Collective Narcissism as a Basis for Nationalism¹

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Abstract

Recent work suggests that collective narcissism—an exaggerated, unrealistic belief in an in-group's greatness that demands constant external validation—is a strong predictor of a variety of political attitudes. In the present study, we use nationally-representative panel data from Poland to examine the relationship between national collective narcissism and nationalism, a belief that the national ingroup is superior and should dominate other nations. We first demonstrate that national collective narcissism, nationalism and mere satisfaction with national ingroup are distinct. In turn, in both cross-sectional and panel analyses, we find (1) that national collective narcissism is positively related to nationalism, whereas satisfaction with the national-ingroup is not; and (2) that national collective narcissism is a stronger predictor of nationalism than national-ingroup satisfaction is in absolute terms. Our analyses thus provide evidence that nationalism may be rooted in narcissistic exaggeration of the greatness of the national in-group rather than non-narcissistic national ingroup satisfaction.

Keywords: nationalism, collective narcissism, national ingroup satisfaction, national identity

Collective Narcissism as a Basis for Nationalism

A healthy patriotic spirit may be as important to the well-being of a nation as high self-esteem is to the well-being of an individual.

(Kosterman & Feshbach, 1989, p. 273)

The last decade has seen an enormous resurgence of ‘authoritarian populist’ movements and parties that claim to speak for ‘the people’ versus an unaccountable ‘elite,’ and whose leaders promise to take decisive and often-illiberal actions to defeat forces that are perceived to stand against ‘the people’ (Mudde & Kaltwasser, 2017; Müller, 2017; Norris & Inglehart, 2019).

Thematically, authoritarian populist movements and leaders often appeal to *nationalism*, a belief that the national ingroup is superior and should dominate other nations (Kosterman & Feshbach, 1989; Sidanius et al., 1997). Consistent with this, authoritarian populists tend to be hostile to other nations and toward minorities within their own nations (McDonnell & Werner, 2019; Mudde, 2019; Mudde & Kaltwasser, 2017; see also Blank & Schmidt, 2003). Given its significance to the political zeitgeist, it is worth asking what makes individuals sympathetic to nationalism. Is it love of country that motivates nationalism, or is it a narcissistic need for recognition—that is, a desire to have the national ingroup acknowledged as extraordinary?

Along these lines, we explore the proposition that nationalism is positively related to national *collective narcissism*, a belief that the nation’s exaggerated greatness is not sufficiently recognized by others (Golec de Zavala, 2018; Golec de Zavala, Dyduch-Hazar, & Lantos, 2019), but negatively related to national *ingroup satisfaction*, a belief that one’s nation and membership in it are worth being proud of (Leach et al., 2008; Golec de Zavala et al., 2019). This argument is derived from evidence indicating that national collective narcissism but not national ingroup satisfaction is an important antecedent of support for authoritarian populist parties, politicians and policies in many countries

(see Golec de Zavala & Keenan, 2020; Golec de Zavala, Lantos & Keenan, 2021) as well as a robust predictor of international belligerence (Golec de Zavala et al., 2009) and hostility towards national minorities (Golec de Zavala, Federico et al., 2020).

Focusing on the case of Polish nationalism, we examine and provide evidence for three hypotheses: (1) that nationalism can be empirically distinguished from both national collective narcissism and satisfaction with the national ingroup; (2) that national collective narcissism is positively related to nationalism, whereas national ingroup satisfaction is negatively related to nationalism net of national collective narcissism; and (3) that national collective narcissism is more strongly related in absolute terms to nationalism than satisfaction with the national ingroup is. We examine the second and third hypotheses both cross-sectionally and longitudinally.

The Psychology of Nationalism

Beliefs and attitudes regarding national identity are multidimensional, and not all of them are equally endorsed by individuals with different political allegiances and worldviews (Feshbach, 1994; Golec de Zavala et al., 2019; Huddy & del Ponte, 2019; Parker, 2009). In general, positive beliefs about one's nation—regardless of their form—rest on and imply national identification, i.e., self-categorization as a member of the national ingroup and a sense that membership in this group is important to the self-concept (Blank & Schmidt, 2003). But positive beliefs are not the same as identification (e.g., Huddy & Khatib, 2007; Roccas, Klar, & Liviatan, 2006; Roccas et al., 2008).

Actual positivity towards one's nation is most simply conceptualized as a belief that one's nation and membership in it are worth being proud of. This form of positivity towards one's nation is referred to as patriotism (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; de Figueiredo & Elkins, 2003; Huddy & del Ponte, 2019; Kosterman & Feshbach, 1989; Viroli, 1995), or as we will call it in this study, *national ingroup satisfaction* (Golec de Zavala, Federico et al., 2020; Golec de Zavala & Lantos, 2020; Leach et al., 2008). Sometimes, different forms of this sentiment have been

distinguished from one another, including a ‘constructive patriotism’ that combines positivity to the national ingroup with a willingness to accept that the group can be improved and developed when needed and a ‘blind patriotism’ that focuses on the protection of the idealized national ingroup’s image (e.g., Adorno et al., 1950; Huddy & Khatib, 2007; Schatz, Staub, & Lavine, 1999; see also Parker, 2009). Similarly, positive ingroup ‘attachment’ has been distinguished from ingroup ‘glorification,’ i.e., a belief that the nation compares favorably to all other nations paired with uncritical reverence towards national authorities and symbols (Roccas, Klar, & Liviatan, 2006; Roccas et al., 2006, 2008; Kende, Hadarics, & Szabó, 2019). This literature suggests that satisfaction with the national ingroup can be distinguished from uncritical reverence towards it.

Importantly, national ingroup satisfaction differs from *nationalism* (Federico, Golec, & Dial, 2005), a chauvinistic belief involving “an orientation toward national dominance” (Kosterman & Feshbach, 1989, p. 271; Sidanius et al., 1997).² Both assume a positive attitude towards the nation, but nationalism is also characterized by a competitive belief in the national ingroup’s superiority and a desire for international dominance (cf. Cichocka & Cislak, 2020).³ Thus, nationalism has been conceptualized as a belief that incorporates both (national) ingroup love and outgroup hate (Brewer, 1999). Indeed, despite the fact that nationalism and patriotism are positively related, it is nationalism that is associated with hostility toward other nations, hostility toward minorities within one’s nation, and group-based anti-egalitarianism more than patriotism or national ingroup satisfaction usually is (Blank & Schmidt, 2003; de Figueiredo & Elkins, 2003; Federico et al., 2005; Golec de Zavala,

² In this study, we use the term ‘nationalism’ to refer to an individual’s endorsement of nationalistic beliefs, not the ideology of nationalism itself (Viroli, 1995)

³ The related construct of glorification also incorporates an element of perceived national superiority, but without the same level of dominance concerns as nationalism (Roccas et al., 2008).

Federico et al., 2020; Huddy & del Ponte, 2019; Kosterman & Feshbach, 1989; Mummendey, Klink, & Brown, 2001; Pehrson, Brown, & Zagefka, 2009; Sidanius, Feshbach, Levin, & Pratto, 1997).⁴

Collective Narcissism, Ingroup Satisfaction, and Nationalism

Our key argument is that nationalism flows not from simple national ingroup satisfaction (or love of nation) but from a different form of positivity toward the nation than national ingroup satisfaction: *national collective narcissism*, an exaggerated belief in the nation's greatness that is dependent on external validation (Golec de Zavala et al., 2019). We argue that rather than involving national ingroup love and outgroup hate, nationalism involves national collective narcissism and outgroup hate, and it is incompatible with and opposed to non-narcissistic love of the nation. Specifically, we expect (1) that nationalism as a belief will be distinct from but related to national collective narcissism and national ingroup satisfaction; and (2) that nationalism will be positively predicted by national collective narcissism, but negatively related to national ingroup satisfaction.

We argue that national ingroup satisfaction and national collective narcissism are qualitatively different forms of positivity toward the nation (Golec de Zavala et al., 2019; 2020; Golec de Zavala & Lantos 2020), whereas nationalism pertains to a belief that the nation should dominate over other nations (Sidanius et al., 1997). Though all three assume some level of national ingroup identification (i.e., seeing the national ingroup as important to one's identity; Ellemers, Spears, & Doosje, 2002), they are not the same thing as the latter. Rather, they are different beliefs about one's national identity, its worth, entitlement, and its place and role in the world (Golec de Zavala et al., 2019). In particular, crucial to *collective narcissism* is the belief that the ingroup's exaggerated greatness is not sufficiently recognized by others (Golec de Zavala, Cichocka, Eidelson, & Jayawickreme, 2009; see

⁴ This pattern of correlation between ingroup satisfaction, nationalism, and other outcomes is most characteristic of dominant racial and ethnic groups. Among members of subordinate groups, patriotism is sometimes associated with reduced hostility toward foreigners, though nationalism is more consistently associated with hostility to foreigners across groups (e.g., Carter & Perez, 2015).

also Golec de Zavala et al., 2019; Golec de Zavala & Lantos, 2020). Collective narcissists exaggerate the virtues of the ingroup and its deservingness. However, their perception that the ingroup is “great” is in constant need of validation and defense from external threats (Golec de Zavala, 2011, 2018). In this respect, collective narcissism extends to the group level the concept of individual-level narcissism, i.e., exaggerated positive self-regard that needs to be propped up with plaudits and admiration from others (Morf & Rodhevald, 2001; see Golec de Zavala, 2018, Golec de Zavala et al., 2019, on the relationship between individual and collective narcissism). Just as narcissism is qualitatively different from and has a different etiology than self-esteem (Brummelman, Thomaes, & Sedikides, 2016), collective narcissism is a distinct and separate phenomenon from ingroup satisfaction (Golec de Zavala et al., 2019; 2020; Golec de Zavala & Lantos, 2020). They are, as Golec de Zavala and colleagues (2020) argue ‘alternative beliefs that people may hold about the social identities they share’ (p. 742)

Individuals who endorse collective narcissism are sensitive to threats to the perceived greatness of the ingroup (Bagci et al., 2021; Guerra et al., 2020). When the ingroup does not receive the admiration it is believed to deserve, collective narcissists react with hostility, retaliatory aggression, and joy at the misfortunes of outgroups in both observational and experimental studies (Golec de Zavala et al., 2009; Golec de Zavala, Cichocka, & Iskra-Golec, 2013b; Golec de Zavala, Pekker, Guerra, & Baran, 2016; Hase et al., 2021). For example, Polish respondents who were high in national collective narcissism were more likely to perceive a film focused on Polish anti-Semitism as a national insult to Poland and to seek punishment for the filmmakers (Golec de Zavala et al., 2016). Given this sensitivity, collective narcissists tend to see the world as full of malevolent actors who conspire to undermine the ingroup (Cichocka, Marchlewska, Golec de Zavala, & Olechowski, 2016; Golec de Zavala, 2020; Golec de Zavala & Cichocka, 2012), and they are prone to intergroup animosity and aggression (Golec de Zavala et al., 2009, 2020; Jasko et al., 2020; Hase et al., 2021).

Although collective narcissism is positively associated with national ingroup satisfaction, they are functionally distinct as each has different correlates when controlling for the other (Golec de Zavala et al., 2020; Golec de Zavala & Lantos, 2020). Once the variance ingroup satisfaction shares with collective narcissism is accounted for, ingroup satisfaction is either unrelated or negatively related to hostility toward various outgroups (Golec de Zavala, 2011; Golec de Zavala et al., 2016, 2020; 2022 for a review, see Golec de Zavala et al., 2019, for an exception, see Golec de Zavala & Bierwiazek, 2021). Thus, when ingroup satisfaction is purged of collective narcissism, it predicts a neutral or even positive attitude toward outgroups (Golec de Zavala et al., 2019). Ingroup satisfaction without collective narcissism can be interpreted as a belief in the ingroup's high value without exaggeration, idealization or claims to special recognition. Collective narcissism without ingroup satisfaction can be interpreted as a sense of group-based entitlement, demand for privileged treatment and exaggerated concern about the ingroup's external recognition (Golec de Zavala, 2011, 2018; Golec de Zavala et al., 2019, 2020)⁵.

Collective narcissism and ingroup satisfaction apply to and can be assessed with respect to a variety of social identities, including ethnic groups, religious categories, and universities (Golec de Zavala et al., 2009; 2013). However, the bulk of research on collective narcissism and ingroup satisfaction has focused on national ingroups (Golec de Zavala et al., 2019), allowing us to study those phenomena to advance our understanding of the form of positivity toward the national ingroup that is more likely to elicit nationalism. Since nationalism, national collective narcissism, and national ingroup satisfaction all pertain to the national ingroup, we expect measures of the three constructs to overlap with one another to some extent. Nevertheless, we argue that they are not conceptually identical, and we expect the three to be empirically distinguishable from one another.

⁵ Note that ingroup satisfaction and collective narcissism would be difficult to interpret in their residual forms if ingroup identification was also partialled out of them (Golec de Zavala et al., 2019).

As noted above, collective narcissism and ingroup satisfaction are related but have been found to be empirically distinct in previous work (Golec de Zavala et al., 2019, 2020). But what about their unique relationships with nationalism? Conceptually nationalism and national collective narcissism have more in common than nationalism and national ingroup satisfaction. While both national collective narcissism and nationalism involve an element of intergroup antagonism, nationalism involves an intrinsic desire for ingroup dominance, whereas national collective narcissism is specifically compensatory and subjectively defensive in motivation. Collective narcissism elicits resentful aggression driven by a perceived lack of recognition (Golec de Zavala et al., 2016; Golec de Zavala et al., 2019) and perceived hostility from others (Golec de Zavala et al., 2009; Guerra et al., 2020).

Nationalism may be driven by compensatory motives of this sort, but it is not exclusively driven by them; it may also reflect a more agentic enthusiasm for national dominance (Golec de Zavala et al., 2019; Golec de Zavala & Lantos, 2020; cf Cichocka & Cislak, 2020). Though some individuals may be directly attracted to nationalism for the latter reason, we argue that others may find nationalism attractive because of narcissistic concern about others' perceived failure to acknowledge the (exaggerated) greatness of the national ingroup (Golec de Zavala, Lantos & Keenan, 2020). To put it another way, nationalism tends to be about what your country should be able to do to other countries, whereas collective narcissism is about what other countries owe your country in terms of respect. The former may sometimes be a function of the latter, but not exclusively. Whether national ingroup satisfaction can elicit nationalism is more debatable. Ostensibly they both involve an element of positive evaluation of the national ingroup, suggesting a zero-order relationship between the two. However, nationalism involves hostility and perceived superiority that is not intrinsic to ingroup satisfaction especially when the latter is purged of collective narcissism (Golec de Zavala, 2011; Golec de Zavala & Lantos, 2020).

Though national collective narcissism and ingroup satisfaction are both likely to have positive zero-order relationships with nationalism due to their common reference point in the national ingroup, we expect that they will be related to nationalism in opposed ways in multivariate analyses that account for their overlap. Given that “collective narcissism is positively associated with variables pertaining to idealization and perceived superiority of the national ingroup” (Golec de Zavala et al., 2019, p. 42), national collective narcissism should predict nationalism (cf. Cichocka & Cislak, 2020). Collective narcissistic deservingness is likely to lead to nationalistic superiority and desire for international dominance (de Figueredo & Elkins, 2003; Golec de Zavala et al., 2016; Hase et al., 2021; Jasko et al., 2020; Sidanius et al., 1997). Indeed, national collective narcissism predicts support for authoritarian-populist parties and political figures with a strong nationalist orientation (Federico & Golec de Zavala, 2018; Forgas & Lantos, 2019; Golec de Zavala, Guerra & Simao, 2017; Keenan & Golec de Zavala, 2021; Marchlewska et al., 2018; see also Golec de Zavala et al., 2016; Lyons et al., 2010).

However, previous analyses have not accounted for the role of national collective narcissism when examining the link between ingroup satisfaction (or patriotism) and nationalism. Unlike previous analyses suggesting a positive overlap between national ingroup satisfaction and nationalism (e.g., Brewer, 1999), we predict that the relationship between those two variables may actually be negative after national collective narcissism is partialled out. Put differently, non-narcissistic satisfaction with the nation should work against nationalism. Account for national collective narcissism should allow us to isolate a non-narcissistic positivity towards the nation that impedes nationalism. As noted previously, ingroup satisfaction overlaps somewhat with collective narcissism but has much different net relationships with variables related to intergroup hostility: Once collective narcissism is accounted for, ingroup satisfaction is associated with a less-hostile orientation to outgroups (e.g., Golec de Zavala et al., 2019; 2020). Thus, while we expect that

national collective narcissism will predict greater nationalism even once national ingroup satisfaction is accounted for, we expect that national ingroup satisfaction will predict reduced nationalism once its overlap with national collective narcissism is partialled out.

A second issue that remains unexplored is the relative *magnitude* (apart from the direction) of the relationships between (1) national collective narcissism and nationalism and (2) national ingroup satisfaction and nationalism. One implication of our argument that nationalism especially reflects national entitlement is the above prediction: national collective narcissism, but not national ingroup satisfaction, should be positively related to nationalism. But if our argument is correct, a second implication is that the absolute strength of the relationship between national collective narcissism and nationalism should exceed that of the relationship between national ingroup satisfaction and nationalism. Given that they both reflect perceptions of assumed national superiority, collective narcissism and nationalism should have more in common with one another than ingroup satisfaction and nationalism do—especially once collective narcissism and ingroup satisfaction are purged of the variance they share with one another. Net of mere satisfaction with the national ingroup, national collective narcissism should still predict considerable variation in nationalism. However, net of the deservingness and entitlement represented by collective narcissism, national ingroup satisfaction should not strongly imply motivations for intergroup hostility or dominance and thus should tell us relatively little about whether an individual is high or low in nationalism. In other words, if we want to know whether an individual is relatively high in nationalism, it is more important to know whether they are relatively high in national collective narcissism than to know that they are relatively low in non-narcissistic ingroup satisfaction. Thus, we expect the net relationship between national collective narcissism and nationalism to be stronger in absolute size than the net relationship between national ingroup satisfaction and nationalism.

Overview

In the present study, we examine the relationships between national collective narcissism, national ingroup satisfaction and nationalism using a panel study of Polish adults. Poland provides an excellent context for our study as a nation that has experienced rapid democratic backsliding amid a rise in populist nationalism (Alizada et al., 2021). Since 2015, the nation has been governed by the Law and Justice Party (*Pravo i Sprawiedliwość*, PiS), a far-right party with an authoritarian-populist orientation that has made nationalism (Markowski, 2016; Jaskiernia, 2019) and national collective narcissism (Golec de Zavala & Keenan, 2021) central to its electoral appeals and its style of governance. Extant research suggests that national collective narcissism is associated with support for Law and Justice in Poland (Marchlewska et al., 2018) and for nationalist parties and leaders elsewhere (Federico & Golec de Zavala, 2018; Forgas & Lantos, 2019; Keenan & Golec de Zavala, 2021). That said, while this work connects national collective narcissism with support for parties openly preaching national superiority, it has not directly examined its relationship with nationalism. To directly examine the relationship between collective narcissism and nationalism, we examine three hypotheses in our data:

Hypothesis 1: Nationalism, national collective narcissism, and national ingroup satisfaction will be empirically distinguishable as distinct latent constructs. More concretely, a three-factor structure will best fit the items measuring the three variables.

Hypothesis 2: National collective narcissism will be positively related to nationalism net of national ingroup satisfaction, whereas ingroup satisfaction will be negatively associated with nationalism net of national collective narcissism.

Hypothesis 3: In absolute terms, the magnitude of the net relationship between national collective narcissism and nationalism will be stronger than the magnitude of the net relationship between national ingroup satisfaction and nationalism.

Given the panel structure of our data, we examine Hypotheses 2 and 3 cross-sectionally within waves and longitudinally across waves. In the latter analysis, we look at whether Hypotheses 2 and 3 hold with respect to how between-person differences in national collective narcissism and ingroup satisfaction predict prospective changes in between-person differences in nationalism (Orth et al., 2021). This analysis provides a clearer look at the temporal ordering of changes in collective narcissism and ingroup satisfaction (on one hand) and nationalism (on the other).

Method

Data

The data for our analyses come from a two-wave panel study of Polish adults conducted online by the Ariadna Research Panel (<http://www.panelariadna.com>). Respondents were quota-sampled from the Ariadna online panel to be representative of the population of Polish adults aged 18 or older on gender, age, and size of place of residence. All surveys were conducted in Polish using a computer-assisted web interviewing (CAWI) method. The Time 1 wave interviewed a sample of 1,065 Polish adults (554 women, 511 men) ranging in age from 18 to 76 years ($M=43.74$, $SD=15.33$) between 15 and 18 April 2017. This sample size was set in advance by Ariadna and is standard for its monthly surveys.⁶ Eight weeks later, 853 respondents from Time 1 were re-interviewed between 5 and 12 June 2017 for the Time 2 wave (427 men, 426 women), resulting in an 80% recontact rate. Time 2 respondents ranged between 18 and 76 years in age ($M=44.49$, $SD=15.19$).⁷ The only excluded observations were those for which responses were missing.

⁶ Information on the power afforded by these sample sizes is given in the supplemental materials.

⁷ The data used in the present study have been used in previous research examining different hypotheses (Golec de Zavala et al., 2020, Study 2). The hypotheses and analyses in that study were different from those examined here and did not pertain to nationalism. The hypotheses and analyses in the present study were not pre-registered. We report all manipulations, measures, and exclusions in these studies. Other variables included in the data are detailed in the supplementary materials. All data and code for the analyses can be found at: <https://osf.io/m3yvk/>.

Measures

Unless otherwise indicated, all items and scales were recoded to run from 0 to 1 for ease of interpretation. English translations of items are provided below. Additional details and correlations among the key study variables can be found in the supplemental materials.

Collective narcissism was measured using a five-item version of the Collective Narcissism Scale (Golec de Zavala et al., 2009). The items were: “If Poland had a major say in the world, the world would be a much better place,” “Poland deserves special treatment,” “It really makes me angry when others criticize Poland,” “Not many people seem to fully understand the importance of Poland,” and “I will never be satisfied until Poland gets the recognition it deserves.” Responses were provided using a six-point scale (1 = *totally disagree*, 6 = *totally agree*). Scores were averaged to form a collective narcissism scale. Higher scores indicate greater collective narcissism (Time 1: $\alpha=0.91$, $M=3.68$, $SD=1.22$; Time 2: $\alpha=0.93$, $M=3.44$, $SD=1.24$; Time 1, 0-1 coding: $M=0.54$, $SD=0.24$; Time 2, 0-1 coding: $M=0.49$, $SD=0.25$).⁸

In-group satisfaction was measured using four items (Leach et al., 2008). The items included: “I am glad to be Polish,” “I think that Poles have a lot to be proud of,” “It is pleasant to be Polish,” and “Being Polish gives me a good feeling.” Responses were made on a six-point scale (1 = *totally disagree*, 6 = *totally agree*). Item responses were averaged to form a scale; higher scores indicate greater ingroup satisfaction (Time 1: $\alpha=0.96$, $M=4.54$, $SD=1.19$; Time 2: $\alpha=0.96$, $M=4.43$, $SD=1.19$; Time 1, 0-1 coding: $M=0.71$, $SD=0.24$; Time 2, 0-1 coding: $M=0.69$, $SD=0.24$).

Nationalism was measured using five items adopted from previous research (Sidanius et al., 1997) and used in previous research in Poland (Golec de Zavala et al., 2016). The items were: “My

⁸ Given that the first national collective narcissism item has conceptual and wording overlap with many of the nationalism items, we replicated all of our analyses using a reduced version of the CN scale that excluded this item. Results were similar and are detailed in the supplemental materials.

country is not better than any other country in the world” (reversed), “My country should not dominate other countries” (reversed), “The more my country influences other countries the better they are,” “In order to maintain the dominant position of my country aggressive economic actions against other countries are sometimes necessary,” and “In order to maintain my country’s power it is sometimes necessary to engage in war with other countries.” These items used a seven-point response scale (1 = *totally disagree*, 7 = *totally agree*). All items were recoded so that higher scores indicate greater nationalism, and responses were averaged to form a scale in each wave (Time 1: $\alpha=0.61$, $M=3.56$, $SD=1.00$; Time 2: $\alpha=0.67$, $M=3.49$, $SD=1.02$; Time 1, 0-1 coding: $M=0.43$, $SD=0.17$; Time 2, 0-1 coding: $M=0.42$, $SD=0.17$).

Finally, three *demographic covariates* were considered: a dummy variable indicating *male* gender (1=yes, 0=no), *education* (six ordered categories, recoded to run from 0 to 1), and *age* (in years, recoded to run from 0 to 1). These measures were included as standard demographic controls and have been used in other studies of the antecedents of nationalism (e.g., Federico et al., 2005).

Results

Differentiating Collective Narcissism, Ingroup Satisfaction, and Nationalism

Hypothesis 1 predicts that nationalism, national collective narcissism (CN), and national ingroup satisfaction (IS) will be empirically distinguishable as distinct latent constructs and that a three-factor structure will best fit the items measuring the three variables. To examine this, we estimated a three-factor confirmatory factor analysis model in which the CN, IS, and nationalism items were specified as indicators of three separate latent factors; the three factors were allowed to correlate. This model was estimated separately for the Time 1 and the Time 2 measures. The models were estimated in Stata 15 with the `sem` command using the maximum likelihood with missing values (MLMV) estimator (StataCorp, 2017).

The fit statistics for the three-factor measurement models are shown in Table 1. These models fit well in both time periods. Though our sample size meant that the chi-squares were relatively large and significant, the models showed acceptable fit according to CFI (0.95 for Time 1; 0.96 for Time 2), TLI (0.94 for Time 1; 0.95 for Time 2), and RMSEA (0.08 for both time periods). Examination of the inter-factor correlations suggested that all three constructs were correlated with one another. At both Time 1 and Time 2, CN and IS were correlated ($\varphi=0.56$ at Time 1; $\varphi=0.51$ at Time 2; both $ps<0.001$). Moreover, nationalism had positive correlations with both CN and IS at both Time 1 (with CN, $\varphi=0.71$, $p<0.001$; with IS, $\varphi=0.34$, $p<0.001$) and Time 2 (with CN, $\varphi=0.83$, $p<0.001$; with IS, $\varphi=0.36$, $p<0.001$).⁹ With respect to the latter estimates, it is important to remember that these are zero-order correlations; they do not account for the variance shared by CN and IS. As the analyses below indicate, the relationships between CN and IS (on one hand) and nationalism (on the other) take on opposite signs once their overlap is statistically accounted for.

For comparison, we estimated two alternative measurement models: (1) a one-factor model that allowed items from all three scales to load on a single factor, corresponding to a scenario in which all items reflect a single national-positivity dimension; and (2) a two-factor model that allowed the CN and nationalism items to load on a first factor and the ingroup-satisfaction items to load on a second factor, corresponding to a scenario in which the CN and nationalism items represent an ‘aggressive positivity’ dimension and the IS items represent a separate ‘benign positivity’ dimension.

Fit statistics for these models are also summarized in Table 1. In both time periods, the one-factor model fit poorly. The two-factor model fit better, though not quite as well as the three-factor

⁹ High inter-factor correlations are not unusual in the literature on national attachment and multidimensional models of ingroup identification (e.g., Huddy & Khatib, 2007, who find factor correlations of up to 0.74 among forms of national identity and attachment; and Roccas et al., 2008, who find correlations from 0.55 to 0.79 among national identity importance, commitment, superiority, and deference). This is not surprising, given that various constructs related to national attachment are conceptually close even when being distinct.

model. Indeed, model-comparison analyses suggested that the three-factor model fit better than both alternatives in both time periods. At Time 1, the three-factor model provided a significant improvement in fit over both the one-factor model, $\Delta\chi^2(3)=3073.38, p<0.001$, and the two-factor model, $\Delta\chi^2(2)=237.29, p<0.001$. Similarly, at Time 2, the three-factor model provided a significantly better fit compared to both the one-factor model, $\Delta\chi^2(3)=3301.36, p<0.001$, and the two-factor model, $\Delta\chi^2(2)=152.66, p<0.001$. Given that chi-square difference tests can be inflated by large sample sizes, Bayesian model comparison was also performed by examining change in the Bayesian Information Criterion (BIC; lower BICs indicate better fit) and Bayes Factors (BF) for each model comparison (Raftery, 1995). At Time 1, the three-factor model fit better than the one-factor model, $\Delta\text{BIC}=3,502.67$, $\text{BF}=7.6\times 10^{662}$; and the two-factor model, $\Delta\text{BIC}=223.35$, $\text{BF}=3.2\times 10^{48}$. At Time 2, the three-factor model fit better than the one-factor model, $\Delta\text{BIC}=3,281.11$, $\text{BF}=3.1\times 10^{712}$; and the two-factor model, $\Delta\text{BIC}=139.16$, $\text{BF}=1.7\times 10^{30}$. In all cases, these statistics indicate “very strong” evidence for the three-factor model versus the alternatives according to Raftery’s (1995) criteria (i.e., $\Delta\text{BIC}>10$ and $\text{BF}>150$).¹⁰ Thus, the data are consistent with Hypothesis 1: CN, IS, and nationalism items correspond to distinct but related latent constructs.

Cross-sectional Analyses of the Predictors of Nationalism

Having established the distinctiveness of CN, IS, and nationalism, we conducted initial cross-sectional tests of Hypotheses 2 and 3 in each time period. To this end, we estimated two ordinary least-squares regression models. The first regressed Time 1 nationalism on Time 1 CN and IS, and the second regressed Time 2 nationalism on Time 2 CN and IS. Each model also included a

¹⁰ Approximate Bayes Factors were obtained by dividing ΔBIC by 2 and exponentiating the result (Raftery, 1995).

dummy variable indicating male gender, education, and age as covariates.¹¹ To guard against the effects of heteroskedasticity, HC3 robust standard errors were used (Long & Ervin, 2000).

The regression results are summarized in Table 2, and the relationships between CN and IS and nationalism in each time period are plotted in Figure 1.¹² Consistent with H2, collective narcissism was *positively* associated with nationalism at Time 1 ($b=0.41$, $\beta=0.59$, $p<0.001$) and at Time 2 ($b=0.46$, $\beta=0.67$, $p<0.001$), net of IS. Given the 0-1 coding of all variables, these estimates indicate that going from the lowest to the highest value of collective narcissism at Time 1 and at Time 2 is associated with 41% and 46% increases in nationalism, respectively (Baguley, 2009). Also consistent with H2, ingroup satisfaction was *negatively* related to nationalism at Time 1 and Time 2, net of CN, and its relationships with nationalism were weaker in absolute magnitude (Time 1: $b=-0.08$, $\beta=-0.11$, $p=0.002$; Time 2: $b=-0.04$, $\beta=-0.06$, $p=0.074$). Thus, once overlap between CN and IS is accounted for, only CN remains positively related to nationalism. The relationship between IS and nationalism becomes negative once variance in IS associated with CN is removed, suggesting that CN ‘suppresses’ an *inverse* relationship between satisfaction with one’s national identity and nationalism.

In turn, H3 predicts that in absolute terms, the magnitude of the net relationship between national collective narcissism and nationalism would be stronger than the magnitude of the net relationship between national ingroup satisfaction and nationalism. The difference in absolute magnitude between the CN and IS coefficients is clear in the estimates reported above (i.e., $\beta=0.59$

¹¹ All covariates were assessed at Time 1.

¹² Though CN and IS are correlated in both waves ($r=0.52$ at Time 1, $r=0.49$ at Time 2, $ps<0.001$), an examination of the variance inflation factors (VIFs) for the models at each time suggested that multicollinearity was not a problem. At Time 1, the VIFs for NC and IS were 1.43 and 1.46, respectively; at Time 2, the corresponding VIFs were 1.36 for both predictors. These statistics fall well below the recommended cutoff value of 4 used to diagnose multicollinearity (Fox, 2016).

versus $\beta = -0.11$ at Time 1; $\beta = 0.67$ versus $\beta = -0.06$ at Time 2).¹³ To formally test this prediction, the absolute values of the coefficients for CN and IS were constrained to equal one another in the Time 1 and Time 2 models.¹⁴ This constraint produced a significant decrement in fit at Time 1, $F(1, 1059) = 179.50, p < 0.001$; and at Time 2, $F(1, 847) = 277.48, p < 0.001$. Thus, H3 is also supported in our cross-sectional analyses.

Dynamic Relationships between Collective Narcissism, Ingroup Satisfaction, and Nationalism: Cross-lagged Panel Analysis

Though our cross-sectional analyses are instructive, the panel nature of our data can be leveraged to obtain greater purchase on the temporal ordering of between-person changes in collective narcissism and ingroup satisfaction (on one hand) and nationalism (on the other). To this end, we estimated a latent-variable cross-lagged panel model (CLPM) using the Time 1 and Time 2 measures of CN, IS, and nationalism (Cole & Maxwell, 2003; Finkel, 1995), which is the most bias-free longitudinal estimation technique that can be used with a two-wave design (Hamaker, Kuiper, & Grasman, 2015) and the model most appropriate for examining whether individual differences in one variable (or set of variables) predict changes in individual differences in some other variable (Orth et al., 2021). Specifically, the CLPM does this by controlling for the Time 1 value of an outcome variable when predicting that outcome at Time 2 from individual differences in the

¹³ Other effect-size measures tell a similar story. At time 1, the partial η^2 for CN was 0.27, whereas it was 0.01 for IS. At Time 2, the partial η^2 for CN was 0.38, but only 0.004 for IS. Moreover, a sensitivity analysis indicated that the comparatively strong statistical effects of CN in each wave were unlikely to be due to unobserved confounders (Cinelli & Hazlett, 2018). Unobserved confounders would need to account for 39.65% of the remaining variance in CN and nationalism at Time 1 and 50.65% of the remaining variance in CN and nationalism at Time 2 to reduce the respective estimates for CN to 0. Finally, in the supplemental materials, we also report results from a dominance analysis (Azen & Budescu, 2006) that reach similar conclusions.

¹⁴ This test was carried out using the `test` command in Stata 15 (StataCorp, 2017). Specifically, this command was used to test the change in the F-statistic produced by re-estimating the model with the coefficient for CN constrained to equal -1 times the coefficient for IS in each time period.

independent variable at Time 1. We used structural-equation modeling with latent variables to estimate this model in Stata 15 with the `sem` command using the maximum likelihood with missing values (MLMV) estimator (StataCorp, 2017). Latent variables were defined by using the individual items for each construct from a given time period as indicators for a latent variable corresponding to that construct at that time. The Time 2 latent variable for each construct was then regressed on all three latent variables at Time 1. In addition, the disturbance terms for the Time 2 latent variables were allowed to correlate with one another, as were the Time 1 latent variables for all three constructs. Finally, we allowed the error term for each observed indicator at Time 1 to correlate with the error term for its equivalent indicator at Time 2.¹⁵

Standardized parameter estimates for the structural portion of this model are shown in Figure 2; for visual clarity, the factor loadings and error-term correlations are not shown.¹⁶ The model provided a good fit to the data, $\chi^2(321)=1327.33, p<0.001$, CFI=0.95, TLI=0.94; RMSEA=0.05. Looking at the auto-regressive parameters from the structural model, national CN and IS were more strongly related over time (net of the other constructs) than nationalism was ($\beta=0.64$ for CN and $\beta=0.69$ for IS, versus $\beta=0.46$ for nationalism; all $ps<0.001$). Consistent with H2 (and with our cross-sectional findings), Time 1 CN was associated with greater Time 2 nationalism, net of Time 1 nationalism and IS ($\beta=0.37, p<0.001$); whereas Time 1 IS was marginally associated

¹⁵ To examine whether panel attrition was linked to our key variables, we compared Time 1 respondents who completed both waves with those who completed only the first wave on Time 1 collective narcissism, ingroup satisfaction, and nationalism. Respondents who completed the first wave only and those who completed both waves did not differ on ingroup satisfaction, $diff = 0.005$, $t(1063)=0.46, p=0.64, d=0.13$; or nationalism, $diff = 0.016$, $t(1063)=1.25, p=0.211, d=0.096$. However, individuals who completed both waves ($M=0.528, SD=0.008$) were slightly lower in collective narcissism at Time 1 than those who completed only the first wave ($M=0.575, SD=0.016$), $diff = 0.046$, $t(1063)=2.50, p=0.013, d=0.19$. Panel attrition effects therefore appear to be relatively minimal with regard to our three main constructs.

¹⁶ A more detailed summary of the model estimates can be found in Table S1 in the supplemental materials. All reported p -values are based on tests from the unstandardized models.

with reduced Time 2 nationalism, net of Time 1 nationalism and CN ($\beta=-0.08, p=0.053$). Thus, CN and IS appear to influence nationalism even once feedback effects from nationalism to CN and IS are statistically accounted for, and Time 1 CN and IS are associated with shifts in nationalism—in opposite directions—over time.

In turn, in dynamic terms, H3 predicts that the relationship between Time 1 CN and Time 2 nationalism should be stronger in absolute terms than the relationship between Time 1 IS and Time 2 nationalism. A difference of this sort is evident from the standardized estimates for these relationships reported above (i.e., $\beta=0.37$ versus $\beta=-0.08$). To formally test H3 in this context, we re-estimated the model with the absolute values of the paths (1) from T1 collective narcissism to T2 nationalism and (2) from T1 in-group satisfaction to T2 nationalism constrained to equality.¹⁷ This produced a significant decrement in model fit, $\Delta\chi^2(1)=18.85, p<0.001$, suggesting that the cross-lagged effect of T1 collective narcissism on T2 nationalism is stronger than the equivalent cross-lagged effect of in-group satisfaction (as predicted).¹⁸ Bayesian model comparisons produced a similar result ($\Delta\text{BIC}=15.03, \text{BF}=1835.37$), indicating “very strong” evidence in favor of the hypothesis that effects have different magnitudes according to Raftery’s (1995) criteria.

Figure 2 also reveals several unexpected relationships. First, CN at Time 1 was associated with greater Time 2 IS ($\beta=0.11, p=0.023$), suggesting that CN predicts over-time change in IS as well as nationalism. Second, Figure 2 reveals a reverse effect of Time 1 nationalism on Time 2 CN, net of

¹⁷ This test was carried out using the `lrtest` command in Stata 15 (StataCorp, 2017). Specifically, this command was used to test the change in χ^2 produced by re-estimating the model with the coefficient for Time 1 CN constrained to equal -1 times the coefficient for Time 1 IS.

¹⁸ Though the Time 1 inter-factor correlations are zero-order relationships that do not account for variance shared by CN and IS, the relative magnitudes of the CN-nationalism correlation ($\varphi = 0.71, p<0.001$) and the IS-nationalism correlation ($\varphi = 0.34, p<0.001$) are broadly consistent with H3. Constraining these two correlations to equality produced a significant decline in model fit as well, $\Delta\chi^2(1)=29.51, p<0.001$, with Bayesian comparison providing “very strong” evidence in favor of the correlations being unequal, $\Delta\text{BIC}=78.49, \text{BF}=1.1\times 10^{17}$.

Time 1 CN and IS ($\beta=0.22, p<0.001$); the equivalent reverse effect of Time 1 nationalism on Time 2 IS (net of Time 1 CN and Time 1 IS) was negligible ($\beta=-0.001, p>0.987$). Thus, while CN at Time 1 is associated with an increase in nationalism over time, nationalism at Time 1 is also associated with a somewhat weaker increase in CN over time. Given that these effects were not predicted by our theory, we do not interpret them further.

Discussion

Nationalism is currently a resurgent force in many countries (Mudde, 2019), making it important to understand its psychological foundations. Our results suggest that *national collective narcissism* may play an important role in attraction to nationalism, whereas non-narcissistic satisfaction with the nation (if anything) impedes rather than inspires nationalism. Using data from a panel study of Polish adults, we examined three hypotheses: (1) that nationalism, national collective narcissism, and national ingroup satisfaction would be empirically distinguishable as distinct but related latent constructs and that a three-factor structure would best fit the items measuring the three variables; (2) that national collective narcissism would be positively related to nationalism net of national ingroup satisfaction, whereas ingroup satisfaction would be negatively associated with nationalism net of national collective narcissism; and (3) that in absolute terms, the magnitude of the net relationship between national collective narcissism and nationalism would be stronger than the magnitude of the net relationship between national ingroup satisfaction and nationalism.

Our data provided clear evidence for all three hypotheses. First, confirmatory factor analyses indicated that a three-factor model fit the data better than simpler models. Second, cross-sectional regression analyses within each wave of our dataset indicated that national collective narcissism was positively related to nationalism, while national ingroup satisfaction net of national collective narcissism was negatively related to nationalism. These analyses also indicated that the net relationship between national collective narcissism and nationalism was stronger in absolute value

than the net relationship between national ingroup satisfaction and nationalism. Third, a cross-lagged panel analysis using both waves of our dataset provided a parallel pattern of support for Hypotheses 2 and 3 while accounting more thoroughly for possible effects in the reverse direction. Net of between-person differences in nationalism and national ingroup satisfaction at Time 1, between-person differences in Time 1 national collective narcissism predicted greater nationalism at Time 2. In contrast, net of between-person differences in nationalism and national collective narcissism at Time 1, between-person differences in Time 1 national ingroup satisfaction were marginally associated with reduced nationalism at Time 2.

Contributions

So, what do these results tell us? To begin with, they indicate that national collective narcissism, national ingroup satisfaction, and nationalism are distinct constructs, consistent with the argument that the multidimensionality of national attitudes that may go beyond the distinction between patriotism and nationalism (Koesterman & Feshbach, 1989). Our findings add to an important literature suggesting that positive beliefs about the national ingroup are not unitary (e.g., Blank & Schmidt, 2003; Kosterman & Feshbach, 1989). Rather, they fall into multiple dimensions, not all of which imply hostility toward other nations or national minorities to the same extent (Huddy & Khatib, 2007; Kosterman & Feshbach, 1989). In line with this notion of distinctiveness among national beliefs and in line with previous findings, we find that national collective narcissism and national ingroup satisfaction are distinct from one another and from nationalism. Moreover, we showed that national collective narcissism and ingroup satisfaction are related to nationalism in opposed ways when their common variance is accounted for.

Our results suggest that the exaggerated sense of national entitlement held by collective narcissists may predispose them to nationalism. This positive overlap between national collective narcissism and nationalism is significant whether national ingroup satisfaction is taken into account

or not (Golec de Zavala et al., 2019; cf. Cichocka & Cislak, 2020). Given the aggressive ethos of nationalism, these results echo and reinforce previous research indicating that collective narcissism is associated with variables indicative of greater general intergroup hostility (e.g., Golec de Zavala et al., 2009, 2019; Hase et al., 2021; Jasko et al., 2020) and with greater support for nationalistic populist parties, policies and leaders (e.g., Federico & Golec de Zavala, 2018; Forgas & Lantos, 2019; Keenan & Golec de Zavala, 2021; Marchlewska et al., 2018).

An important contribution of the present results is the finding that national ingroup satisfaction has a negative association (or at least null) with nationalism once its positive overlap with national collective narcissism is accounted for. This finding sheds new light on previous suggestions that nationalism involves a combination of national ingroup love and outgroup hate (Brewer, 1999; see also de Figueiredo & Elkins, 2003). Specifically, it suggests nationalism has nothing to do with love for the nation but much to do with national narcissism—and that love of nation may be negatively related (or at least irrelevant) to nationalism once national narcissism is accounted for. As such, our findings add to a growing body of research suggesting that ingroup satisfaction may be negatively associated with variables reflecting intergroup hostility once the ‘narcissistic’ component of group pride is removed by controlling for collective narcissism (Golec de Zavala, 2011, 2018; Golec de Zavala et al., 2019, 2020). This pattern has been demonstrated with respect to hostility toward minorities and marginalized groups (e.g., Golec de Zavala et al., 2020, Golec de Zavala & Bierwiazek, 2021), and the present study indicates that it extends to the net negative relationship between national ingroup satisfaction and nationalistic belief in the superiority of one’s country and a desire to see one’s country dominate others. Together with a long line of previous work (e.g., Brewer, 1999; de Figueiredo & Elkins, 2003; Kosterman & Feshbach, 1989), this finding suggests that a positive orientation toward the national group need not spill into national arrogance or aspirations to dominance over time. Rather, net of that portion of national self-regard that

represents an exaggerated, narcissistic sense of national deservingness, satisfaction with one's national identity may reduce one's attraction to nationalism (Golec de Zavala & Lantos, 2020).

In sum, the key contributions of the present study are to emphasize that national collective narcissism and national ingroup satisfaction are distinct positive beliefs about the nation (Golec de Zavala et al., 2019, 2020) and that nationalism does not flow simply from an intense love of the nation. Instead, nationalism is disproportionately related to national collective narcissism (especially when it is purged of national ingroup satisfaction). In contrast, non-narcissistic satisfaction with the nation, if anything, is associated with reduced nationalism. In this way, our findings help answer the question of when positive beliefs about the national ingroup predict hostility toward (national) outgroups (Brewer et al., 1999; see also Kosterman & Feshbach, 1989): they do so when ingroup love takes a narcissistic form. By focusing on collective narcissism, our findings thus point to a qualitatively different motivation for nationalism that previous studies have not explored. Future studies would do well to investigate whether and how ingroup satisfaction can be purged of collective narcissism to reduce nationalism.

Future Directions

Though we believe that these results provide important insight into psychological foundations of nationalism, they are not the final word. In this spirit, we conclude by noting directions for future research. First, though our data suggest a clear relationship between national collective narcissism and nationalism, there are crucial limits to the scope of this overlap. In particular, research suggests that the aggressiveness associated with collective narcissism is rooted in vulnerability and perceived harm due to the lack of respect for the ingroup, whereas national vulnerability is less central to nationalism (Golec de Zavala et al., 2019). Consistent with this, our confirmatory factor analyses found that collective narcissism was distinct from nationalism. That said, our results also suggest that nationalism may be one outlet for the hostility motivated by

collective narcissists' insecure exaggeration of the national ingroup's greatness, even if not all nationalism is motivated by collective narcissism. Future research would do well to explore factors that strengthen or weaken the relationship between national collective narcissism and nationalism. Future research would do well to explore factors that strengthen national ingroup satisfaction without increasing national collective narcissism. The finding that national ingroup satisfaction does not predict increases in national collective narcissism suggests that national collective narcissism and national ingroup satisfaction may have different motivational roots and national collective narcissism is not just more intense form of ingroup satisfaction, though this finding needs to be replicated. It is also worth noting that less than 30% of the variance in national ingroup satisfaction (28% at Time 1, 24% at Time 2) overlapped with national collective narcissism in our data, suggesting that non-narcissistic ingroup satisfaction is not only possible but present.

Second, future research may wish to improve on our analysis of the relations among national collective narcissism, national ingroup satisfaction, and nationalism. All of our measures used Likert-type items, raising the possibility of common method variance (Richardson, Simmering, & Sturman, 2009). Additional studies should thus measure each of the core constructs using multiple item types to help address this concern.

Third, by focusing on Poland, the present research capitalizes on an excellent context for studying the link between national collective narcissism and nationalism. As noted above, nationalistic themes are prominent in the style and rhetoric of Poland's governing Law and Justice party (Cichocka & Cislak, 2020). The actions of the right-wing nationalist government led by this party are controversial and contested by the more liberal part of Polish society. Constant protest by various groups disadvantaged by the state keep the debate of what it means to be Polish salient for the majority of citizens. This societal context is similar in other countries where illiberal, authoritarian-populist backlash has also been strong (e.g., Federico & Golec de Zavala, 2018; Forgas

& Lantos, 2020). Studies would do well to replicate the present findings in similar national political contexts and explore whether the association between the variables changes in contexts in which national collective narcissism did not become the normative way of defining the national feelings.

Finally, the two-wave cross-lagged panel model we use in our dynamic analyses is limited in certain respects. Though the CLPM is the most appropriate model for our goal in this study—i.e., estimating the over-time effects of between-persons differences in one construct on between-person differences in a second construct (Orth et al., 2021)—it does not account for trait-like stability in the variables. This means that it cannot completely differentiate between-person changes in the rank ordering of participants' scores on the variables from within-person changes in the variables, potentially leading to biased estimates of autoregressive and cross-lagged coefficients (Hamaker et al., 2015). For the same reason, the CLPM cannot address hypotheses about the effects of short-term, within-person changes in one variable on within-person changes in another variable (i.e., within-person deviations from individual-level means on the variables; Orth et al., 2021).¹⁹

Alternative modeling strategies that address these concerns require more than two waves of data for identification, preventing their use in the present study. Thus, future studies should replicate our longitudinal analyses using designs with at least three waves and alternative estimators. These issues and others await additional inquiry.

¹⁹ Note that within-person hypotheses of this sort are distinct from our own hypotheses, which focus specifically on between-person differences. Nevertheless, as a robustness check on our cross-lagged panel model results, we also estimated a latent change score model (LCSM) predicting the change in nationalism from Time 1 to Time 2. This model focuses more specifically on predicting differences in within-person changes in an outcome over time (McArdle, 2009).

References

- Alizada, N., Cole, R., Gastaldi, L., Grahn, S., Hellmeier, D., Kolvani, P., Lachapelle, J., Lührmann, A., Maerz, S. F., Pillai, S., & Lindberg, S. I. (2021). *Autocratization turns viral: Democracy Report 2021*. Gothenburg, Sweden: V-Dem Institute.
- Azen, R., & Budescu, D. V. (2006). Comparing predictors in multivariate regression models: An extension of dominance analysis. *Journal of Educational and Behavioral Statistics*, 31, 157-180.
- Bagci, S. C., Stathi, S., & Golec de Zavala, A. (2021). Social identity threat across group status: Links to psychological well-being and intergroup bias through collective narcissism and ingroup satisfaction. *Cultural Diversity and Ethnic Minority Psychology*.
<https://doi.org/10.1037/cdp0000509>
- Baguley, T. (2009). Standardized or simple effect size: What should be reported? *British Journal of Psychology*, 100, 603–617.
- Blank, T., & Schmidt, P. (2003). National identity in a united Germany: Nationalism or patriotism? An empirical test with representative data. *Political Psychology*, 24, 289-312.
- Brewer, M. B. (1999). The psychology of prejudice: Ingroup love and outgroup hate? *Journal of Social Issues*, 55, 429-444.
- Carter, N. M., & Perez, E. O. (2015). Race and nation: how racial hierarchy shapes national attachments. *Political Psychology*, 37, 497-513.
- Cameron, J. E., (2004). A Three-Factor Model of Social Identity, *Self and Identity*, (3)3, 239-262, DOI: [10.1080/13576500444000047](https://doi.org/10.1080/13576500444000047)
- Cichocka, A., & Cislak, A. (2020). Nationalism as collective narcissism. *Current Opinion in Behavioral Sciences*, 34, 69–74.

- Cichocka, A., Golec de Zavala, A., Marchlewska, M., Bilewicz, M., Jaworska, M., and Olechowski, M. (2018). Personal control decreases narcissistic but increases non-narcissistic in-group positivity. *Journal of Personality*, 86, 465-480.
- Cichocka, A., Marchlewska, M., Golec de Zavala, A., and Olechowski, M. (2016). "They will not control us": In-group positivity and belief in intergroup conspiracies. *British Journal of Psychology*, 107, 556–576. doi:10.1111/bjop.12158
- Cinelli, C., & Hazlett, C. (2018). Making sense of sensitivity: Extending omitted variable bias. Retrieved from https://polmeth.byu.edu/Plugins/FileManager/Files/Papers/making_sense_of_sensitivity_10July2018.pdf
- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, 112, 558-577.
- Crocker, J., & Luhtanen, R. (1990). Collective self-esteem and ingroup bias. *Journal of Personality and Social Psychology*, 58(1), 60–67. <https://doi.org/10.1037/0022-3514.58.1.60>
- de Figueiredo Jr., R. J. P., & Elkins, Z. (2003). Are patriots bigots? An inquiry into the vices of in-group pride. *American Journal of Political Science*, 47, 171-188.
- Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of Psychology*, 53, 161-186. doi:10.1146/annurev.psych.53.100901.135228
- Federico, C. M., Golec de Zavala, A., & Dial, J. L. (2005). The relationship between the need for closure and support for military action against Iraq: Moderating effects of national attachment. *Personality and Social Psychology Bulletin*, 31, 621-632.
- Federico, C. M., & Golec de Zavala, A. (2018). Collective narcissism and the 2016 US Presidential vote. *Public Opinion Quarterly*, 82, 110–121. <https://doi.org/10.1093/poq/nfx048>

- Feshbach, S. (1994). Nationalism, patriotism, and aggression: A clarification of functional differences. In L. R. Huesmann (Ed.), *Aggressive Behavior: Current Perspectives* (pp. 275-291). New York, NY: Putnam.
- Finkel, S. E. (1995). *Causal analysis with panel data*. Thousand Oaks, CA: Sage Publications.
- Forgas, J. P., & Lantos, D. (2019). Understanding populism: Collective narcissism and the collapse of democracy in Hungary. In J. P. Forgas, K. Fiedler, & W. Crano (Eds.), *Applications of Social Psychology* (pp. 267-293). New York, NY: Psychology Press.
- Fox, J. (2016). *Applied Regression Analysis and Generalized Linear Models*. 3rd ed. Los Angeles: Sage Publications.
- Golec de Zavala, A. (2011). Collective narcissism and intergroup hostility: The dark side of “in-group love.” *Social and Personality Psychology Compass*, 5, 309–320.
- Golec de Zavala, A. (2018). Collective narcissism: Antecedents and consequences of exaggeration of the in-group image. In A. Hermann, A. Brunell, & J. Foster (Eds.), *The handbook of trait narcissism: Key advances, research methods, and controversies* (pp. 79-89). New York, NY: Springer.
- Golec de Zavala, A. (2020). Why is populism so robustly associated with conspiratorial thinking? Collective narcissism and the Meaning Maintenance Model. In J. Sinnott & J. Rabin (Eds.), *The psychology of political behavior in a time of change: Identity in a changing world*. New York, NY: Springer
- Golec de Zavala, A., & Cichocka, A. (2012). Collective narcissism and anti-Semitism in Poland. *Group Processes and Intergroup Relations*, 15, 213-229.
- Golec de Zavala, A., Cichocka, A., & Bilewicz, M. (2013). The paradox of in-group love: Differentiating collective narcissism advances understanding of the relationship between in-group and out-group attitudes. *Journal of Personality*, 81, 17-28.

- Golec de Zavala, A., Cichocka, A., Eidelson, R., & Jayawickreme, N. (2009). Collective narcissism and its social consequences. *Journal of Personality and Social Psychology*, 97, 1074-1096.
- Golec de Zavala, A., Cichocka, A., & Iskra-Golec, I. (2013). Collective narcissism moderates the effect of in-group image threat on intergroup hostility. *Journal of Personality and Social Psychology*, 104, 1019-1039. <http://dx.doi.org/10.1037/a0032215>
- Golec de Zavala, A., Dyduch-Hazar, K., & Lantos, D. (2019). Collective narcissism: Political consequences of investment of self-worth into an ingroup's image. *Advances in Political Psychology*, 40(S1), 37-74.
- Golec de Zavala, A., Federico, C. M., Sedikides, C., Guerra, R., Lantos, D., Mrozinski B., Cyprianska, M., & Baran, T. (2020). Low self-esteem predicts out-group derogation via collective narcissism, but this relationship is obscured by in-group satisfaction. *Journal of Personality and Social Psychology*, 119(3), 741-764. <http://dx.doi.org/10.1037/pspp0000260>
- Golec de Zavala, A., & Lantos, D. (2020). Collective narcissism and its social consequences: The bad and the ugly. *Current Directions in Psychological Science*, 29(3), 273-278. <https://doi.org/10.1177/0963721420917703>
- Golec de Zavala, A., Peker, M., Guerra, R., & Baran, T. (2016). Collective narcissism predicts hypersensitivity to in-group insult and direct and indirect retaliatory intergroup hostility. *European Journal of Personality*, 30, 532–551
- Golec de Zavala A, Sedikides, C. Sawicki, A., Ciesielski, P., Guerra, R. & Baran, T. (2022). *National collective narcissism predicts prejudice* Manuscript submitted.
- Graff, A., & Korolczuk, E. (2022). *Anti-Gender Politics in the Populist Moment*. Taylor & Francis. DOI: 10.4324/9781003133520
- Guerra, R., Bierwiazek, K., Ferreira, M., Golec de Zavala, A., Abakoumkin, G., Wildschut, T., & Sedikides, C. (2020). An intergroup approach to collective narcissism: Intergroup threats and

- hostility in four European Union countries. *Group Processes & Intergroup Relations*, OnlineFirst. <https://doi.org/10.1177/1368430220972178>
- Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the crosslagged panel model. *Psychological Methods*, 20(1), 102–116. <https://doi.org/10.1037/a0038889>.
- Hase, A., Behnke, M., Mazurkiewicz, M., Wieteska, K. K., & Golec de Zavala, A. (2021). Distress and retaliatory aggression in response to witnessing intergroup exclusion are greater on higher levels of collective narcissism. *Psychophysiology*, 58(9), e13879. <https://doi.org/10.1111/psyp.13879>
- Huddy, L., & Khatib, N. (2007). American patriotism, national identity, and political involvement. *American Journal of Political Science*, 51, 63–77.
- Jaskiernia, J. (2019). Authoritarian tendencies in the Polish political system. In J. J. Wiatr (Ed.), *New Authoritarianism* (pp. 152-168). Opladen, Germany: Verlag Barbara Budrich.
- Jasko, K., Webber, D., Kruglanski, A. W., Gelfand, M., Taufiqurrohman, M., Hettiarachchi, M., & Gunaratna, R. (2020). Social context moderates the effects of quest for significance on violent extremism. *Journal of Personality and Social Psychology*, 118(6), 1165-1187.
- Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., Ouwerkerk, J. W., & Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology*, 95, 144-165.
- Keenan, O. & Golec de Zavala, A. (2021). Collective Narcissism and Weakening of American Democracy. *Analyses of Social Issues and Public Policy*, <https://doi.org/10.31219/osf.io/938vy>
- Kende, A., Hadarics, M., & Szabó, Z. P. (2019). Inglorious glorification and attachment: National and European identities as predictors of anti- and pro-immigrant attitudes. *British Journal of Social Psychology*, 58(3), 569–590. <https://doi.org/10.1111/bjso.12280>

- Kosterman, R., & Feshbach, S. (1989). Toward a measure of patriotic and nationalistic attitudes. *Political Psychology, 10*, 257-274.
- Long, J. S., & Ervin, L. H. (2000). Using heteroskedasticity consistent standard errors in the linear regression model. *American Statistician, 54*, 217-234.
- Luchman, J. N. (2013). *DOMIN: Stata Module to Conduct Dominance Analysis*. Statistical Software Components S457629, Boston College Department of Economics, revised 04 May 2015. Retrieved from <https://ideas.repec.org/c/boc/bocode/s457629.html>.
- Lyons, P. A., Kenworthy, J. B., & Popan, J. R. (2010). Ingroup identification and group-level narcissism and predictors of U.S. citizens' attitudes toward Arab immigrants. *Personality and Social Psychology Bulletin, 36*, 1267-1280.
- Marchlewska, M., Cichocka, A., Panayiotou, O., Castellanos, K., & Batayneh, J. (2018). Populism as identity politics: Perceived in-group disadvantage, collective narcissism, and support for populism. *Social Psychological and Personality Science, 9*, 151-162.
- Markowski, R. (2016). "The Polish parliamentary election of 2015: A free and fair election that results in unfair political consequences. *West European Politics, 39*, 1311-1322.
- McArdle J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology, 60*, 577-605.
<https://doi.org/10.1146/annurev.psych.60.110707.163612>
- McDonell, D., & Werner, A. (2019). *International populism: The radical right in the European Parliament*. Oxford, UK: Oxford University Press.
- Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry, 12*, 177-196.
- Mudde, C. (2019). *The Far Right today*. Cambridge, UK: Polity Press.

- Mudde, C., & Kaltwasser, C. R. (2017). *Populism: A very short introduction*. Oxford, UK: Oxford University Press.
- Müller, J. (2017). *What is populism?* London, United Kingdom: Penguin Books.
- Mummendey, A., Klink, A., & Brown, R. (2001). Nationalism and patriotism: National identification and out-group rejection. *British Journal of Social Psychology*, 40, 159–172.
- Norris, P., & Inglehart, R. (2019). *Cultural backlash: Trump, Brexit, and authoritarian populism*. Cambridge: Cambridge University Press.
- Orth, U., Clark, D. A., Donnellan, M. B., & Robins, R. W. (2021). Testing prospective effects in longitudinal research: Comparing seven competing cross-lagged models. *Journal of Personality and Social Psychology*, 120, 1013-1034. <http://dx.doi.org/10.1037/pspp000035>
- Parker, C. S. (2009). Symbolic versus blind patriotism: Distinction without difference? *Political Research Quarterly*, 63, 97-114.
- Pehrson, S., Brown, R., & Zagefka, H. (2009). When does national identification lead to the rejection of immigrants? Cross-sectional and longitudinal evidence for the role of essentialist in-group definitions. *British Journal of Social Psychology*, 48, 61-76.
- Raftery, A. E., (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111-163.
- Roccas, S., Klar, Y., & Liviatan, I. (2006). The paradox of group-based guilt: Modes of national identification, conflict vehemence, and reactions to the in-group's moral violations. *Journal of Personality and Social Psychology*, 91(4), 698–711. <https://doi.org/10.1037/0022-3514.91.4.698>
- Roccas, S., Sagiv, L., Schwartz, S., Halevy, N., & Eidelson, R. (2008). Toward a unifying model of identification with groups: Integrating theoretical perspectives. *Personality and Social Psychology Review*, 12(3), 280–306. <https://doi.org/10.1177/1088868308319225>

Schatz, R. T., Staub, E., & Lavine, H. (1999). On the varieties of national attachment: Blind versus constructive patriotism. *Political Psychology*, 20, 151-174.

Sidanius, J., Feshbach, S., Levin, S., & Pratto, F. (1997). The interface between ethnic and national attachment: Ethnic pluralism or ethnic dominance? *Public Opinion Quarterly*, 61, 102-133.

<https://doi.org/10.1086/297789>

StataCorp (2017). *Stata Statistical Software: Release 15*. College Station, TX: StataCorp LLC.

Viroli, M. (1995). *For love of country: An essay on patriotism and nationalism*. Oxford, UK: Clarendon.

Table 1

Measurement Models for Collective Narcissism, Ingroup Satisfaction, and Nationalism at Time 1 and Time 2

Time 1 Estimates					
Model	χ^2 (df)	CFI	TLI	RMSEA	BIC
One factor	3668.31 (77)	0.64	0.58	0.21	-3025.57
Two factors	832.22 (76)	0.92	0.91	0.10	-5854.89
Three factors	594.98 (74)	0.95	0.94	0.08	-6078.24
Time 2 Estimates					
Model	χ^2 (df)	CFI	TLI	RMSEA	BIC
One factor	3768.94 (77)	0.59	0.51	0.237	-2818.95
Two factors	620.24 (76)	0.94	0.93	0.092	-5960.90
Three factors	467.58 (74)	0.96	0.95	0.08	-6100.06

Note. The one-factor model specifies all items from all scales as indicators of a single factor; the two-factor model specifies the collective-narcissism and nationalism items as indicators of a first factor and the ingroup-satisfaction items as indicators of a second factor; and the three-factor model specifies a separate factor for the items in each scale. $N = 1065$, for Wave 1; $N = 853$, for Wave 2.

Table 2

Nationalism as a Function of Collective Narcissism and Ingroup Satisfaction in Waves 1 and 2: Cross-sectional Estimates

Time 1 Estimates			
Predictor	<i>b</i>	SE	<i>p</i>
Male	0.03	(0.01)	<0.001
Education	0.01	(0.01)	>0.250
Age	-0.001	(0.0003)	<0.001
Collective Narcissism	0.41	(0.02)	<0.001
Ingroup Satisfaction	-0.08	(0.02)	0.002
Intercept	0.28	(0.02)	<0.001
<i>F</i> (degrees of freedom)	73.89 (5, 1059), <i>p</i> <0.001		
<i>R</i> ²	0.317		
<i>N</i>	1065		
Time 2 Estimates			
Predictor	<i>b</i>	SE	<i>p</i>
Male	0.02	(0.01)	0.005
Education	0.01	(0.01)	>0.250
Age	-0.11	(0.0003)	<0.001
Collective Narcissism	0.46	(0.02)	<0.001
Ingroup Satisfaction	-0.04	(0.02)	0.074
Intercept	0.25	(0.02)	<0.001
<i>F</i> (degrees of freedom)	115.17 (5, 847), <i>p</i> <0.001		
<i>R</i> ²	0.454		
<i>N</i>	853		

Note. Entries are ordinary least-squares regression coefficients and HC3 robust standard errors.

(1) Time 1 Estimates **(2) Time 2 Estimates**

Figure 1. Nationalism as a function of collective narcissism and ingroup satisfaction: Cross-sectional estimates. The error bands indicate 95% CIs around the predictions. Predicted values based on estimates in Table 2.

Figure 2. Cross-lagged panel model for relationships between collective narcissism, ingroup satisfaction, and nationalism: $\chi^2(321) = 1327.33, p < 0.001$, CFI = 0.95, TLI = 0.94; RMSEA = 0.05. Standardized estimates are shown. Factor loadings are not shown. CN = collective narcissism; IS = ingroup satisfaction. The path for Time 1 IS to Time 2 Nationalism is marginally significant at the $p = 0.053$ level. Maximum likelihood for missing values (MLMV) was used to estimate model parameters. $N = 1065$. (***) $p < 0.001$, ** $p < 0.01$, * $p < 0.05$).

Supplemental Materials

1. Power Estimates

As noted in the main text of the paper, sample size was determined a priori. Nevertheless, the final sample sizes at Time 1 ($n=1065$) and Time 2 ($n=853$) afforded sufficient power for our intended regression-based analyses. To demonstrate, we used Stata 15's `power rsquared` command (StataCorp, 2017) to estimate the power to detect varying incremental increases in R^2 resulting from the addition of collective narcissism (our focal predictor) to a regression model already containing the covariates included in our primary regressions in Table 2 (i.e., age, education, male gender, and ingroup satisfaction).

In these analyses, we assumed a baseline R^2 of 0.05 for the model containing only the covariates and then estimated the power to detect increases in R^2 (ΔR^2) of 0.01, 0.05, 0.10, 0.15, and 0.20 at sample sizes of $n=1065$ (Time 1) and $n=853$ (Time 2). For the Time 1 sample size of $n=1065$, the power estimates were 0.92 ($\Delta R^2=0.01$), 1.00 ($\Delta R^2=0.05$), 1.00 ($\Delta R^2=0.20$), 1.00 ($\Delta R^2=0.15$), and 1.00 ($\Delta R^2=0.20$). For the Time 1 sample size of $n=853$, the power estimates were 0.85 ($\Delta R^2=0.01$), 1.00 ($\Delta R^2=0.05$), 1.00 ($\Delta R^2=0.20$), 1.00 ($\Delta R^2=0.15$), and 1.00 ($\Delta R^2=0.20$).

Thus, the sample sizes in each wave provide considerable power to detect effects of a variety of sizes for collective narcissism.

2. Correlations Among Key Study Variables

Correlations between the three key study variables at Time 1 and Time 2 are provided in Table S1 below. The correlations are estimated using only respondents who completed both survey waves ($N=853$).

Table S1

Correlations Among Key Study Variables

Variables	1	2	3	4	5	6
1. Nationalism (T1)	1.00					
2. Collective Narcissism (T1)	0.55***	1.00				
3. In-group Satisfaction (T1)	0.20***	0.52***	1.00			
4. Nationalism (T2)	0.64***	0.52***	0.19***	1.00		
5. Collective Narcissism (T2)	0.54***	0.74***	0.38***	0.64***	1.00	
6. In-group Satisfaction (T2)	0.21***	0.46***	0.73***	0.24***	0.49***	1.00

Note. All entries are Pearson correlations. $N=853$ for correlations involving all waves ($\dagger p<.10$. $*p<.05$. $**p<.01$. $***p<.001$.)

3. Factor Loadings and Correlations for Final Three-Factor Models

In Table S2, standardized and unstandardized loadings and factor correlations for the the final three-factor models reported in Table 1 for Time 1 and Time 2 in the main text. The items can be identified as follows:

Nationalism: “My country is not better than any other country in the world” (reversed, NAT1), “My country should not dominate other countries” (reversed, NAT2), “The more my country influences other countries the better they are” (NAT3), “In order to maintain the dominant position of my country aggressive economic actions against other countries are sometimes necessary” (NAT4), “In order to maintain my country’s power it is sometimes necessary to engage in war with other countries” (NAT5).

Collective narcissism: “If Poland had a major say in the world, the world would be a much better place” (CN1), “Poland deserves special treatment” (CN2), “It really makes me angry when others criticize Poland” (CN3), “Not many people seem to fully understand the importance of Poland” (CN4), “I will never be satisfied until Poland gets the recognition it deserves” (CN5).

In-group satisfaction: “I am glad to be Polish” (IS1), “I think that Poles have a lot to be proud of” (IS2), “It is pleasant to be Polish” (IS3), “Being Polish gives me a good feeling” (IS4).

Table S2

Final Loadings and Factor Correlations from Final Three-Factor Models, Time 1 and Time 2

	<i>Wave 1 Loading (Standardized)</i>	<i>Wave 1 Loading (Unstandardized)</i>	<i>Wave 2 Loading (Standardized)</i>	<i>Wave 2 Loading (Unstandardized)</i>
<i>Nationalism:</i>				
NAT1	0.28	1.00*	0.34	1.00*
NAT2	0.21	0.74	0.39	0.81
NAT3	0.67	2.48	0.71	2.12
NAT4	0.78	2.70	0.50	2.40
NAT5	0.47	1.83	0.87	1.53
<i>Collective Narcissism:</i>				
CN1	0.83	1.00*	0.87	1.00*
CN1	0.81	1.03	0.87	0.98
CN3	0.79	0.98	0.82	0.95
CN4	0.83	0.99	0.82	0.92
CN5	0.82	0.98	0.85	0.97
<i>In-group Satisfaction:</i>				
IS1	0.93	1.00*	0.93	1.00*
IS2	0.95	1.02	0.95	1.00
IS3	0.85	0.86	0.85	0.88
IS4	0.94	1.02	0.95	1.00
<i>Factor Correlations:</i>				
φ CN-Nationalism	0.71		0.83	
φ IS-Nationalism	0.34		0.36	
φ CN-IS	0.56		0.51	

Note. Entries are standardized and unstandardized loadings from the final three-factor solution for each wave. The loading for the first item on each factor was fixed to 1 to set the metric of each factor; these are marked with asterisks in the unstandardized solutions. All free loadings were significantly different from zero according to z-tests (i.e., unstandardized loading divided by its standard error) at the $p < 0.001$ level; all factor correlations were also significantly different from zero at the $p < 0.001$ level. Identifying information for specific items is provided in the accompanying text.

4. Dominance Analysis for Cross-Sectional Models

To provide an additional look at the relative predictive power of the independent variables included in the cross-sectional regressions presented in Table 2, we also conducted a dominance analysis (Azen & Budescu, 2006); all analyses were conducted using the `domin` command (Luchman, 2013) in Stata 15. Dominance analysis averages information from multiple possible models constructed from k predictors to summarize the net contribution of each predictor to overall model fit across specifications. The dominance analyses for the models in Table 2 are summarized in Table S3.

We present two statistics for each predictor in each time period. The *dominance statistic* for an independent variable is the average net increase in model R^2 produced by adding that independent variable to models constructed using all possible subsets of the other $k-1$ predictors. The *standardized dominance statistic* is computed by dividing the dominance statistic for a predictor by the sum of the dominance statistics for all k independent variables in an equation; it is normalized to range from 0 to 1 (Azen & Budescu 2006).

As the estimates in Table S3 indicate, collective narcissism had both a higher dominance statistic and a higher standardized dominance statistic than ingroup satisfaction at Time 1 and Time 2. Indeed, in each wave, collective narcissism had higher dominance and standardized dominance statistics than any other predictor. Moreover, an independent variable can be said to “completely dominate” another independent variable if it provides a larger incremental contribution to R^2 than the other variable across all possible model comparisons (Luchman, 2013). According to this criterion, collective narcissism completely dominated ingroup satisfaction at both Time 1 and Time 2. Thus, our dominance analysis reinforces the conclusion in the main analyses that collective narcissism is more strongly related to nationalism in absolute terms than ingroup satisfaction is.

Table S3

Dominance Analysis for Models in Table 2

Time 1 Estimates		
Predictor	Dominance Statistic	Standardized Dominance Statistic
Male	0.0081	0.0025
Education	0.0023	0.0074
Age	0.0187	0.0589
Collective Narcissism	0.2655	0.8278
Ingroup Satisfaction	0.0223	0.0704
Time 2 Estimates		
Predictor	Dominance Statistic	Standardized Dominance Statistic
Male	0.0059	0.0131
Education	0.0032	0.0071
Age	0.0371	0.0817
Collective Narcissism	0.3735	0.8228
Ingroup Satisfaction	0.0342	0.0754

5. Additional Structural-Model Estimates from Cross-Lagged Panel Analysis

As a supplement to the structural-equation model estimates summarized in Figure 2, Table S4 provides additional statistics. In addition to reproducing the standardized estimates for the structural parameters included in Figure 2 (β), Table S4 also presents unstandardized estimates (b), standard errors for the unstandardized estimates (SE b), and complete p -values for two-tailed tests on the structural-parameter estimates. All estimates were obtained with the `sem` command in Stata 15 using the maximum likelihood with missing values (MLMV) estimator (StataCorp, 2017).

Table S4

Full Structural-Model Estimates from Cross-Lagged Panel Analysis in Figure 2

	b	SE b	β	p
<i>Predicting T2 Nationalism ($R^2 = 0.53$):</i>				
Nationalism (T1)	0.48	(0.10)	0.46	<0.001
Collective Narcissism (T1)	0.11	(0.02)	0.37	<0.001
In-group Satisfaction (T1)	-0.02	(0.01)	-0.08	0.053
<i>Predicting T2 Collective Narcissism ($R^2 = 0.63$):</i>				
Nationalism (T1)	0.77	(0.19)	0.22	<0.001
Collective Narcissism (T1)	0.68	(0.06)	0.64	<0.001
In-group Satisfaction (T1)	-0.03	(0.03)	-0.03	0.303
<i>Predicting T2 In-group Satisfaction ($R^2 = .57$):</i>				
Nationalism (T1)	-0.003	(.16)	-0.001	0.987
Collective Narcissism (T1)	0.11	(.05)	0.11	0.023
In-group Satisfaction (T1)	0.69	(.03)	0.69	<0.001

Note. Estimates are from the cross-lagged panel model for relationships between collective narcissism, ingroup satisfaction, and nationalism shown in Figure 2: $\chi^2(321) = 1327.33, p < .001$, CFI = 0.95, TLI = 0.94, RMSEA = 0.05 (N = 1065). Estimates indicate structural relationships between latent variables for key constructs. Reported p -values are based on tests from the

unstandardized solution. Maximum likelihood for missing values (MLMV) was used to estimate model parameters.

6. Robustness Checks With Reduced Collective Narcissism Measure

A potential problem with our measure of national collective narcissism is that the first items in the scale includes content similar to that in our nationalism measure: “If Poland had a major say in the world, the world would be a much better place.” This item implies national dominance, and it is actually somewhat similar in wording to a specific nationalism item (i.e., “The more my country influences other countries the better they are”). To ensure that this redundancy did not unduly influence our primary results, we repeated the main analyses using a four-item version of the CN scale that omitted this item. This reduced scale was still highly reliable and had similar properties to the original scale (Time 1: $\alpha=0.89$, $M=3.68$, $SD=1.22$; Time 2: $\alpha=0.91$, $M=3.44$, $SD=1.24$; Time 1, 0-1 coding: $M=0.54$, $SD=0.24$; Time 2, 0-1 coding: $M=0.49$, $SD=0.25$).

Table S5 summarizes fit statistics for the hypothesized three-factor model for CN, IS, and nationalism, along with the alternative one and two factor models (parallel to Table 1 for the full CN measure). A three-factor model again adequately fit the data at Time 1 and at Time 2. The reduced national CN factor had interfactor correlations with national IS ($\varphi = 0.57$, $p<0.001$, at Time 1; $\varphi = 0.52$, $p<0.001$, at Time 2) and nationalism ($\varphi = 0.69$, $p<0.001$, at Time 1; $\varphi = 0.81$, $p<0.001$, at Time 2) that were virtually identical to those produced by the full CN scale (see Table S2 for comparison). At Time 1, the three-factor model provided a significant improvement in fit over both the one-factor model, $\Delta\chi^2(3)=2348.38$, $p<0.001$, and the two-factor model, $\Delta\chi^2(2)=245.88$, $p<0.001$. Similarly, at Time 2, the three-factor model provided a significantly better fit compared to both the one-factor model, $\Delta\chi^2(3)=2626.81$, $p<0.001$, and the two-factor model, $\Delta\chi^2(2)=160.97$, $p<0.001$.

Bayesian comparisons told a similar story. At Time 1, the three-factor model fit better than the one-factor model, $\Delta\text{BIC}=2,327.46$, $\text{BF}=2.5\times 10^{505}$; and the two-factor model, $\Delta\text{BIC}=231.94$, $\text{BF}=2.3\times 10^{50}$. At Time 2, the three-factor model fit better than the one-factor model, $\Delta\text{BIC}=2,606.56$, $\text{BF}=1.0\times 10^{566}$; and the two-factor model, $\Delta\text{BIC}=147.47$, $\text{BF}=1.1\times 10^{32}$. In all cases, these statistics indicate “very strong” evidence for the three-factor model versus the alternatives according to Raftery’s (1995) criteria (i.e., $\Delta\text{BIC}>10$ and $\text{BF}>150$).

Table S5

Measurement Models for Collective Narcissism (Reduced), Ingroup Satisfaction, and Nationalism at Time 1 and Time 2

Time 1 Estimates					
Model	χ^2 (df)	CFI	TLI	RMSEA	BIC
One factor	2918.22 (65)	0.68	0.62	0.203	-3056.39
Two factors	815.72 (64)	0.92	0.90	0.105	-5151.91
Three factors	569.84 (62)	0.94	0.93	0.088	-5383.85
Time 2 Estimates					
Model	χ^2 (df)	CFI	TLI	RMSEA	BIC
One factor	3040.97 (65)	0.62	0.55	0.232	-2745.97
Two factors	575.13 (64)	0.94	0.92	0.097	-5205.06
Three factors	414.17 (62)	0.96	0.94	0.082	-5352.53

Note. The one-factor model specifies all items from all scales as indicators of a single factor; the two-factor model specifies the collective-narcissism and nationalism items as indicators of a first factor and the ingroup-satisfaction items as indicators of a second factor; and the three-factor model specifies a separate factor for the items in each scale. $N = 1065$, for Wave 1; $N = 853$, for Wave 2.

Table S6 presents a replication of the cross-sectional regressions summarized in Table 2 using the reduced CN measure. These results are substantively similar to those using the original,

with one exception: the coefficient for national IS at Time 2 becomes non-significant ($b = -0.03$, $\beta = -0.05$, $p=0.161$). The results for national CN at Time 1 ($b = 0.39$, $\beta = 0.57$, $p<0.001$) and Time 2 ($b = 0.45$, $\beta = 0.65$, $p<0.001$) and for national IS at Time 1 ($b = -0.07$, $\beta = -0.10$, $p=0.008$) are close to those in the original analysis. Constraining the absolute values of the coefficients for CN and IS to equal one another in the models produced a significant decrement in fit at Time 1, $F(1, 1059)=167.15$, $p<0.001$; and at Time 2, $F(1, 847)=263.65$, $p<0.001$, replicating the primary analyses.

Figure S1 presents a replication of the structural equation model summarized in Figure 2 using the reduced national CN measure. The model fit the data, $\chi^2(271) = 1209.82$, $p<0.001$, CFI = 0.95, TLI = 0.94; RMSEA = 0.057; and all estimates were similar to those produced by the full national CN measure. Re-estimating the model with the absolute values of the paths (1) from T1 collective narcissism to T2 nationalism and (2) from T1 in-group satisfaction to T2 nationalism constrained to equality again produced a significant decrement in model fit, $\Delta\chi^2(1)=20.39$, $p<0.001$ (consistent with H3). Bayesian model comparisons produced a similar result ($\Delta\text{BIC}=13.42$, $\text{BF}=820.57$), indicating “very strong” evidence in favor of the hypothesis that effects have different magnitudes according to Raftery’s (1995) criteria. Moreover, the relative magnitudes of the CN-nationalism correlation ($\varphi = 0.70$, $p<0.001$) and the IS-nationalism correlation ($\varphi = 0.34$, $p<0.001$) are also consistent with H3. Constraining these two correlations to equality produced a significant decline in model fit, $\Delta\chi^2(1) = 82.63$, $p<0.001$, with Bayesian comparison providing “very strong” evidence in favor of the correlations being unequal, $\Delta\text{BIC}=75.65$, $\text{BF}=2.7\times 10^{16}$.

In sum, modifying the national CN scale to eliminate the one item with conceptual and wording overlap with the nationalism measure did not substantively change our primary results.

Table S6

Nationalism as a Function of Collective Narcissism (Reduced) and Ingroup Satisfaction in Waves 1 and 2: Cross-sectional Estimates

Time 1 Estimates			
Predictor	<i>b</i>	SE	<i>p</i>
Male	0.03	(0.01)	0.001
Education	0.01	(0.01)	>0.250
Age	-0.002	(0.0003)	<0.001
Collective Narcissism (Reduced)	0.39	(0.02)	<0.001
Ingroup Satisfaction	-0.07	(0.03)	0.008
Intercept	0.29	(0.03)	<0.001
<i>F</i> (degrees of freedom)	70.84 (5, 1059), <i>p</i> <0.001		
<i>R</i> ²	0.302		
<i>N</i>	1065		
Time 2 Estimates			
Predictor	<i>b</i>	SE	<i>p</i>
Male	0.04	(0.01)	0.005
Education	0.004	(0.01)	>0.250
Age	-0.002	(0.0003)	<0.001
Collective Narcissism (Reduced)	0.45	(0.02)	<0.001
Ingroup Satisfaction	-0.03	(0.02)	0.161
Intercept	0.26	(0.02)	<0.001
<i>F</i> (degrees of freedom)	106.61 (5, 847), <i>p</i> <0.001		
<i>R</i> ²	0.437		
<i>N</i>	853		

Note. Entries are ordinary least-squares regression coefficients and HC3 robust standard errors.

Figure S1. Cross-lagged panel model for relationships between (reduced) collective narcissism, ingroup satisfaction, and nationalism: $\chi^2(271) = 1209.82, p < 0.001$, CFI = 0.95, TLI = 0.94; RMSEA = 0.057. Standardized estimates are shown. Factor loadings are not shown. CN = collective narcissism; IS = ingroup satisfaction. The path for Time 1 IS to Time 2 Nationalism is marginally significant at the $p = 0.053$ level. Maximum likelihood for missing values (MLMV) was used to estimate model parameters. $N = 1065$. (***) $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

7. Latent Change Score Model Predicting Changes in Nationalism

As a robustness check on our cross-lagged panel model results, we also estimated a latent change score model (LCSM) predicting the change in nationalism from Time 1 to Time 2. This model focuses more specifically on predicting differences in within-person changes in an outcome over time (McArdle, 2009). For this purpose, we used a modified version of the multiple indicator latent change score model described by Kievit et al (2020). As predictors, national CN and national IS at Time 1 were specified as latent variables indicated by their individual items from Time 1. Nationalism at Time 1 and at Time 2 were also specified as latent variables indicated by the individual items from each time period. The loadings for the nationalism items were constrained to equality across time periods, and we allowed the error term for each observed nationalism indicator at Time 1 to correlate with the error term for its equivalent indicator at Time 2 (Kievit et al., 2020). The latent change score was specified by (1) regressing the Time 2 nationalism factor on the Time 1 nationalism factor and setting the coefficient to 1 and (2) setting up the Time 2 nationalism factor as a single indicator of a latent variable corresponding to the latent change score, with the loading fixed to 1. The latent change score was then regressed on Time 1 nationalism, Time 1 national CN, and Time 1 national IS. The model was estimated in R (version 4.1.1) with the lavaan package (version 0.6-9) using maximum likelihood with the Satorra-Bentler correction for non-normality (MLM; Rosseel, 2012; Satorra & Bentler, 1994). All data and code for the analysis can be found at: <https://osf.io/m3yvk/>.

The key structural estimates for this model are summarized in Table S7. Overall model fit was acceptable, $\chi^2(154)=614.83, p<0.001$, CFI=0.94, TLI=0.93; RMSEA=0.07. The mean for the latent change score was significantly different from zero, 0.20 ($p<0.001$), and so was its variance, 0.002 ($p<0.001$), indicating that nationalism changed within persons on average and that the magnitude of the changes differed across respondents. Moreover, the coefficient for Time 1

nationalism was negative and significant ($\beta = -0.66, p < 0.001$), indicating smaller changes among respondents whose initial Time 1 nationalism levels were higher. Confirming our CLPM results, the estimates indicated that Time 1 national CN was associated with greater change in nationalism ($\beta = 0.48, p < 0.001$), whereas Time 1 national was marginally associated with smaller change in nationalism ($\beta = -0.10, p = 0.096$). This pattern is broadly consistent with H2. Moreover, constraining the absolute values coefficients for Time 1 CN and Time 1 IS to equality reduced the overall fit of the model, $\Delta\chi^2(1) = 11.46, p < 0.001$, supporting H3. Bayesian model comparisons suggested a similar conclusion ($\Delta\text{BIC} = 16.82, \text{BF} = 4491.76$), indicating “very strong” evidence in favor of H2 according to Raftery’s (1995) criteria. In sum, the LCSM results largely correspond to those reported in our main analyses.

Table S7

Latent Change Score Model: Nationalism as a Function of Collective Narcissism and Ingroup Satisfaction

Predictor	Latent Change in Nationalism			
	<i>b</i>	SE	β	<i>p</i>
Time 1 Nationalism	-0.53	(0.08)	-0.66	<0.001
Time 1 Collective Narcissism	0.12	(0.03)	0.48	<0.001
Time 1 Ingroup Satisfaction	-0.02	(0.01)	-0.10	0.096

Note. Estimates are from a multiple-indicator latent change score model for relationships between Time 1 collective narcissism and ingroup satisfaction and the latent change score for nationalism: $\chi^2(154) = 614.83, p < 0.001$, CFI = 0.94, TLI = 0.93; RMSEA = 0.07. (N = 1065). Reported p-values are based on tests from the unstandardized solution. Maximum likelihood for missing values was used to estimate model parameters.

8. Other Variables Included in the Survey

The survey we use includes a number of other variables aimed at testing hypotheses different from those examined in the present study. These included: personal self-esteem, vulnerable narcissism, and individual narcissism (Time 1 and 2); vote intention and party identification (Time 1 only); and conspiratorial thinking (Time 2 only).

References

- Azen, R., & Budescu, D. V. (2006). Comparing predictors in multivariate regression models: An extension of dominance analysis. *Journal of Educational and Behavioral Statistics*, 31, 157-180.
- Kievit, R. A., Brandmaier, A. M., Ziegler, G., van Harmelen, A. L., de Mooij, S., Moutoussis, M., Goodyer, I. M., Bullmore, E., Jones, P. B., Fonagy, P., NSPN Consortium, Lindenberger, U., & Dolan, R. J. (2018). Developmental cognitive neuroscience using latent change score models: A tutorial and applications. *Developmental Cognitive Neuroscience*, 33, 99–117.
<https://doi.org/10.1016/j.dcn.2017.11.007>
- Luchman, J. N. (2013). *DOMIN: Stata Module to Conduct Dominance Analysis*. Statistical Software Components S457629, Boston College Department of Economics, revised 04 May 2015.
 Retrieved from <https://ideas.repec.org/c/boc/bocode/s457629.html>.
- McArdle J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology*, 60, 577–605.
<https://doi.org/10.1146/annurev.psych.60.110707.163612>
- StataCorp (2017). *Stata Statistical Software: Release 15*. College Station, TX: StataCorp LLC.