should address.

(ii) It is possible to retrieve countless examples from history, in which collective continuity is sought and promoted in order to afford group members a sense of collective identity, pride, purpose, and direction. However, the type of collective continuity that groups and their elites may claim for themselves is not a given. The ancestors they choose, the deeds

they glorify, and the achievements they emphasize, are selected through a process of active construction (Reicher, 2008). Future research should look at the strategies that elites and people who want to mobilise masses use in order to construe collective continuity. This could be achieved not only through contemporaneous studies, but also through archival studies.

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[i] These objectives broadly match those listed in the original proposal. However, some changes have been made during the project, based on new theoretical insights and useful indications generated by pilot studies. For instance, while I originally planned to explore the interplay between PCC and collective self-esteem (CSE) (study 1 in the research proposal), I eventually decided to replace it with two studies more specifically focussed on the interplay between PCC and social identification (studies 1 and 2 in this report). Also, three of the originally planned studies on secure base and PCC were eventually replaced with three studies of perceived continuity of the family group, which were not included in the original proposal. Notwithstanding these changes, all major issues that were included in the original proposal have been investigated. What is more, this report lists 12 studies, one more than those listed in the original proposal.