

# Social Psychology

## Regaining in-group continuity in times of anxiety about the group's future: A study on the role of collective nostalgia across 27 countries --Manuscript Draft--

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<b>Abstract:</b>	Collective nostalgia for the good old days of the country thrives across the world. However, little is known about the social psychological dynamics of this collective emotion across cultures. We predicted that collective nostalgia is triggered by collective angst as it helps people to restore a sense of in-group continuity via stronger in-group belonging and out-group rejection (in the form of opposition to immigrants). Based on a sample (N = 5956) of individuals across 27 countries, the general pattern of results revealed that collective angst predicts nostalgia, which subsequently relates to stronger feelings of in-group continuity via in-group belonging (but not via out-group rejection). Collective nostalgia generally predicted opposition to immigrants, but this was subsequently not related to in-group continuity.
<b>Keywords:</b>	Collective nostalgia; collective angst; continuity; belonging; immigrants; cross-cultural.
<b>Response to Reviewers:</b>	1.As requested, we have added doi numbers to the reference list.  2.As requested, we have added the SPSS data and syntax files and the AMOS input (.amw) files for the main analyses in the Electronic Online Supplementary Materials. This should enable other scholars to see how we have conducted the main analyses.
<b>Additional Information:</b>	
<b>Question</b>	<b>Response</b>
Has the manuscript or any component of it already been published or is currently under consideration by another journal?	No
If the paper has been written by more than one person, can the corresponding author attest that each author has studied the manuscript in the form submitted, agreed to be cited as a coauthor, and has accepted the order of authorship?	Yes
Does the manuscript ensure the integrity and accuracy of scientific knowledge (i.e., regarding ethical reporting of research results, data retention and sharing, no duplicate and piecemeal publication of data, no plagiarism and self-plagiarism)?	Yes
Have you ensured that all references to author names and affiliations have been removed from the manuscript, tables, figures, and appendices to ensure an	Yes

anonymous review process?	
Has the manuscript been prepared according to the Publication Manual of the American Psychological Association (6th ed.)?	Yes
Is there any conflict of interests concerning the content of this manuscript?	No
Does your submission contain electronic supplementary material (ESM)?	No

Dear Prof. Epstude,

Thank you very much for conditionally accepting our manuscript SoPsy-MS-722 titled "Regaining in-group continuity in times of anxiety about the group's future: A study on the role of collective nostalgia across 27 countries". We have addressed the final points and hope that the manuscript is now ready for publication.

Yours sincerely (on behalf of all co-authors),

Anouk Smeekes

Regaining in-group continuity in times of anxiety about the group's future: A study on  
the role of collective nostalgia across 27 countries

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### Author notes & contributions

The first three authors have produced this manuscript and the fourth and fifth author have provided substantial comments. The first author has written most of the manuscript and conducted the statistical analyses. The second and third author were involved in developing the main idea of the study and rewriting and sharpening the theoretical introduction and discussion of the manuscript. The remaining authors were involved in designing the questionnaire and collecting the data. The work conducted by the authors from Chile was partly supported by the Centre for Social Conflict and Cohesion Studies, COES (15130009) and the Interdisciplinary Center for Intercultural and Indigenous Studies, CIIR (15110006).

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role of collective nostalgia across 27 countries

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The Ipsos Global Trends Survey of 2016 showed that collective nostalgia thrives across the world: in most countries more than 50% of the population would like their country to be the way it used to be (Ipsos Mori, 2016). What is more, in an attempt to mobilize voters against immigration, leaders of populist parties typically harness or even evoke such collective nostalgic sentiments (Mols & Jetten, 2014). This rhetoric seems to pay off as is suggested by the electoral successes of these parties in many Western and non-Western countries. For example, collective nostalgia for the good old days of the country (i.e., "Make America Great Again") seems to have contributed to the election of Donald Trump to the US presidency. While these patterns suggest that evoking collective nostalgia is a powerful tool to mobilise voter support, we know very little about the social psychological dynamics of this collective emotion across cultures.

What is collective nostalgia? While psychologists have extensively studied personal nostalgia (for a review, see Sedikides, Wildschut, Routledge, Arndt, Hepper, & Zhou, 2015b), researchers have only recently started to examine collective nostalgia and its implications for group processes and intergroup relations (Cheung, Sedikides, Wildschut, Tausch, & Ayanian, 2017; Smeeke, 2015; Smeeke, Verkuyten, & Martinovic, 2015; Wildschut, Bruder, Robertson, Van Tilburg, & Sedikides, 2014). The social identity perspective (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and intergroup emotions theory (Mackie, Devos, & Smith, 2000) help to explain the difference between personal and collective nostalgia. According to these perspectives, when group membership becomes part of the psychological self, people experience emotions based on their social identity. This means that, in addition to feeling nostalgic for their unique individual past (personal nostalgia), people can also feel nostalgic for periods and events that concern their shared past



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with fellow group members. While the emotional experience is the same (i.e., a sentimental longing for a positively remembered past) the referent of collective nostalgia is the group rather than the individual. However, unlike personal nostalgia, collective nostalgia can be experienced for a past that individuals have not experienced themselves, through the knowledge of a shared history with fellow group members. As such, people can experience collective nostalgia on the basis of their national identity (i.e., national nostalgia), whereby they long for their positively-remembered country of the past — a past that they share with fellow national in-group members.

Recent work shows that collective nostalgia is not only theoretically but also empirically distinct from personal nostalgia and has different consequences (Smeekes, 2015; Smeekes et al., 2015; Wildschut et al., 2014). That is, studies measuring both personal and collective nostalgia observed that collective (and not personal) nostalgia is related to group-related outcomes (Smeekes, 2015; Smeekes & Verkuyten, 2015; Wildschut et al., 2014). For instance, collective nostalgia is related to higher levels of in-group belonging, in-group protection, exclusionist understandings of in-group identity, and negative attitudes towards outgroups, such as immigrants (Smeekes, 2015; Smeekes et al., 2015; Wildschut et al., 2014). However, these associations were only examined in a few specific cultural contexts and it is hence unclear whether these findings can be generalized across a broader range of countries. In addition, previous studies did not examine potential antecedents of collective nostalgia. Given the widespread condition of collective nostalgia across the world and the potential negative consequences for intergroup relations it is important to understand what causes this emotion among group members. Nostalgia researchers propose that this emotion is triggered by feelings of existential anxiety (e.g., Routledge, Arndt, Sedikides, & Wildschut, 2008) as it has restorative properties for the self. Specifically, it is argued that one key function of nostalgia is to restore a sense of identity continuity (Sedikides et al., 2015a, 2016). However,

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this proposition has not been empirically examined in relation to social identities, such as national identity.

The present research extends existing work by examining, across countries, whether collective nostalgia is triggered by existential concerns about the future vitality of one's group (i.e., collective angst) and whether this subsequently helps people to maintain a sense of in-group continuity by strengthening a sense of connection to fellow in-group members and by rejecting threatening out-groups. Collective angst is a collective emotion that is experienced when group members appraise a situation as potentially harmful to the ingroup's future vitality (for a review see Wohl, Squires, & Caouette, 2012) and studies show that this emotion is related to in-group strengthening behaviours and negative attitudes towards immigrant out-groups (Jetten & Wohl, 2012; Lucas, Rudolph, Zhdanova, Barkho, & Weidner, 2014; Wohl, Branscombe, & Reysen, 2010). As we will explain further below, collective nostalgia might form an explanation for this relationship. We focus on collective angst and collective nostalgia in relation to national identity, as one of the most heated debates in many countries concern the threats to national identity by globalization developments, such as increased immigration flows and supranational decision making. We test our predictions among individuals from 27 countries, using a unique cross-cultural dataset.<sup>1</sup>

### **Collective nostalgia as a buffer against collective angst**

Nostalgia can be defined as a bittersweet emotion as it involves a longing for happy memories of the past that are now gone (Frijda, 2007). Social psychologists have shown that nostalgia is triggered in times of psychological discomfort and distress as it functions as a coping mechanism (for a review, see Sedikides et al., 2015b; Sedikides, Wildschut, Routledge, & Arndt, 2015a). It has been proposed that one key function of nostalgia is to buffer feelings of existential anxiety and insecurity (Sedikides et al., 2015b), and research has shown that people are more likely to experience nostalgia when death related anxiety or

1 threats to self-continuity are made salient (Juhl, Routledge, Arndt, Sedikides, & Wildschut,  
2 2010; Kim & Wohl, 2015; Sedikides et al., 2015a). The reason is that nostalgia helps people  
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4 to maintain or restore a sense of identity continuity (Sedikides et al., 2015a). That is, nostalgia  
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6 connects the present self to both the past and future self, which satisfies the basic  
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8 psychological need for continuity (Vignoles, 2011). Importantly, in facilitating continuity of  
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10 the self, nostalgia provides people with existential security (Landau, Greenberg, & Solomon,  
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12 2008). It does so because, in longing for the past, valued aspects of the self that people want  
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14 to preserve for the future become clear and, thus appropriate action can be taken to  
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16 accomplish that end. Empirical work has indeed demonstrated that nostalgia buffers identity  
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18 threats by restoring self-continuity (Sedikides et al., 2015a).  
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24         Theoretically, collective nostalgia should serve an existential function similar to that  
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26 provided by personal nostalgia — it should restore a sense of in-group continuity in times of  
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28 uncertainty and existential anxiety (see Davis, 1979). While this relationship has so far not  
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30 been empirically examined, social psychologists have studied group-based existential anxiety,  
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32 which is termed ‘collective angst’ (Tabri, Wohl, & Cauette, 2017; Wohl et al., 2012). Similar  
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34 to personal anxiety, collective angst has a future orientation: it originates from a belief that the  
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36 group will be harmed in the future, which differentiates it from the present oriented nature of  
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38 collective fear (Wohl et al., 2010). A central thesis of empirical work on collective angst is  
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40 that, once experienced, group members will take action to facilitate group survival. That is,  
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42 members become motivated to reduce or eliminate perceived threats to a secure and vibrant  
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44 future for their group (see Wohl et al., 2012). We propose that one way in which group  
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46 members may cope with these feelings of anxiety about their group’s future is by dwelling on  
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48 the positively remembered collective past. Similar to personal nostalgia, collective nostalgia  
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50 may counter the negative consequences of feelings of collective angst by restoring a sense of  
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52 in-group identity continuity.  
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### **The mediating roles of in-group belonging and out-group rejection**

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2 A key mechanism linking personal nostalgia to self-continuity is social connectedness  
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4 (Sedikides et al., 2016). The theoretical reasoning is that nostalgic memories are highly social,  
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6 often involving interactions between the self and close others in the context of momentous life  
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8 events (Zhou, Wildschut, Sedikides, Shi, & Feng, 2011). As an important part of people's  
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10 sense of self is based on knowledge about relationships with significant others, this relational  
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12 self is also crucial in maintaining a sense of self-continuity. That is, through nostalgia people  
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14 re-experience important social bonds and hereby re-establish a symbolic connection with  
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16 significant others, which gives them the feeling that their relational self is temporally  
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18 enduring.  
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24 Theoretical sociological work has proposed a similar mechanism for collective  
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26 nostalgia (Boym, 2001; Davis, 1979). That is, longing for the collective past helps people to  
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28 restore a sense of in-group continuity by strengthening belonging to fellow in-group members.  
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30 By engaging in nostalgic reverie about objects, symbols and events from their in-group past  
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32 people would re-establish a symbolic connection with fellow in-group members, which gives  
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34 them the feeling that their social self is temporally enduring. As an important part of people's  
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36 sense of self is based on memberships in social groups (Tajfel & Turner, 1979), this social  
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38 self is also important in maintaining a sense of self-continuity (Smeekes & Verkuyten, 2015).  
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40 Based on the awareness of a shared past, collective nostalgia enables people to re-establish a  
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42 connection with fellow in-group members, which gives them the feeling that their in-group  
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44 identity has continuity over time. While there is no empirical research on the relationship  
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46 between collective nostalgia and in-group continuity, recent studies have shown that  
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48 collective nostalgia strengthens a sense of in-group belonging (Wildschut et al., 2014;  
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50 Smeekes, 2015). Furthermore, various studies have demonstrated that in-group belonging is  
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2 related to a stronger sense of in-group continuity (Sani et al., 2007; Sani, Bowe, & Herrera,  
3 2008; Smeekes & Verkuyten, 2015).

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5 In addition, it is likely that collective nostalgia does not only restore in-group  
6 continuity by strengthening in-group belonging but also by strengthening out-group rejection  
7 (Smeekes & Verkuyten, 2015). Empirical work has shown that collective nostalgia can result  
8 in negative attitudes towards out-groups (i.e., Cheung et al., 2017; Smeekes, 2015; Smeekes et  
9 al., 2015). Based on an integration between self-categorization theory (Turner et al., 1987)  
10 and sociological and anthropological work on collective nostalgia (Davis, 1979; Kasinitz &  
11 Hillyard, 1995; Milligan, 2003), the theoretical explanation for these findings is that collective  
12 nostalgia triggers processes of social categorization which subsequently help group members  
13 to maintain a sense of in-group continuity. Specifically, it is argued that longing for the  
14 collective past makes a social identity based on these shared experiences salient which  
15 highlights similarities between in-group members that were part of this shared past ('old-  
16 timers') and emphasizes differences with those who are not part of this past ('newcomers').  
17 This process of social categorization based on 'the past' is likely to bolster feelings of in-  
18 group continuity not only by strengthening a connection to fellow old-timers but also by  
19 rejecting newcomers that potentially undermine this sense of group continuity (see Milligan,  
20 2003; Smeekes & Verkuyten, 2015). This means that it can be expected that when people feel  
21 anxious about the future vitality of their group (i.e., collective angst) this triggers feelings of  
22 collective nostalgia, which, in turn, strengthens feelings of in-group belonging and out-group  
23 rejection, as a means to restore in-group continuity.  
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### 51 **Overview of the current study**

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53 In this study, we focus on collective angst and collective nostalgia that group members  
54 may experience in relation to their national identity and we examine whether collective  
55 nostalgia buffers collective angst by restoring a sense of national in-group continuity, through  
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stronger national in-group belonging and stronger national out-group rejection. The Ipsos global trends survey (2016) indicates that many people worldwide consider immigrants as a threatening out-group to their national identity<sup>2</sup> and cross-national research indicates that immigrants are negatively perceived in many countries in the world (Semyonov, Rajzman, & Gorodzeisky, 2008). Therefore, opposition to immigrants is an important indicator of out-group rejection in relation to national identity. Furthermore, several cross-national studies indicate that feelings of national in-group pride and belonging are generally high worldwide (e.g., Ariely, 2012; World Values Survey 2010-2014).

In addition, the Ipsos survey shows that high percentages of people across countries feel pessimistic about the future of their country and would like their country to be the way it used to be in the past, suggesting high levels of collective angst and collective nostalgia.<sup>3</sup> We tested our theoretical predictions among individuals in 27 countries. A conceptual model of the hypothesized relationships is presented in Figure 1. Given the lack of cross-cultural studies on collective angst, collective nostalgia and in-group continuity, another goal of this study is to examine the comparability (measurement equivalence) of these constructs across countries.

## Method

### Participants and design

A total of 6112 undergraduate university students residing in 28 countries were recruited from North America (Canada, and the US [one data set from Tennessee and one from Northern California]), South America (Chile, Brazil), Europe (Belgium, Denmark, Finland, France, Germany [one dataset from former East Germany and one from former West Germany], Hungary, Italy, Latvia, Netherlands, Poland, Portugal, Spain, Switzerland, UK), Asia (China, Japan, Malaysia, Singapore, Indonesia, India, Pakistan), Middle East (Iran), Africa (South Africa), and Oceania (Australia). Even though undergraduate students are not

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representative of their country, by restricting our samples in this way, samples across countries were relatively comparable in age and other demographics. They participated in a survey. The original version of the survey was prepared in English and, if necessary, was translated into the native languages of the respective countries using either back-translation or panel methods. Data were collected using either online platforms or hard copy versions of the questionnaires. The data collection process started in January 2014 and ended in February 2015.<sup>4</sup>

We deleted all participants from Italy from this dataset as our measure of collective nostalgia was not included in the survey in this country. This resulted in a total sample of 5956 participants residing in 27 countries (raw dataset and SPSS Syntax can be found in Electronic Supplementary Materials 1 and 2). The mean age of this total sample was 22.44 ( $SD = 6.24$ ; 67.30% female). Missing values for the measures of interest were all below 0.8%.<sup>5</sup> The characteristics of the samples in each country are shown in Table 1.

## Measures

All measures were scored on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Next to conducting reliability analyses of the different scales in SPSS 24.0, we performed a confirmatory factor analysis (CFA) in AMOS 24.0 for each scale on the total sample, in order to evaluate whether the different items loaded well on the proposed construct. On the basis of these results we decided on our measurement model for the subsequent analyses.<sup>6</sup> CFA results were interpreted on the basis of three global fit indices: RMSEA, SRMR and CFI (Billiet & McClendon 2000; Shevlin & Miles, 1998). According to Hu and Bentler (1999), RMSEA values of less than 0.05 are considered to indicate a good model fit, and values of up to 0.08 – .010 represent reasonable errors of approximation in the population. SRMR (value smaller than 0.08) and CFI (value larger than 0.90) provide further indications of a satisfactory model fit (Hu & Bentler 1999). Because of the known sensitivity

of chi-square statistics to sample size (Byrne, 2001), we do not use this test statistic to compare the fit of our models.

**Collective angst.** We measured collective angst ( $\alpha = .85$ ) with four items adapted from Jetten and Wohl (2012; see Table 2). CFA showed that this model had an acceptable fit to the data (RMSEA = .098, SRMR = .019, CFI = .990). All factor loadings were significant (see Table 2) and above the threshold of .40 (Walker & Maddan, 2013).

**Collective nostalgia.** Collective nostalgia was assessed ( $\alpha = .86$ ) with four items adapted from Smeekes et al. (2015; see Table 2). Confirmatory factor analyses showed that this model had an acceptable fit to the data (RMSEA = .086, SRMR = .016, CFI = .992). All factor loadings were significant (see Table 2) and above .40.

**In-group belonging.** The extent to which people felt connected to their country and fellow countrymen ( $\alpha = .79$ ) was measured with five items (adapted from Kosterman & Feshbach, 1989; see Table 2). CFA showed that this model had an acceptable fit to the data (RMSEA = .051, SRMR = .018, CFI = .994). All factor loadings were significant (see Table 2) and above .40, except for the reverse coded item (b5). However, deleting this item from the scale worsened the model fit (RMSEA = .086, SRMR = .017, CFI = .992) and we therefore maintained the measurement model of in-group belonging based on all five items in our analyses on measurement invariance.

**Opposition to immigrants.** We assessed opposition to immigrants ( $\alpha = .91$ ) with 6 items (Table 2) adapted from previous studies (Jetten & Wohl, 2012). CFA showed that this model had a moderate fit to the data (RMSEA = .155, SRMR = .046 CFI = .947). All factor loadings were significant and above .40 (see Table 2). Looking at the modification indices revealed that the model fit could be improved by allowing a correlation between several error terms (of items o1 ↔ o2, o1 ↔ o3, o2 ↔ o3; see Table 2). Adding these correlations resulted in an acceptable model fit (RMSEA = .102, SRMR = .020, CFI = .985). We therefore



maintained this measurement model of opposition to immigrants in our analyses on measurement invariance.

**In-group continuity.** We measured perceived continuity of the national in-group ( $\alpha = .83$ ) using Sani et al.'s (2007) 12-item scale of perceived collective continuity (PCC; see Table 2). This scale consists of two related dimensions, namely perceived cultural continuity (i.e. the extent to which the group norms and values are seen as transmitted from one generation to another), and perceived historical continuity (i.e. the extent to which the different ages, periods, and events in the group history are seen as causally interconnected). Previous research conducted in different countries has already demonstrated that the PCC scale has a good internal consistency (Sani et al., 2007). However, CFA showed that a model with all the items of the PCC scale did not have a good fit to the data (RMSEA = .13, SRMR = .093, CFI = .758). Looking at the standardized factor loadings (see Table 2) revealed that the two reverse coded items (p6 and p12) and p8 did not load well on the PCC factor (loadings < .40). Removing these three items resulted in a better but still not acceptable model fit (RMSEA = .124, SRMR = .064, CFI = .869). The modification indices revealed that the model fit could be improved by allowing a correlation between multiple error terms (p1 ↔ p2, p2 ↔ p4). Adding these correlations resulted in an acceptable model fit (RMSEA = .082, SRMR = .041, CFI = .947). We therefore maintained this measurement model of in-group continuity in our subsequent analyses on measurement invariance.

## Results

### Measurement equivalence across national contexts

We first examined the cross-national comparability of the different constructs by assessing measurement equivalence. We created separate measurement models (based on a single latent variable with multiple indicators) for the five key constructs (see items used for each construct in Table 2) and went through all of the steps for testing measurement

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equivalence across the 27 national contexts for each construct separately. These analyses were conducted using AMOS 24.0 software.

Measurement invariance is typically tested using a stepwise procedure (see Jang et al., 2017). The first step in assessing measurement equivalence is to establish whether there is configural invariance, meaning that the basic model structure is identical across groups (Davidov, Meuleman, Cieciuch, Schmidt, & Billiet, 2014; Milfont & Fisher, 2010; Van de Vijver & Tanzer, 1997). Configural invariance implies that items load onto the same latent factor across groups (i.e., countries); however, factor loadings, intercepts, and residual variances are freely estimated.

Once configural invariance holds, metric invariance is tested (Davidov et al., 2014; Milfont & Fisher, 2010). Metric invariance means that people in different nations understand the items in the same way which allows for the comparison of factor variances and structural relations (e.g., correlations between variables) across groups (Asparouhov & Muthén, 2014). This requires that the factor loadings between the items and constructs are invariant across countries. This is tested by constraining the factor loading of each item on its corresponding latent variable (factor) to be the same across groups.

Once metric invariance holds, scalar invariance is tested to examine whether the intercept of each item is the same across groups in addition to the factor loadings. Scalar invariance allows researchers to compare latent factor means, latent factor variances, and relevant covariance across groups (Davidov et al., 2014; Milfont & Fisher, 2010). To assess scalar invariance, the factor loadings and intercepts are constrained to be equal across groups.

In order to test for measurement equivalence, we used multiple group confirmatory factor analysis (MG-CFA; e.g., Millsap, 2011). The purpose of MG-CFA is to compare latent factor means, latent factor variances and relevant covariance between groups (i.e., countries in our case) after controlling for measurement errors. A such, MG-CFA incrementally tests

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configural, metric, and scalar measurement invariances across countries. Results of these analyses are again interpreted on the basis of the three abovementioned global fit indices: RMSEA (acceptable fit below 0.10), SRMR (acceptable fit below 0.08) and CFI (acceptable fit above 0.90).

The results of the MG-CFA measurement equivalence tests are presented in Table 3. For all latent constructs, except in-group continuity, the fit indices were acceptable for the configural, metric and scalar invariance models. Hence, measurement invariance was supported for collective angst, collective nostalgia, in-group belonging and opposition to immigrants, but not for in-group continuity. To examine the unequal factor structure across the different countries, we performed a CFA of in-group continuity for each country separately using the obtained measurement model indicated in the measurement section. The results of these analyses are reported in Appendix A. This revealed that several items of the in-group continuity scale (p1, p2, p4, p7, p10) had low factor loadings (<.40) in two or more countries. We deleted these items from the scale and tested a new MG-CFA for in-group continuity based on items p3, p5, p9 and p11. The results (Appendix B) showed that measurement invariance was supported for this reduced in-group continuity scale. Importantly, the remaining items all belonged to the cultural continuity subscale (Sani et al., 2007). This means that only the measurement of the cultural continuity sub-scale (based on 4 instead of the original 6 items) was comparable across the countries in our sample. Hence, we focus on in-group continuity based on these 4 items in the remaining analyses.

### **Mean scores and intercorrelations**

Descriptive statistics of the data per country are shown in Table 1. Mean scores and correlations between collective angst, collective nostalgia, in-group belonging, opposition to immigrants and in-group continuity for the total sample are shown in Table 4. Except for collective angst and in-group continuity, all core constructs were positively correlated.

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Collective angst and in-group continuity were negatively correlated, but the correlation was very small. The mean score for collective angst was significantly above the neutral midpoint of the scale,  $t(5949) = 44.22, p < .001$ , indicating that on average people felt worried about the future vitality of their country. However, Table 1 reveals that this is not the case for all countries. Collective angst was highest in Pakistan and South Africa and lowest in the Netherlands and Canada.

The mean score for collective nostalgia for the total sample was significantly below the neutral midpoint of the scale,  $t(5948) = -4.81, p < .001$ , indicating that participants overall reported low feelings of collective nostalgia (see Table 4). However, there was substantial cross-country variation. Collective nostalgia was highest in Malaysia and Indonesia and lowest in Germany and Switzerland (see Table 1).

The mean score for in-group belonging was significantly above the neutral midpoint of the scale,  $t(5947) = 75.67, p < .001$ , indicating that on average participants felt a strong sense of belonging to their country and fellow countrymen. Means scores for in-group belonging were generally high across countries with highest scores in Canada and Pakistan and lowest scores in Germany and Spain (see Table 1).

The mean score for opposition to immigrants was significantly below the neutral midpoint of the scale,  $t(5953) = -38.86, p < .001$ , indicating that on average participants were not strongly opposed to immigrants. Yet, this measure also varied across countries: it was highest in Malaysia and Singapore and lowest in Germany and Chile (see Table 1).

Finally, the mean score for in-group continuity was significantly above the neutral midpoint of the scale,  $t(5937) = 44.80, p < .001$ , indicating that on average participants perceived their national culture and traditions to be temporally enduring. Mean scores for in-group continuity were generally around or somewhat above the neutral midpoint of the scale

with highest scores in India and Indonesia and lowest scores in Finland and France (see Table 1).

### Path analysis for the total sample

We estimated a structural equation model to test our predictions regarding the direct and indirect relations between collective angst, collective nostalgia, in-group belonging, opposition to immigrants and in-group continuity (see overview of hypothesized relationships in Figure 1). We first estimated the model for the full sample using latent variables for the five core constructs. In this model, the error terms of the latent variables for in-group belonging and opposition to immigrants were allowed to correlate. The standardized direct and total effects of this model are presented in Figure 2 (The dataset and AMOS 24.0 input file used for these analyses can be found in Electronic Supplementary Materials 3 and 4). This model had a good fit to the data (RMSEA = .048, SRMR = .052, CFI = .958). In this model, collective angst was positively related to collective nostalgia. Collective nostalgia, in turn, was positively related to in-group belonging and opposition to immigrants, which were both positively related to feelings of in-group continuity.

We subsequently tested the indirect effects of the model using bootstrapping with 10,000 replacement samples to obtain confidence intervals for the indirect paths (Preacher & Hayes, 2008). We observed positive indirect effects (of medium size; see Kenny, 2018) of collective angst via collective nostalgia on in-group belonging ( $\beta = .119$ , low CI = .106, high CI = .133) and on opposition to immigrants ( $\beta = .116$ , low CI = .104, high CI = .144). We also found positive indirect effects of collective nostalgia on in-group continuity via in-group belonging ( $\beta = .124$ , low CI = .110, high CI = .139) and via opposition to immigrants ( $\beta = .041$ , low CI = .029, high CI = .055), but the indirect effect via opposition to immigrants was small. Taken together, these findings show for the total sample: (a) that stronger feelings of collective angst about the country's future are related to higher in-group belonging and

1 opposition to immigrants via a stronger sense of collective nostalgia and (b) that stronger  
2 feelings of collective nostalgia are, in turn, related to a stronger feeling of in-group continuity,  
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4 mostly via in-group belonging and not so much via opposition to immigrants.  
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### 7 **Multiple group path analysis**

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9 We subsequently tested the multiple mediation model (see Figure 1) using multiple  
10 group analysis in AMOS 24.0 using bootstrapping (10.000 replacement samples). We used  
11 manifest variables for the five key constructs as the sample size per country was too small to  
12 estimate a model with latent variables. We estimated the path model, including the indirect  
13 effects, for each country separately again using bootstrapping (10.000 replacement samples)  
14 (The dataset and AMOS 24.0 input file used for these analyses can be found in Electronic  
15 Supplementary Materials 3 and 5). First, the results indicated that the first part of the  
16 mediation model was supported in a majority of countries. That is, Table 5 shows that there  
17 was a positive direct relation between collective angst and collective nostalgia in 22 countries.  
18 Collective nostalgia, in turn, was positively related to in-group belonging in 24 countries and  
19 to opposition to immigrants in 20 countries. In addition, Table 6 shows that there were  
20 significant positive indirect effects (i.e., confidence intervals did not include zero in these  
21 cases) of collective angst via collective nostalgia on (a) in-group belonging (in 20 of the 27  
22 countries) and (b) opposition to immigrants (in 17 of the 27 countries). Indirect effect sizes  
23 were small to medium in most cases (see Kenny, 2018).  
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46 Second, the results indicated that the second part of the mediation model was only  
47 partly supported across countries. That is, Table 5 shows that while in-group belonging was  
48 positively related to in-group continuity in almost all countries (i.e., 25 of the 27), opposition  
49 to immigrants was only positively related to in-group continuity in a small minority of  
50 countries (i.e., 3 of the 27). In addition, Table 6 shows that there were significant positive  
51 indirect effects of collective nostalgia on in-group continuity via in-group belonging in most  
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1 countries (i.e., 21 of the 27). Indirect effect sizes were small to medium in most cases (see  
2 Kenny, 2018). However, a significant indirect effect of collective nostalgia on in-group  
3 continuity via opposition to immigrants only appeared in 3 of the 27 countries and the indirect  
4 effect sizes were small in 2 of the 3 countries.  
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### 8 9 **Alternative models**

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11 We estimated two alternative models for the total sample. In Alternative Model 1, the  
12 positions of collective angst and collective nostalgia were reversed, as one could argue that  
13 longing for the good days from the collective past could make people more afraid of the  
14 future of their country. In Alternative Model 2, we treated collective angst and collective  
15 nostalgia as parallel predictors of in-group belonging and opposition to immigrants, which, in  
16 turn, both predict in-group continuity (Alternative Model 2). The reason is that both collective  
17 emotions are known to be related to in-group strengthening behaviours and negative attitudes  
18 towards threatening out-groups (e.g., Smeekes et al., 2015; Wohl et al., 2010), and could  
19 hence be separate mechanisms. A graphical representation of these alternative models (and  
20 the standardized direct effects of the different paths) is presented in Appendix C. We used the  
21 Akaike Information Criterion (AIC; Akaike, 1974) and Expected Cross Validation Index  
22 (ECVI; Browne & Cudeck, 1993) to compare these competing models to the original model (a  
23 smaller value indicates better fit), as these indices can be used to compare models that need  
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46 However, any two models that have the same paths between the same variables will  
47 have the same fit, even if some paths are in a different direction (see Cheung, Sedikides, &  
48 Wildschut, 2016). For example, consider Alternative Model 1 in which collective nostalgia  
49 precedes collective angst. To test this model, one cannot simply reverse the order of these two  
50 variables, as this yields the same fit as the original model. Following the same approach as  
51 other recent work on collective nostalgia (Cheung et al., 2017), we therefore tested a series of  
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1 mediation models in which each latent variable predicted only the latent variable that  
2 immediately followed it in the postulated causal chain (also for the original model). This  
3 enabled us to evaluate which ordering of variables produced the lowest AIC and ECVI values.  
4 As can be seen in Table 7, both alternative models produced higher AIC and ECVI values  
5 compared to the original model, indicating worse fit. This indicates that our proposed model  
6 fits the data better than the two alternative models in which the order or position of variables  
7 was altered.  
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### 16 Discussion

19 The current study represents the first cross-cultural investigation of collective  
20 nostalgia and its relation with feelings of collective angst, in-group belonging, opposition to  
21 immigrants and in-group continuity. Social psychologists have predominantly studied  
22 personal nostalgia (for a review, see Sedikides et al., 2015b), and research investigating  
23 nostalgia as a collective emotion (and its correlates) is still rare (but see Cheung et al., 2017;  
24 Smeekes, 2015; Smeekes et al., 2015; Wildschut et al., 2014). While some of these recent  
25 studies show that collective nostalgia is related to stronger feelings of in-group belonging and  
26 more negative attitudes towards out-groups (Cheung et al., 2017; Smeekes, 2015; Smeekes et  
27 al., 2015; Wildschut et al., 2014), these relationships have only been examined in a few  
28 cultural contexts. In addition, these studies have not examined potential antecedents of  
29 collective nostalgia. Furthermore, while scholars of nostalgia have proposed that the function  
30 of this emotion is to restore a sense of identity continuity (e.g., Boym, 2001; Cheung et al.,  
31 2017; Davis, 1979; Sedikides et al., 2015a), this proposition has not been empirically  
32 investigated in relation to social identities.  
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53 The current study examined, in 27 countries, whether collective nostalgia on the basis  
54 of one's national identity is predicted by feelings of collective angst, and whether this  
55 subsequently relates to stronger feelings of in-group continuity, via a stronger sense of in-  
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group belonging and a stronger rejection of immigrant out-groups. In addition, since this is the first cross-cultural study on collective nostalgia, collective angst and in-group continuity, another goal was to examine the comparability (measurement equivalence) of these constructs across countries.

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First, the results supported measurement equivalence for all key constructs, meaning that meaningful comparisons of these constructs across these 27 countries could be made. However, for our measure of in-group continuity we only obtained measurement equivalence for a specific subset of items belonging to the perceived cultural continuity sub-scale (Sani et al., 2007). Second, the findings generally supported our hypothesis that collective angst relates to stronger feelings of collective nostalgia, as positive effects were observed in 22 of the 27 countries. Furthermore, we also found support for our prediction that collective nostalgia is related to a stronger sense of in-group continuity via stronger in-group belonging, as indirect effects were observed in 21 of the 27 countries. While collective nostalgia was a relevant predictor of opposition to immigrants in 20 countries, we found very limited support for our prediction that collective nostalgia is related to a stronger sense of in-group continuity via immigrant out-group rejection, as we only observed this indirect effect in 3 countries and the indirect effect size for total sample was very small.

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These findings advance recent work on collective nostalgia in various ways. First, our results show that our previously designed scale of collective nostalgia (see Smeekes, 2015; Smeekes et al., 2015) is suitable to assess cross-cultural comparisons. These findings are in line with recent cross-cultural research on personal nostalgia (Hepper et al., 2014), demonstrating that nostalgia is conceptualised and experienced similarly across cultures.

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Second, this study is the first to explore collective angst as an antecedent of collective nostalgia. Based on previous work on existential anxiety and personal nostalgia (e.g., Juhl et al., 2010), we predicted that feeling anxious about the future vitality of one's country would

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be related to a nostalgic longing for the good old days of one's country in order to cope with this negative psychological state. We found support for this relationship in 21 of the 27 countries. This finding complements work on personal nostalgia (Juhl et al., 2010; Sedikides et al., 2015b) by showing that collective nostalgia could potentially have a similar existential function: serving as a buffer against group-based existential anxiety.

Third, our study is the first to examine the relationship between collective nostalgia and in-group continuity and whether this can be explained by a stronger sense of in-group belonging and out-group rejection. In line with previous work on personal nostalgia (Sedikides et al., 2016) and theoretical sociological work on collective nostalgia (Boym, 2001; Davis, 1979), we found cross-sectional support for the idea that collective nostalgia helps group members to maintain identity continuity by strengthening feelings of belonging and connectedness to fellow in-group members. We propose that the theoretical explanation for this relation is that by engaging in nostalgic reverie about objects, symbols and events from their in-group past people re-establish a symbolic connection with fellow in-group members, which gives them the feeling that their social self is temporally enduring.

While previous work has suggested that collective nostalgia also restores in-group continuity by strengthening out-group rejection (Smeekes & Verkuyten, 2015), we do not find much support for this explanatory mechanism. However, our results replicate the previously observed positive relationship between collective nostalgia and opposition against immigrants in the Netherlands (Smeekes, 2015; Smeekes et al., 2015) and provide some reassurance that this relationship generalizes to other cultures. We find that this association is significant and substantial in 20 of the 27 countries (including the Netherlands). Taken together, these results indicate that while collective nostalgia in relation to one's national identity is related to stronger in-group belonging and stronger out-group rejection, it is only the feeling of in-group belonging (and not out-group rejection) that subsequently helps national in-group members in

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maintaining a sense of identity continuity. This suggests that collective nostalgia in relation to one's national identity triggers processes of social categorization based on the past that can be functional and constructive for intragroup relations on the one hand but destructive for intergroup relations on the other (Smeekes & Verkuyten, 2015). Longing for positively valued objects or periods from the national past makes national in-group members more aware of the traditional values and symbols that bind them as a national community, but also makes clear how "we" are different from other groups. While this is functional and constructive in the sense that this helps people to protect national identity continuity by re-establishing a sense of belonging with in-group members who were part of this past (i.e., old-timers), it can also be destructive for intergroup relations as the salience of this old-timer social identity fosters opposition to those who were not part of this positively valued past (i.e., immigrants/newcomers).

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**Limitations and future directions**

The fact that we did not find much support for a relation between opposition to immigrants and in-group continuity warrants further discussion. One explanation for this finding could be related to the limited measurement of opposition to immigrants, which was based on items that were more directed at perceived threats from immigrants rather than actual opposition to them. While opposing or clearly rejecting an out-group may help in-group members to maintain or restore a sense of identity continuity, feeling threatened by out-groups rather undermines feelings of in-group continuity instead of helping to protect it. In addition, our measurement of opposition was directed at immigrants in general, whereas it is likely that some specific immigrant groups are seen as particularly threatening to national in-group continuity than others. In other words, opposing or rejecting immigrants in general may not help national in-group members to restore identity continuity if feelings of continuity are undermined by some immigrant out-groups but not others. For instance, in several Western

1 countries particularly Muslim immigrants are seen as a threat to the continuity of national  
2 identity as many natives perceive their ways of life to be incompatible with theirs (Kundnani,  
3 2007; Schildkraut, 2007; Sniderman & Hagendoorn, 2007). Far-right parties propose to limit  
4 their presence and visibility of this group in order to protect national identity continuity (Mols  
5 & Jetten, 2014). Hence, prospective studies should further investigate whether out-group  
6 rejection could help group members to restore feelings of in-group continuity by looking at  
7 more concrete measures of out-group rejection and by focusing on out-groups that are seen as  
8 particularly threatening to in-group continuity.  
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10 We should acknowledge some limitations of this study that provide directions for  
11 future work. One limitation is that the data were cross-sectional and were collected among  
12 undergraduate students. This means that it is difficult to make claims about the causality and  
13 generalizability of the observed relationships. Even though the additional analyses suggest  
14 that our proposed mediation model fit the data better than alternative mediation models, this  
15 does not exclude the possibility that the direction of causality could be different. In addition,  
16 while the focus on students made the samples comparable across countries, it should be  
17 acknowledged that students do not present a representative sample of each of these countries.  
18 For instance, we observed that mean scores for collective nostalgia were rather low in our  
19 student sample, while the Ipsos global trends survey (2016) indicates that in most countries  
20 more than half of the population would like their country to return to be the way it used to be.  
21 Future investigations should build on these findings by sampling participants from broader  
22 populations and using experimental and longitudinal designs to establish the direction of  
23 causality.  
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25 Another limitation of our study that provides directions for future research is that we  
26 did not assess potential behavioural outcomes of collective nostalgia. One key proposition of  
27 intergroup emotions theory (Mackie, Devos, & Smith, 2000), is that the function of collective  
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1 emotions is to regulate intragroup and intergroup behaviour. This proposition is in line with  
2 general psychological emotion theories stating that emotions are functional (e.g., Frijda,  
3 2007). Integrating our findings with those from previous work on personal nostalgia (e.g.,  
4 Sedikides et al., 2015a; Sedikides et al., 2016), suggests that an important function of both  
5 personal and collective nostalgia is to restore a sense of identity continuity when it is  
6 threatened. It can therefore be expected that the behavioural tendencies that follow from  
7 nostalgia have the goal of restoring this basic psychological need. Our findings, as well as  
8 recent findings on personal nostalgia (Sedikides et al., 2016) suggest that one important way  
9 in which nostalgia can restore identity continuity is by fostering a stronger sense of social  
10 connectedness to other people. This means that collective nostalgia is likely to result in in-  
11 group strengthening behaviours as a means to protect in-group continuity. Recent work  
12 provides some support for this idea by showing that collective nostalgia is positively related  
13 to in-group favouring collective action tendencies (Cheung et al., 2017) and causes  
14 behavioural intentions to support the in-group (Wildschut et al., 2014). Future work could  
15 investigate whether collective nostalgia restores in-group continuity via such in-group  
16 strengthening behaviours.

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39 It is furthermore important to note that while we observed a positive association  
40 between collective nostalgia and opposition to immigrants in most countries it is likely that  
41 this relationship is not intrinsic but dependent on the way in which collective nostalgia is  
42 defined. For instance, recent work in the Netherlands, based on a content analysis of  
43 collective nostalgia for Dutch national identity, has shown that this link is not present for  
44 people who long for a time when people in their country were more tolerant and respectful  
45 towards one another (Lackner & Smeekes, 2018). An interesting direction for future work  
46 would be to manipulate different contents of collective nostalgia to see whether longing for a  
47 more inclusive national past relates to more positive attitudes towards immigrant out-groups.  
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## Conclusion

1  
2 In the current study, we took an important step towards understanding the social  
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4 psychological dynamics of collective nostalgia across cultures. Social psychologists have  
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6 predominantly studied personal nostalgia and the few studies that have investigated collective  
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8 nostalgia and its relation to group-related outcomes have only examined this in a small  
9  
10 number of cultural contexts. Integrating existing psychological literature on personal nostalgia  
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12 with theoretical sociological work on collective nostalgia, we predicted that collective  
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14 nostalgia is triggered by existential concerns about the future vitality of one's group (i.e.,  
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16 collective angst), because collective nostalgia helps people to maintain a sense of in-group  
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18 continuity by strengthening a sense of belonging to fellow in-group members and by rejecting  
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20 threatening out-groups. We examined these predictions in relation to national identity and  
21  
22 measured out-group rejection in the form of opposition to immigrants. Based on a sample of  
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24 5956 individuals across 27 countries, we first supported measurement equivalence for the key  
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26 constructs (albeit for a reduced scale of in-group continuity). Testing our predictions, the  
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28 general pattern of results revealed that collective angst predicted collective nostalgia, which  
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30 subsequently related to stronger feelings of in-group continuity via in-group belonging (but  
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32 not via opposition to immigrants). Collective nostalgia generally predicted opposition to  
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34 immigrants, but this was subsequently not related to in-group continuity. Given that our data  
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36 was cross-sectional and based on student samples and our measure of out-group rejection was  
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38 limited, we hope that future research will examine these predictions among more  
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40 representative samples using experimental and longitudinal designs, and by focusing on a  
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42 more direct measure of out-group rejection.  
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**Electronic Supplementary Materials**

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2 ESM1. SPSS datafile (.sav) (= Collective nostalgia 27 countries)  
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5 ESM2. SPSS syntaxfile (.sps) (= Syntax SPSS Smeekes et al. (2018))  
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7 ESM3. SPSS datafile (.sav) (= Collective nostalgia 27 countries (for AMOS nonmis)  
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9 ESM4. AMOS graphics file (.amw) (= Sem model figure 2)  
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11 ESM5. AMOS graphics file (.amw) (= Multiple group analysis)  
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## Footnotes

<sup>1</sup>Data were collected in 28 countries, but we deleted all participants from Italy from the dataset as our measure of collective nostalgia was not included in the survey in this country.

<sup>2</sup>See <https://www.ipsosglobaltrends.com/presence-of-immigrants/>

<sup>3</sup>See <https://www.ipsosglobaltrends.com/longing-for-the-past/> and <https://www.ipsosglobaltrends.com/country-optimismpessimism/>

<sup>4</sup>Another paper using the same dataset has been published (Teymoori et al, 2016; Study 3a), but this paper contains none of the measures under investigation.

<sup>5</sup>One of the items of the in-group continuity scale (p10) was not assessed in China and hence missing for all participants from this country.

<sup>6</sup>For all analyses in AMOS 24.0 missing values for the measures of interest were imputed in SPSS using the Estimation-Maximization Algorithm. The dataset used for the analyses in AMOS can be found in Electronic Supplementary Materials 3.



## Appendix A

## Standardized factor loadings for in-group continuity per country

Country	<i>p1</i>	<i>p2</i>	<i>p3</i>	<i>p4</i>	<i>p5</i>	<i>p7</i>	<i>p9</i>	<i>p10</i>	<i>p11</i>
1. Australia	.635	<b>.366***</b>	.734***	<b>.365***</b>	.705***	.448***	.867***	<b>.373***</b>	.666***
2. Belgium	.643	.466***	.726***	.620***	.449***	.606***	.659***	<b>.329***</b>	.757***
3. Brazil	.625	<b>.368***</b>	.708***	.586***	.508***	<b>.382***</b>	.658***	.459***	.700***
4. Canada	.655	.497***	.750***	.607***	.796***	.469***	.677***	.599***	.778***
5. Chile	.680	.461***	.863***	.588***	.594***	.524***	.723***	.532***	.802***
6. China	.484	<b>.395***</b>	.723***	.747***	.465***	<b>.367***</b>	.625***	.533***	.619***
7. Denmark	.723	.654***	.845***	.652***	.651***	.739***	.783***	.403***	.823***
8. Finland	.665	.573***	.687***	.514***	.616***	.590***	.522***	.483***	.711***
9. France	.715	.539***	.702***	.556***	.469***	.576***	.639***	.508***	.803***
10. Germany	.619	.455***	.725***	.543***	.675***	.612***	.696***	.442***	.670***
11. Hungary	<b>.310</b>	.420***	.595***	.506***	.706***	.586***	.545***	.482***	.735***
12. India	.552	.421***	.688***	<b>.378***</b>	<b>.136</b>	<b>.332***</b>	<b>.361***</b>	<b>.361***</b>	.619***
13. Indonesia	.552	.514***	.690***	.601***	.719***	.543***	.565***	.577***	.650***
14. Iran	.793	.576***	.839***	.681***	.799***	.565***	.724***	.548***	.798***
15. Japan	.598	.609***	.729***	.659***	.673***	.438***	.709***	.579***	.652***
16. Latvia	.721	<b>.266***</b>	.758***	.696***	.721***	.740***	.721***	.540***	.633***
17. Malaysia	.585	.653***	.735***	.785***	.576***	.451***	.689***	.777***	.810***
18. Netherlands	.588	.573***	.803***	.632***	.766***	.593***	.714***	.574***	.772***
19. Pakistan	.632	.521***	.728***	.530***	.434***	<b>.300***</b>	.540***	.451***	.555***
20. Poland	.524	.583***	.700***	.592***	.735***	.545***	.715***	.421***	.697***
21. Portugal	.521	.621***	.794***	.639***	.604***	.606***	.772***	.490***	.654***
22. Singapore	.656	.664***	.801***	.714***	.832***	.541***	.652***	.701***	.731***
23. South Africa	.626	.540***	.749***	.616***	.623***	.466***	.641***	.603***	.690***
24. Spain	.619	<b>.322***</b>	.576***	.606***	.648***	.507***	.720***	.558***	.789***
25. Switzerland	.583	.509***	.775***	.672***	.742***	.669***	.794***	.519***	.784***
26. UK	<b>.341</b>	<b>.253**</b>	.705**	.535**	.771**	.643**	.555**	<b>.243**</b>	.640***
27. US	.559	.484***	.731***	.610***	.666***	.440***	.635***	.503***	.727***

Note. The loading of the first item of the scale is constrained to be 1 and hence no significance level is displayed. Coefficients in bold denote factor loadings below .40.

## Appendix B

Fit indices of the additional measurement invariance tests for in-group continuity

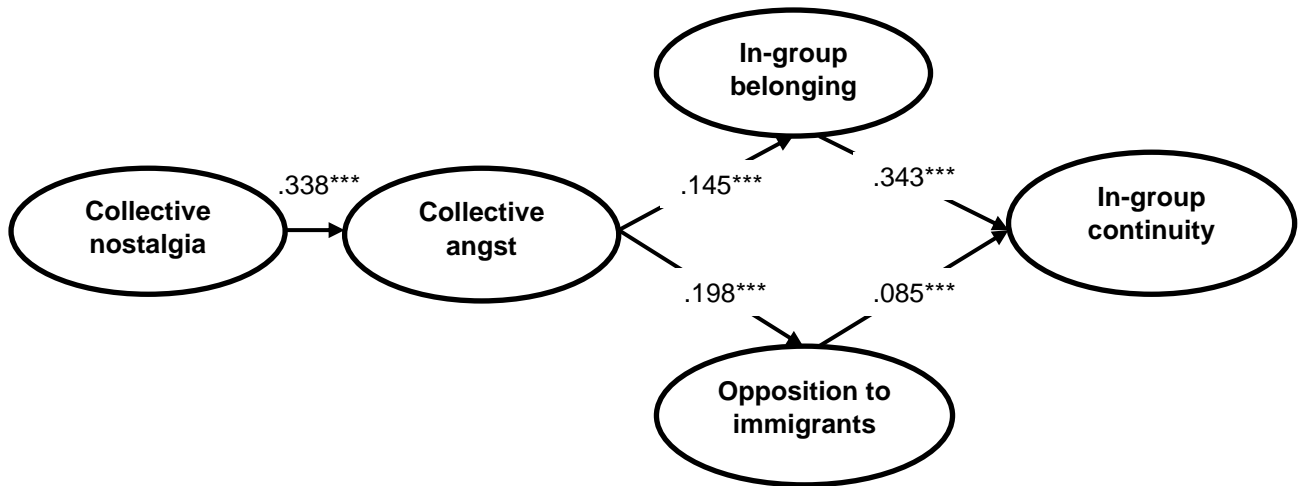
	<i>Chi-square</i>	<i>df</i>	<i>RMSEA</i>	<i>SRMR</i>	<i>CFI</i>
Configural invariance	216.09	796	.023	.012	.981
Full metric invariance	387.81	935	.018	.026	.969
Scalar invariance	504.93	961	.017	.027	.958

*Note.* RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual, CFI = Comparative Fit Index.

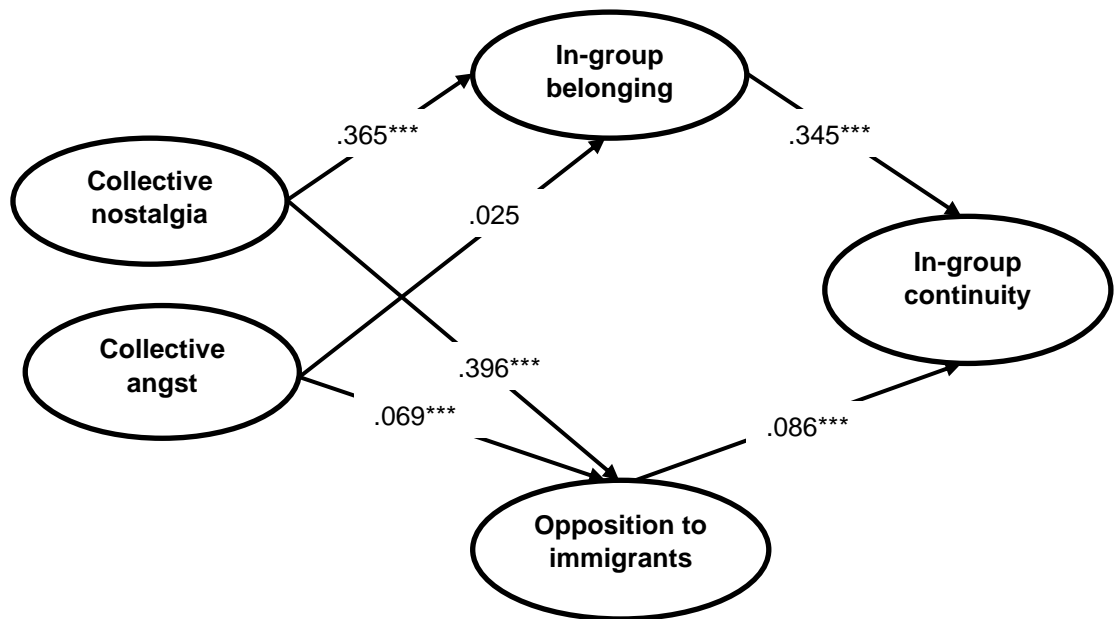
Appendix C

Graphical representation of alternative models on the total sample with standardized path coefficients

Alternative model 1: Positions of collective nostalgia and collective angst reversed



Alternative model 2: Collective angst and collective nostalgia as parallel predictors



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**Table 1.** Mean scores on the key measures for each national sample

	Country	N	% female	Age (Mean)	Collective angst (Mean)	Collective nostalgia (Mean)	In-group belonging (Mean)	Opposition to immigrants (Mean)	In-group continuity (Mean)
1.	Australia	149	71.8	22.17	4.53	3.65	5.35	2.55	4.57
2.	Belgium	242	22.1	20.37	4.73	3.71	4.86	3.57	4.08
3.	Brazil	146	63.2	23.99	5.39	3.59	5.31	2.56	4.08
4.	Canada	233	79.6	20.35	3.74	3.79	5.85	2.67	5.05
5.	Chile	151	33.3	20.64	4.71	3.42	5.18	2.04	4.05
6.	China	151	78.8	21.62	3.85	4.07	5.42	3.82	4.81
7.	Denmark	164	70.7	22.68	4.22	3.66	5.29	3.38	4.86
8.	Finland	113	77.0	25.58	4.80	3.21	5.22	2.31	3.99
9.	France	150	83.2	19.53	5.21	4.39	4.83	2.81	3.97
10.	Germany	322	70.8	22.05	3.98	2.46	4.14	2.45	4.06
11.	Hungary	160	40.3	24.75	5.55	3.65	5.23	3.12	4.21
12.	India	145	66.7	20.47	5.22	4.82	5.62	4.21	5.00
13.	Indonesia	557	77.4	21.42	4.84	5.23	5.38	4.09	5.05
14.	Iran	170	54.1	22.49	5.34	4.77	5.12	3.83	4.26
15.	Japan	382	57.0	18.81	4.95	3.70	4.47	3.49	4.72
16.	Latvia	149	53.0	23.44	5.56	4.07	5.12	3.52	4.90
17.	Malaysia	112	84.8	23.20	5.50	5.48	5.24	5.25	4.99
18.	Netherlands	208	79.3	19.40	3.54	3.21	4.90	3.46	4.80
19.	Pakistan	150		19.29	5.59	4.97	5.67	3.84	4.70
20.	Poland	180	73.4	27.72	5.01	3.87	4.84	2.86	4.83
21.	Portugal	160	71.1	22.24	5.48	4.25	5.43	2.81	4.54
22.	Singapore	193	66.3	21.66	4.40	4.90	5.50	4.56	4.95
23.	South Africa	451	81.4	21.10	5.59	3.79	5.42	3.33	4.69
24.	Spain	277	72.6	35.66	4.66	3.51	4.44	2.86	4.65
25.	Switzerland	448	64.2	24.13	3.92	2.67	5.12	2.55	4.53
26.	UK	74	83.6	21.22	4.17	3.77	5.05	3.14	4.65
27.	US	319	59.1	21.06	4.90	4.21	5.19	3.19	4.62

*Note.* The survey in Pakistan did not specify participants' gender.

**Table 2.** Items and standardized factor loadings for collective angst, collective nostalgia, in-group belonging, opposition to immigrants and in-group continuity.

		<i>Factor loading</i>
<b>Collective angst</b>		
c1	I am worried about the future vitality of [country].	.827***
c2	I feel anxious about the future wealth of [country].	.788***
c3	I am concerned that the future vitality of [country] is in jeopardy.	.833***
c4	I have the impression that things in [country] are taking a turn for the worse.	.574***
<b>Collective nostalgia</b>		
n1	I get nostalgic when I think back of [country] in past times.	.783***
n2	I often think back about the good old days.	.865***
n3	I often long for [country] of the past.	.800***
n4	I experience nostalgic feelings when I hear [country's] music from the past.	.661***
<b>In-group belonging</b>		
b1	I am proud to be a [national].	.790***
b2	In a sense, I am emotionally attached to [country] and emotionally affected by its actions.	.707***
b3	Although at times I may not agree with the government, my commitment to [country] always remains strong.	.822***
b4	The fact that I am a [national] is an important part of my identity.	.781***
b5	In general, I have very little respect for the [country's] people. (R)	.348***
<b>Opposition to immigrants</b>		
o1	Immigrants take resources and employment opportunities away from [countrymen].	.777***
o2	In schools where there are too many children of immigrants, the quality of education will suffer.	.804***
o3	Immigrants abuse the system of social benefits.	.776***

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o4	[Country's] norms and values are being threatened by the presence of immigrants.	.517***
o5	The cultural practices of immigrants threaten the [country's] way of life.	.405***
o6	Immigrants are a threat to the [country's] identity.	.506***
<b>In-group continuity</b>		
p1	[Country's] people have passed on their traditions across different generations.	.594***
p2	[Country's] history is a sequence of interconnected events.	.536***
p3	Shared values, beliefs and attitudes of [country's] people have endured across time.	.739***
p4	Major phases in [country] history are linked to one another.	.571***
p5	Throughout history the members of the [country's] community have maintained their inclinations and mentality.	.658***
p6	There is no connection between past, present, and future events in [country]. (R)	.160***
p7	[Country's] people will always be characterized by specific traditions and beliefs.	.541***
p8	There is a causal link between different events in [country] history.	.349***
p9	[Country] has preserved its traditions and customs throughout history.	.748***
p10	The main events in [country] history are part of an 'unbroken stream'.	.542***
p11	[Country's] people have maintained their values across time.	.711***
p12	There is no continuity between different times in [country] history. (R)	.160***

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Note. (R) indicates reverse scored items, \*\*\* $p < .001$

**Table 3.** MG-CFA: Fit indices of the measurement invariance tests

	<i>Chi-square</i>	<i>df</i>	<i>RMSEA</i>	<i>SRMR</i>	<i>CFI</i>
<b>Collective angst</b>					
Configural invariance	368.13	54	.031	.020	.970
Full metric invariance	681.42	132	.026	.028	.947
Scalar invariance	896.94	158	.028	.028	.923
<b>Collective nostalgia</b>					
Configural invariance	184.00	54	.020	.014	.986
Full metric invariance	517.05	132	.022	.020	.960
Scalar invariance	682.01	158	.024	.020	.945
<b>In-group belonging</b>					
Configural invariance	450.99	135	.020	.040	.971
Full metric invariance	865.97	239	.021	.060	.943
Scalar invariance	1207.03	265	.024	.068	.914
<b>Opposition to immigrants</b>					
Configural invariance	627.32	46	.022	.023	.979
Full metric invariance	1014.88	156	.020	.026	.968
Scalar invariance	1171.11	178	.021	.041	.962
<b>In-group continuity</b>					
Configural invariance	3642.55	796	.025	.066	.857
Full metric invariance	4045.09	935	.024	.104	.843
Scalar invariance	4164.58	961	.024	.109	.839

*Note.* RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual, CFI = Comparative Fit Index.

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**Table 4.** Mean scores, standard deviations and bivariate correlations for the total sample

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Collective angst	4.75	1.31	–	.278***	.051***	.170***	-.051***
2. Collective nostalgia	3.91	1.52		–	.280***	.372***	.177***
3. In-group belonging	5.12	1.14			–	.152***	.298***
4. Opposition to immigrants	3.27	1.46				–	.158***
5. In-group continuity	4.61	1.05					–

*Note.* \*\*\* $p < .001$



**Table 5.** Results path model per country; standardized direct and total effects

Country	Angst → Nostalgia	Angst → In-group belonging	Angst → In-group belonging	Angst → Opposition	Angst → Opposition	Nostalgia → In-group belonging	Nostalgia → Opposition	Nostalgia → In-group continuity	Nostalgia → In-group continuity	In-group belonging → In-group continuity	Opposition → In-group continuity
	(direct)	(direct)	(total)	(direct)	(total)	(direct)	(direct)	(direct)	(total)	(direct)	(direct)
1. Australia	.084	-.100	-.075	-.039	-.014	.292***	.296***	.181*	.275***	.232**	.088
2. Belgium	.234***	-.041	-.018	.013	.080	.095	.289***	.038	.083	.261***	.070
3. Brazil	.290***	.115	.106	.180*	.237**	-.034	.199*	-.029	-.046	.091	-.070
4. Canada	.243***	-.240***	-.185**	.030	.098	.228***	.278***	.226***	.292***	.356***	-.054
5. Chile	.200*	.224**	.257**	.237**	.238**	.165*	.004	.015	.076	.370***	.004
6. China	.157†	-.171*	-.126*	.237**	.265**	.287***	.179*	-.160*	-.037	.347***	.129
7. Denmark	.307***	-.033	.077	.256***	.333***	.357***	.249**	-.008	.216**	.556***	.103
8. Finland	.084	-.061	-.050	.164†	.187*	.134	.277**	.021	.079	.231*	.096
9. France	.369***	-.057	.036	-.005	.133	.250**	.373***	-.073	.013	.272**	.049
10. Germany	.354***	.039	.149**	.115*	.254***	.309***	.393***	.125*	.185**	.248***	-.041
11. Hungary	.104	-.271***	-.255**	.035	.053	.150*	.168*	.151*	.181*	.186*	.012
12. India	.185*	.198*	.225**	.107	.075	.148†	-.174*	.163*	.202*	.345***	.070
13. Indonesia	.087*	-.156***	-.127**	.107**	.130**	.329***	.267***	.146***	.247***	.225***	.100*
14. Iran	.323***	.320***	.383***	-.068	.072	.193**	.434***	-.004	.049	.310***	-.017
15. Japan	.056	.078	.091†	.189***	.191***	.235***	.049	.131**	.190***	.271***	-.093†
16. Latvia	.132	.061	.088	.058	.075	.201*	.126	.154*	.230**	.327***	.084
17. Malaysia	.265**	.104	.194*	.323***	.354***	.341***	.120	.204*	.303**	.245**	.127
18. Netherlands	.248***	-.195**	-.116†	.088	.153*	.321**	.265***	-.046	.044	.336***	-.068
19. Pakistan	.350***	.133	.242**	-.062	-.059	.309***	.010	-.042	-.028	.046	-.026
20. Poland	.139†	.141†	.176*	.151*	.154*	.247***	.021	.055	.091	.139†	.035
21. Portugal	.272***	.012	.070	-.004	.072	.215**	.237**	-.028	.018	.212**	-.005
22. Singapore	.145*	.006	.039	.336***	.366***	.226**	.204**	.040	.128†	.303***	.093
23. South Africa	.110*	-.069	-.060	.044	.060	.088†	.149**	.009	.031	.193***	.032
24. Spain	.365***	-.077	.013	-.011	.048	.247***	.162*	-.007	.043	.106†	.150*
25. Switzerland	.258***	-.016	.040	.041	.148**	.214***	.415***	.027	.173**	.317***	.187***
26. UK	.232*	-.130	-.056	-.058	.029	.321**	.377***	.153	.319**	.383***	.113
27. US	.216***	-.135*	-.044	.091†	.162**	.424***	.328***	.024	.135*	.264***	-.003

Note. Total effects are only reported for paths that include a mediator. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , † $p < .10$

**Table 6.** Results path model per country; standardized indirect effects (with 95% confidence intervals)

Country	<i>Angst</i> → <i>In-group belonging</i> (via nostalgia)		<i>Angst</i> → <i>Opposition</i> (via nostalgia)		<i>Nostalgia</i> → <i>In-group continuity</i> (via in-group belonging)		<i>Nostalgia</i> → <i>In-group continuity</i> (via opposition)	
1. Australia	.024	[-.019, .085]	.025	[-.018, .086]	.070**	[.022, .148]	.032	[-.013, .099]
2. Belgium	.022	[-.005, .064]	.068***	[.030, .124]	.025	[-.008, .066]	.024	[-.011, .069]
3. Brazil	-.010	[-.068, .038]	.058*	[.013, .130]	-.003	[-.041, .011]	-.015	[-.069, .015]
4. Canada	.055***	[.021, .110]	.068***	[.030, .122]	.081***	[.035, .140]	-.013	[-.056, .021]
5. Chile	.033*	[.003, .091]	.001	[-.034, .093]	.060*	[.006, .133]	.000	[-.016, .014]
6. China	.045*	[.003, .111]	.028*	[.001, .084]	.102***	[.043, .186]	.027	[.000, .083]
7. Denmark	.111***	[.052, .192]	.076**	[.029, .147]	.201***	[.116, .308]	.035	[-.001, .097]
8. Finland	.011	[-.009, .068]	.023	[-.024, .089]	.030	[-.005, .102]	.023	[-.025, .097]
9. France	.092**	[.030, .176]	.138***	[.071, .232]	.066**	[.018, .142]	.026	[-.036, .103]
10. Germany	.110***	[.066, .165]	.139***	[.091, .197]	.074***	[.036, .126]	.018	[-.029, .068]
11. Hungary	.016	[-.004, .060]	.018	[-.004, .065]	.028*	[.001, .080]	.005	[-.019, .041]
12. India	.027*	[.000, .084]	-.032*	[-.091, -.002]	.051	[-.001, .121]	-.010	[-.057, .012]
13. Indonesia	.029*	[.003, .060]	.022*	[.003, .046]	.073***	[.044, .110]	.026*	[.004, .053]
14. Iran	.062**	[.017, .127]	.140***	[.075, .227]	.060**	[.016, .127]	-.010	[-.086, .062]
15. Japan	.013	[-.009, .041]	.003	[-.002, .018]	.061***	[.032, .101]	-.003	[-.019, .002]
16. Latvia	.027	[-.002, .083]	.017	[-.003, .068]	.069**	[.017, .146]	.019	[-.002, .072]
17. Malaysia	.091**	[.029, .184]	.032	[-.011, .104]	.084**	[.022, .179]	.016	[-.006, .075]
18. Netherlands	.080***	[.035, .141]	.066***	[.026, .125]	.107***	[.054, .180]	-.015	[-.059, .022]
19. Pakistan	.108***	[.050, .194]	.004	[-.057, .066]	.016	[-.037, .078]	.000	[-.022, .013]
20. Poland	.034*	[.001, .087]	.004	[-.011, .037]	.034	[.000, .090]	.001	[-.007, .023]
21. Portugal	.059**	[.016, .131]	.065**	[.019, .134]	.045**	[.010, .111]	-.013	[-.064, .021]
22. Singapore	.033*	[.003, .085]	.030*	[.003, .076]	.065***	[.023, .125]	.006	[-.026, .045]
23. South Africa	.010*	[.000, .030]	.016*	[.003, .039]	.017*	[.001, .041]	.003	[-.011, .020]
24. Spain	.090***	[.045, .150]	.059*	[.015, .113]	.029*	[.002, .072]	.026*	[.005, .065]
25. Switzerland	.055***	[.029, .092]	.107***	[.069, .154]	.082***	[.046, .126]	.131***	[.088, .184]
26. UK	.074*	[.006, .198]	.087*	[.008, .212]	.122**	[.035, .252]	.060	[-.018, .180]
27. US	.092***	[.047, .148]	.071***	[.036, .118]	.113***	[.061, .174]	.018	[-.020, .060]

Note. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

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**Table 7.** Comparison of alternative mediation models

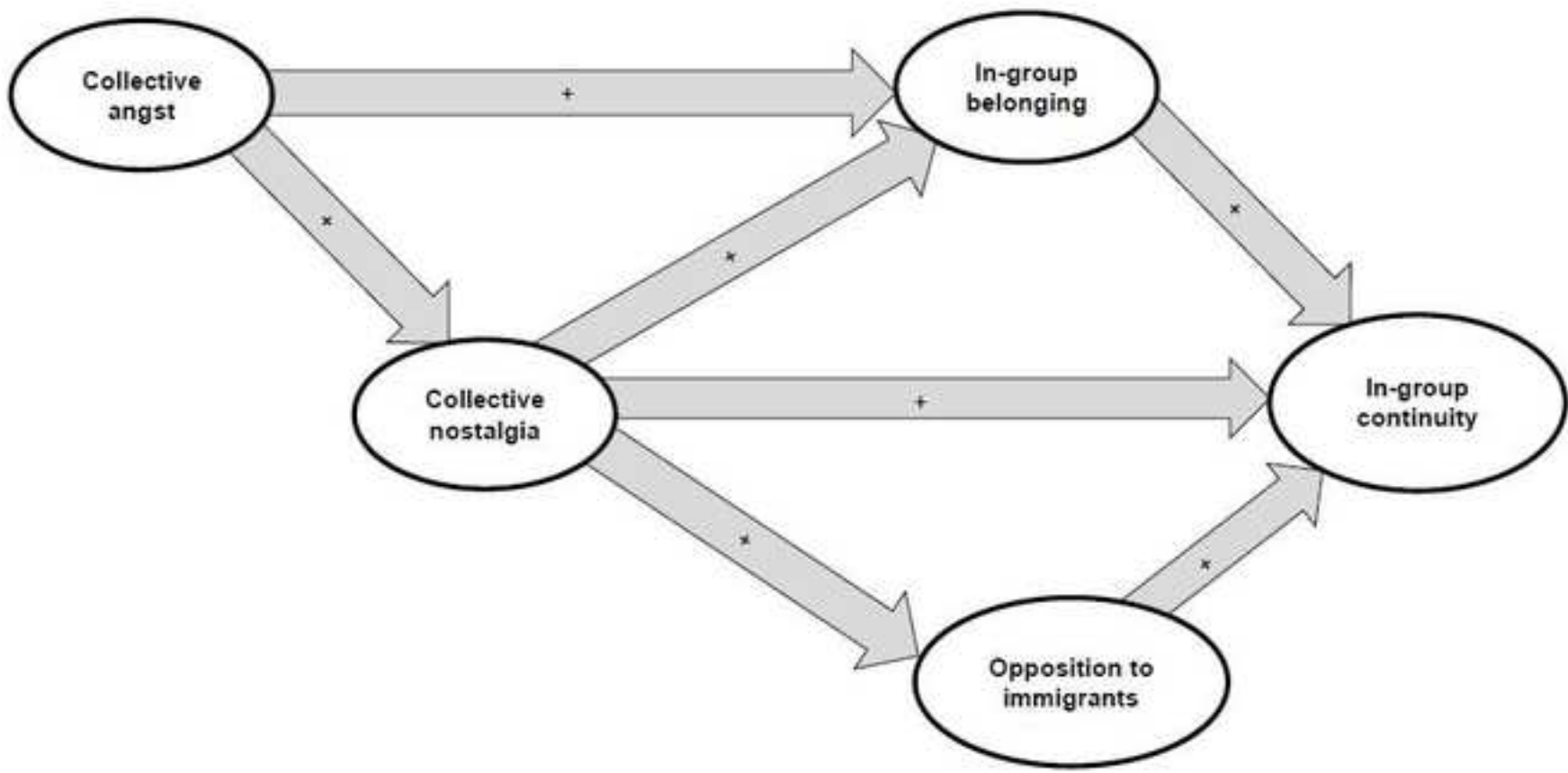
	<i>Chi-square</i>	<i>df</i>	<i>RMSEA</i>	<i>SRMR</i>	<i>CFI</i>	<i>AIC</i>	<i>ECVI</i>
Original model	3295.23	221	.048	.054	.957	3405.23	.572
Alternative model 1	4421.57	221	.056	.099	.941	4531.57	.767
Alternative model 2	3787.57	220	.052	.076	.950	3899.57	.655

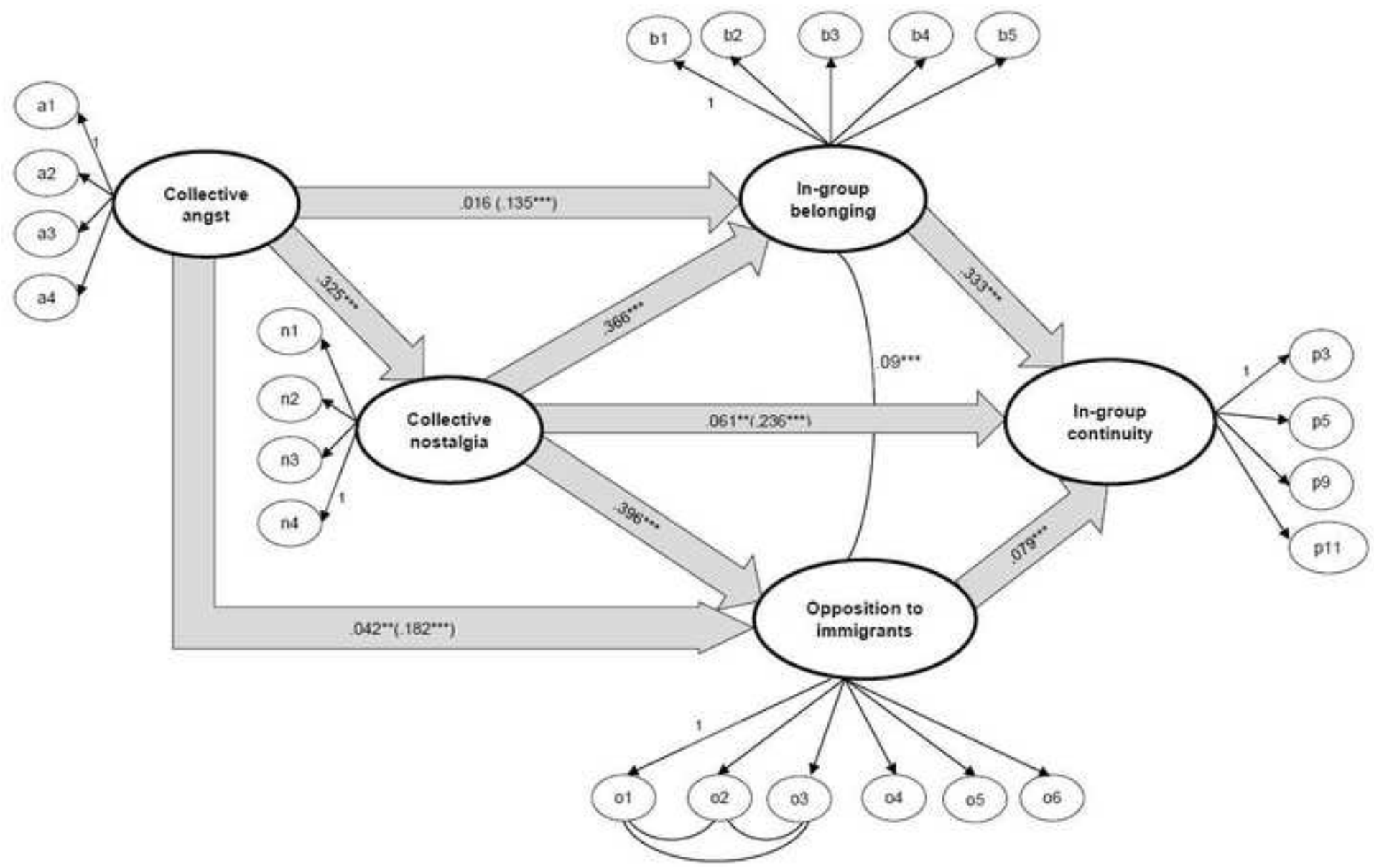
*Note.* RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual, CFI = Comparative Fit Index, AIC = Akaike Information Criterion; ECVI = Expected Cross Validation Index. Smaller AIC and ECVI values indicate better model fit.

## Figure captions

1  
2  
3 *Figure 1.* Conceptual model: Overview of the hypothesized relationships between collective  
4 angst, collective nostalgia, in-group belonging, opposition to immigrants and in-group  
5 continuity.  
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11  
12 *Figure 2.* Results of the path analysis for the total sample based on latent variables for all  
13 constructs. Path-coefficients are standardized estimates, and the path coefficients in parentheses  
14 reflect the total effect. Correlations between latent variables are standardized. To simplify, error  
15 terms of items and latent variables are not shown. \*\*\* $p < .001$ , \*\* $p < .01$   
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**Supplementary Material (ESM)**  
Collective nostalgia 27 countries.sav

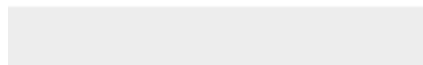




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**Supplementary Material (ESM)**

Syntax SPSS Smeeke et al. (2018).sps



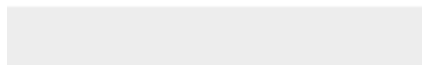




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**Supplementary Material (ESM)**

Collective nostalgia 27 countries (for AMOS nonmis).sav





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**Supplementary Material (ESM)**  
SEM Model Figure 2.amw





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Multiple group analysis.amw

