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RECEIVED 27 September 2025

REVISED 29 December 2025

ACCEPTED 28 January 2026

PUBLISHED 25 February 2026

CITATION

Altungy P, Navarro-McCarthy A,
Lana-Blond R, Liébana S, Jaume LC,
Szumowska E, Molinario E, Gómez Á and
Kruglanski AW (2026) How personal
significance, collective narcissism, and
willingness to sacrifice shape extreme
personalities.
Front. Soc. Psychol. 4:1714455.
doi: 10.3389/frsps.2026.1714455

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How personal significance, collective narcissism, and willingness to sacrifice shape extreme personalities

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Introduction: Extreme feelings, behaviors, and cognitions, although often considered outside the bounds of normality, are part of human nature. This study examined whether variables proven to be related to extremism, including personal significance, collective narcissism, and willingness to make sacrifices, are related to, and could incipiently explain, extreme personality.

Methods: Data was collected from the Spanish general population ($n = 328$, 92.4% males) and individuals from a Spanish prison ($n = 222$, 95.5% males). Multiple linear regression and mediation analyses were conducted, with extreme personality being the outcome variable.

Results: For the general population, two regression analyses showed that collective narcissism, sacrifice for values, sacrifice for group, and either quest for significance ($R^2_{\text{adjusted}} = 0.071$; $F = 5.61$; $p = 0.004$) or loss of significance ($R^2_{\text{adjusted}} = 0.077$; $F = 4.73$; $p = 0.009$) predicted extreme personality. For the prison sample, only collective narcissism along with quest for significance ($R^2_{\text{adjusted}} = 0.252$; $F = 10.84$; $p = 0.001$) or loss of significance ($R^2_{\text{adjusted}} = 0.170$; $F = 7.53$; $p = 0.007$) predicted extreme personality. Mediation analysis showed that collective narcissism and willingness to sacrifice for one's highest values partially mediated the relationship between personal significance and extreme personality in the general population, while only collective narcissism did so for the prison sample.

Discussion: These results underscore the role that personal significance has in explaining extreme personality and could also indicate that in-group superiority and self-sacrifice (for those in the general population) act as partial psychological pathways, linking personal significance to extreme personality.

KEYWORDS

collective narcissism, extreme personality, mediation analysis, quest for significance, significance loss, willingness to make sacrifices

Introduction

They reached the trenches and said firmly: Here we shall take root before anyone drives us out! And death felt proud to have them.

Miguel Hernández, “Llamo a la juventud”

In an increasingly polarized world, the word *extreme* is frequently used in media coverage (Larsen, 2019), in politics (Rozado and Kaufmann, 2022), and in day-to-day conversations. It is a term that is widely applied to many domains, from religious zeal (Tietjen, 2021) to some types of sport practice (Hornby et al., 2024), social activism (Altungy et al., 2025), excessive work commitment (Garavan et al., 2024), and even to those in caregiving roles (Cooper, 2021).

According to the *Encyclopaedia Britannica* (s.d.), *extreme* is defined as “either one of two opposite conditions, feelings, positions, etc., that are thought of as being far from what is normal or reasonable” or “an amount or degree that is far beyond what is normal or reasonable.” Based on this definition, for feelings, thoughts, or behaviors to be regarded as extreme, they should lie outside of what is considered “normal or reasonable”. In psychological science, it is widely known how tricky the terms “normal” and “reasonable” might be, as they are often subject to biased interpretations based on subjective experiences and personal meaning (Tobia, 2018). In addition to this, the sociocultural and historical context is a key aspect in defining what counts as *extreme* (Smagacz-Poziemska et al., 2024). For instance, in many countries a woman driving or showing her hair in public spaces would not surprise anyone and would be regarded as something normal. However, these very same behaviors, in some countries, are greatly shocking (even illegal), to the point of being labelled as “radicalism” by local authorities (Teimouri, 2024; Khalil and Storie, 2021).

Recently, psychological science has added a significant work to the definition of extremism, proposing underlying motivational mechanisms that define it (Kruglanski et al., 2021a,b,c). According to this novel theoretical framework, extremism is the result of an imbalance between needs, wherein a personal need that is heightened over any other overrules all remaining personal concerns, so that an individual will use any means accessible to satisfy the focal need, even when that means is detrimental to that individual’s wellbeing. In contrast, moderation is the result of a motivational balance, manifested in relatively equal attention being paid to the different personal needs. A recent development of this theory has been the proposal of the *extreme personality* construct (Szumowska et al., 2023), understood as an individual’s tendency to enter states of motivational imbalance, which in turn gives rise to extreme behaviors, feelings, and cognitions. In a set of studies aimed at validating an *extreme personality scale* capturing these tendencies, Szumowska et al. (2025) found that motivational imbalance was directly related to engagement in extreme manifestations in several domains, including extreme dieting, religious practices, substance use, criminal proneness, and emotional reactions to stressful events.

The present study aims to understand why some people might be more prone to showing a more extreme personality, and thus a motivational imbalance, while others might seem more “balanced.” To achieve this goal, we tested whether variables that prior research has found to be associated with extremism, such as significance quest (Kruglanski et al., 2014), collective narcissism (Golec De Zavala and Lantos, 2020), or the willingness sacrifice for one’s values (Bélanger et al., 2014) or his/her group of reference (Gómez et al., 2021), were associated to different levels of extreme personality. Additionally, we tested a proposal for the existence of a motivational mechanism that can lead to the formation of an extreme personality based on the mediation effect that collective narcissism and the willingness to make sacrifices for one’s values or group of reference might have on the relationship between personal significance and the former.

It is relevant to highlight that extreme personality has been conceptually conceived in the manner of a “personality trait,” but Cervone (2021) proposes focusing on *personality coherence* rather than merely on the “static” conceptualization of traits, the more hegemonical viewpoint since the success of the Big Five personality model (Cervone, 2021). As indicated, Szumowska et al. (2023) proposal emphasizes the *motivational* aspect of extreme personality, highlighting from its initial definition the openness of its change depending on individual circumstances (external and internal). This is also in line with Kreitler’s (2018) perspective on personality traits, where they are defined as *patterns of assigned meaning to tendencies*. Therefore, from here onward, it is important to keep in mind this perspective, which will be the basis of the current research.

The will to matter: personal significance

Every human being strives for significance; but people always make mistakes if they do not see that their whole significance must consist in their contribution to the lives of others.

Alfred Adler, *What Life Should Mean to You* (Adler, 1931)

There is already a solid scientific research corpus that links extremist behaviors and beliefs with the need for personal significance (Kruglanski et al., 2009). According to significance quest theory (SQT; Kruglanski et al., 2022), the need for personal significance is conceptualized as the will to be someone, to matter, and to have social worth—typically satisfied by a sense of attaining the values one shares with significant others (Kruglanski et al., 2022). While this need for significance is universal, how it is satisfied depends on the sociocultural context or the reference group in which one’s values are entrenched (Kruglanski et al., 2022), along with other personal factors such as personality traits—especially low openness to experience and high conscientiousness (Altungy et al., 2025). When individuals face a perceived loss of significance, anticipate the threat of such a loss, or identify opportunities to increase significance, they

might be motivated to seek ways to restore it (i.e., to restore their social worth) through a motivational state referred to as the “quest for significance” (Kruglanski et al., 2022). Consequently, significance loss is the result of diverse negative experiences, such as perceived humiliation, discrimination, group conflict, or personal loss (for an overview, see Da Silva et al., 2024). From a theoretical perspective, personal significance comprises a “quest for significance” (a motivational process that is characterized by individual differences in the strength of pursuing personal meaning—significance) and “significance loss” (the immediate experience of a significant decrease in one’s personal meaning due to recent experiences that have been interpreted as a threat to one’s self-value). This trait–state differentiation is similar to other psychological constructs such as anxiety (Spielberg, 1985). These distinctions are measured using specific instruments—the Quest for Significance Scale (Molinario et al., 2021) and the Significance Loss Questionnaire (Kruglanski et al., 2022), respectively, with the items within each structure focusing on the differential aspects of each dimension.

It was precisely the development of SQT that served as the basis for the so-called 3N model (Kruglanski A. et al., 2018; Kruglanski et al., 2022), which suggests that there are three components that influence violent extremism: need, narrative, and network. This proposal was recently supported empirically by Da Silva et al. (2024) and Di Cicco et al. (2025). Briefly diving into the model, the need for personal significance represents the dominant need that underlies violent extremism (Kruglanski A. et al., 2018); the narrative is that the ideology held by the individual, which provides a sense of self-confidence that helps to define the goals to pursue in the quest for significance, facilitates a perceived understanding of the surrounding world (Kruglanski A. et al., 2018); and the network refers to those who subscribe to that common narrative (typically significant others, i.e., relatives, close friends, or colleagues) who serve as an epistemic authority (Kruglanski et al., 2005) and who lead individuals to perceive the violence-justifying narrative as morally acceptable (Kruglanski A. et al., 2018).

By this point, the keen reader will understand that social references are a key aspect of both significance quest activation and of its restoration/increase. These, on an individual level, risk the fostering of commitment with violent antisocial behaviors (from political violence to terrorism; Di Cicco et al., 2025; Webber and Kruglanski, 2016) if regarded as effective for restoring/increasing one’s significance, affecting societal cohesion, and increasing polarization, undermining the health of democratic systems (Brooks and Weber, 2022; Langenkamp, 2025; Moyano et al., 2024).

This is not surprising, as it is well-known that we humans are social beings by nature (Brewer, 2004). Part of that social nature makes us particularly prone to adopt in-group vs. out-group dynamics that, in some cases, might create a feeling of superiority of the group the individual belongs to (De Zavala et al., 2013). According to the need-for-significance theory, when this need is activated, individuals often undergo a collectivistic shift—that is, they begin to adopt more collective-oriented views. This process may

help explain the link between the need for significance and collective narcissism.

Collective narcissism

Such is the city for whose sake these men nobly fought and died; they could not bear the thought that she might be taken from them; and every one of us who survive should gladly toil on her behalf.

Thucydides, Pericles’ Funeral Oration

Collective narcissism (also sometimes known as narcissistic in-group positivity) is traditionally defined as an attitudinal orientation in which one’s in-group is perceived as powerful and grandiose, an image that is expected to be respected and shared by those outside of the group; that is there is an expectation of external recognition of that grandiosity (Golec De Zavala et al., 2016).

Some authors (e.g., Cichocka, 2016) have linked this conceptualization to the psychoanalytic tradition that understands collective narcissism as a compensatory idealization of one’s in-group (Adorno, 1963; Fromm, 1973). This understanding of collective narcissism is analogous to the individual narcissism definition used in clinical psychology, where the narcissistic subject is characterized by “a pervasive pattern of grandiosity (in fantasy or behavior), a constant need for admiration, and a lack of empathy, beginning by early adulthood and present in a variety of contexts”—that is, a grandiose sense of self-importance, a belief that he/she is special, a sense of entitlement, or a need for excessive admiration (American Psychiatric Association, 2022, p. 761). From this perspective, collective narcissism could be conceived as a collective shift of these individual narcissistic reactions. However, it is important to distinguish collective narcissism (the set of superiority beliefs in in-group greatness contingent to external validation; Golec De Zavala et al., 2016) from secure in-group identity, a humble positive perception for the in-group (De Zavala et al., 2013), which is not the focus of the present research.

In broad contexts, collective narcissism has proved to be positively correlated with other excluding identities, such as fierce nationalism (Cichocka and Cislak, 2020) and conspiracy groups (Cichocka et al., 2016), as well as with higher readiness to aggression under specific circumstances (Kruglanski et al., 2023). Previous studies also demonstrate that collective narcissism is closely related to problematic outcomes in intergroup relations and in the arena of politics (Cichocka and Cislak, 2020). All of these attitudes and/or behaviors could be understood to be “extreme” (Cichocka et al., 2022).

Additionally, research in the scientific literature shows that there seems to be a strong relationship between narcissistic traits (collective or individual) and people’s readiness to make great sacrifices (Harris et al., 2023).

Sacrifice for the values and the group

If there is a choice, a great sacrifice will be preferred to a small one, because we compensate ourselves for a great sacrifice with self-admiration, and this is not possible with a small one.

Friederich Nietzsche, Aphorism 620, *Human, All Too Human*

Sacrifice—or, more precisely, self-sacrifice—is a variable that has been widely studied and has proved to have a strong relationship with extremism and its associated processes (Gómez et al., 2022; Kruglanski et al., 2009; Kruglanski A. W. et al., 2018). Self-sacrifice is a common issue in the history of humanity. We can find it in religious texts (e.g., “Greater love has no one than this, that someone lay down his life for his friends,” John 15:13, English Standard Version), literature (from ancient Homer’s Ulysses to Doctor Bernard Rieux in Camus’s *The Plague*), political actions (e.g., Ghandi’s hunger strikes or Medgar Evers’ fight for Black civil rights), and even in environmental movements (for instance, Ken Saro-Wiwa’s environmental activism). These examples show how individuals have been willing to make the ultimate sacrifice—to give up their life and/or their wellbeing—for what they perceive to be a greater cause. Before continuing, we clarify what is understood as a sacrifice and what the scientific literature says about the reasons for individuals to sacrifice everything in defense of their values and/or their group.

According to Halbertal (2012), self-sacrifice for a cause can be understood as the action by which an agent willingly gives up something important to him/her on behalf of a higher cause. Similarly, Bélanger et al. (2014) define self-sacrifice as the willingness to suffer and die for a cause. It is important to highlight that to consider something to be a sacrifice, the action must be voluntary, be informed, and reduce (partially or completely) one’s self-wellbeing for the sake of an external value or other people, even if it eventually results in benefit for the agent in the long term (Heathwood, 2011).

Regarding what drivers might underlie such extreme behavior, identity fusion—the extreme feeling of oneness with a group (Swann and Buhrmester, 2015)—has been widely reported in the scientific literature to be a key factor that drives self-sacrifice (Whitehouse, 2018a). This identity fusion can be also understood from a motivational framework, where the desire to belong becomes the central *intrinsic motivation*, which manifests as a total means–ends fusion (Kruglanski A. W. et al., 2018). In this context, fusion with the group becomes so important that the characteristics derived from the pertinence to the group become central to the personal identity of the individual (Whitehouse, 2018a), becoming therefore a core aspect of one’s personal significance (Kruglanski et al., 2022). Thus, when a threat is presented toward the group, the individual is willing to make high-cost sacrifices (Gómez et al., 2021; Kruglanski et al., 2009). In this regard, the 3N model (Webber and Kruglanski, 2016) proves that when a personal significance quest is activated, the fusion group in concordance with the perception of the group’s superiority (collective narcissism) paves the way for extremism (Da Silva et al., 2024). The same process could perhaps underlie non-violent processes (as some

researchers have started to point out; Altungy et al., 2025; Di Cicco et al., 2025) and personal dispositions (such as in the *extreme personality* construct).

But self-sacrifice might be triggered not only by group fusion, but also by a dire commitment to one’s values. In this regard, Gómez et al. (2022) point out how the existence of fusion with values, as well as feelings of injustice or discrimination, can lead to radicalization and a willingness to engage in acts of self-sacrifice. Similarly, in experimental research that analyzed the role of sacred values, moral conviction, and identity fusion, Martel et al. (2021) found that when individuals perceive threats to the validity of one’s self-views (personal values), this might amplify extreme behaviors. Again, from the 3N model perspective (Webber and Kruglanski, 2016), the ideological component (the values) would comprise the “third N”—the narrative that prescribes what is acceptable and what is worth defending at all costs (which might be prosocial or antisocial in its nature)—has proved to be closely linked to an individual’s willingness to make sacrifices (Bélanger et al., 2018).

Current research and hypotheses

Although extreme personality traits are relatively stable dispositions, they are not fixed and can be shaped by sustained motivational and social experiences. In the present study, we conceptualize extreme personality as the downstream expression of motivational dynamics—specifically, the pursuit or loss of personal significance—and social-psychological mechanisms, such as collective narcissism and willingness to sacrifice. Theoretical frameworks, such as SQT (Kruglanski et al., 2014; Kruglanski A. et al., 2018), propose that experiences related to significance threats or pursuits can gradually foster enduring tendencies toward extreme beliefs or behaviors. Similarly, motivated social cognition perspectives suggest that underlying psychological needs, such as the need for control or significance, can influence the development of stable ideological or personality patterns (Jost et al., 2003). Empirical evidence supports this view: repeated engagement in significance-seeking behaviors is associated with greater adoption of extreme positions, and longitudinal research indicates that personality traits can shift in response to persistent environmental pressures or motivational states (Roberts et al., 2006; Caspi et al., 2005). Modelling extreme personality as the outcome therefore allows us to examine whether these predictors and mediators are associated with the development or expression of trait-like tendencies toward extreme beliefs or behaviors, testing theoretically informed pathways linking motivational drivers and social processes to enduring personality characteristics.

It is important to highlight here that, even though the analysis of the indicated variables is focused at an individual level, this is also meaningful from a societal perspective. After all, a society is the group of individuals, who, through their individual decisions and behaviors, jointly shape that society. It is true that, as Aristotle stated, “the whole is greater than the sum of its parts.” However, here are the individual parts who make the decisions that constantly shape and constitute that whole. Therefore, the relationship between society and the individual is bidirectional: individual

decisions (prosocial, i.e., helping others, tolerant behavior, peer-support, or antisocial, i.e., selfishness, violence, or breaking norms) have a positive/negative toll on society and societal norms that subsequently affect the individual's references, personality, and values. Therefore, obtaining a more detailed understanding of the relationship between the variables that might underlie extreme personalities could be a first step toward providing effective recommendations that might help prevent violent behaviors that hamper social life, while also offering foundations for group-based interventions.

Consequently, the present research aims to examine how different motivational factors might be contributing to the development of extreme personality profiles. Specifically, it analyses the role of the personal search for significance (both as a stable tendency and as a response to a perceived loss), the belief in in-group superiority, and the willingness to self-sacrifice for one's values or group of reference. Beyond establishing these associations, the study aims to clarify the psychological mechanisms through which these dynamics foster extremity.

Based on these goals, the hypotheses tested in the present research are as follows:

- H₁: Quest for significance, significance loss, collective narcissism, sacrifice for one's value, and sacrifice for one's group will be positively related to extreme personality, both in the general population and prison samples.
- H₂: Collective narcissism and the sacrifice for one's highest value will mediate the relationship between quest for significance/significance loss and extreme personality, both in the general population and prison samples.

These hypotheses, if proven, would provide initial evidence of the underlying mechanisms behind extreme personality, given the correlational nature of the data.

These hypotheses were tested in both a general population and a prison sample, to test whether the hypothesized mechanisms underlying extreme personality characterize individuals with a history of extreme attitudes and/or behaviors (i.e., criminal activities) vs. a mechanism that characterizes the general population.

Method

Participants

An initial power analysis was conducted using G*Power 3.1.9.7[®] (Düsseldorf University) to determine the minimum sample size required for the statistical analyses necessary to achieve the study goals. For linear multiple regression analyses (which, as it will be explained, were the main analyses undertaken), a fixed-model, single-regression coefficient was used with an effect size f^2 of 0.05 (partial R^2 of 0.05), an alpha of 0.05, and four predictors, the minimum sample size is 218 participants.

Two different samples were used in the present research: one from the Spanish general population, and another from a sample of Spanish prison inmates. The latter was collected by Gómez

et al. (2022) as part of their research (see that publication for details of the sample recruitment process); the present research included those inmates who had not been convicted as terrorists. Therefore, within the context of their investigation on extremism differences among prison inmates, depending on the reason for their imprisoning, they administered the instruments (among others relevant for their purposes) that are part of the present research. Then, 2 years later, it was decided that it would be useful to expand on those findings, especially the potential generalizability to the general population. Therefore, a comparison sample from the Spanish general population that could serve for contrasting purposes in different studies (the one presented here being one of them) was recruited. Thus, the composition of the general population sample in the present research was conditioned to the characteristics of the prison sample collected by Gómez et al. (2022) to allow adequate comparisons that would not include any sociodemographic potential bias. This is the reason why the study sample shows an acute gender representativity bias (as the prison sample was comprised mainly of males). As indicated in Table 1, the sociodemographic characteristics of both samples are quite similar (especially in terms of mean age, gender, and civil status).

The general population sample comprised 328 participants (92.4% male; $M_{\text{age}} = 31.35$ years; $S.D._{\text{age}} = 9.10$) recruited through the Prolific[®] platform. Of the participants, 85.3% were born in Spain, while the remaining 14.7% were born in other countries (mainly in Latin America, i.e., Argentina, Venezuela, Colombia), although all of them had Spanish nationality. At the time of their participation, 55.2% were single, and high school was the highest education level reached by 39.0% of them.

The prison sample comprised 222 participants (95.5% male; $M_{\text{age}} = 35.91$ years; $S.D._{\text{age}} = 12.84$) who recruited in several Spanish prisons (no further details can be provided in this regard to guarantee anonymity). A total of 56.3% were born in Spain, while the remaining 43.7% were born in other countries (mainly in Latin America, i.e., Dominican Republic, Ecuador), 54.4% were single at the time of their participation, and 81.5% recorded primary or secondary as their highest education level.

Instruments

For testing the hypotheses of the present research, the following instruments were used:

Sociodemographic questions. *Ad hoc* questions were used for assessing participants age, gender, civil status, highest level of education, and country of birth.

Extreme personality. Twelve items on the extreme personality scale (EPS; Szumowska et al., 2025) were used to measure thoughts, feelings, and behaviors related to radical goal pursuits and that comprise a general extreme personality profile (Cronbach's $\alpha_{\text{general-population}} = 0.78$; $\alpha_{\text{prison-sample}} = 0.80$). Examples of those items are "My life is usually dominated by one main pursuit/desire" or "When I decide on something, I go for it like my life depends on it." Items are answered using a 7-point Likert scale from 1 (definitely disagree) to 7 (definitely agree). The psychometrical assessment carried out by Szumowska et al. (2025) indicated that the EPS has a one-factor solution (confirmed using both

TABLE 1 Sociodemographic description of the samples.

Variables		Values*	
		General population	Prison sample
N		328	222
Mean age (S.D.)		31.35 (9.10)	35.91 (12.84)
Gender (% male)		92.4	95.5
Civil status (%)	Single	55.2	54.4
	Married/living with partner	34.1	24.2
	Divorced/separated	0.6	19.2
	Widow/er	0	1.1
	Civil couple	8.5	1.1
	Rather not say	1.5	0
Education (%)	None	0.3	14.9
	Primary or secondary	28.4	81.5
	High school	39.0	1.2
	Bachelor's degree	25.0	2.4
	Master or PhD	7.3	0
Where you were born (%)	Spain	85.3	56.6
	Argentina	6.1	0.5
	Romania	0.3	1.4
	Mexico	1.2	0.5
	Dominican Republic	0.3	10.4
	Colombia	1.8	5.9
	Ecuador	0.6	10.9
	Peru	0.3	0.5
	Venezuela	3.1	0.5
	Uruguay	0.3	0
	Chile	0.3	0
	Paraguay	0.3	0.5
	Other	0	12.3

*All values are percentages if there is no further indication.

EFA and CFA). Test-retest reliability, along with convergent and discriminant validity, proved to be good and consistent through a cross-cultural set of samples.

Quest for Significance questionnaire. Five items from the Quest for Significance scale (QFS; Molinaro et al., 2021) were used to measure an individual's trait quest for significance; that is individual's need to feel important, respected, and valued (Cronbach's $\alpha_{\text{general-population}} = 0.81$; $\alpha_{\text{prison-sample}} = 0.77$). Examples of those items are "I wish I could be more respected" or "I wish I meant more to other people." Participants rated their agreement or disagreement with each item on a Likert scale from 0 (do not agree at all) to 6 (very strongly agree).

Significance loss questionnaire (Kruglanski et al., 2022). This questionnaire is designed to measure general feelings of significance loss. It consists of six items that participants have to respond to using a Likert scale from 1 (do not agree at all) to 7 (very strongly agree). Examples of those items are "I feel humiliated" and "I feel insignificant." In the present study, internal consistency for this measure was excellent and good for the two sample populations (Cronbach's $\alpha_{\text{general-population}} = 0.90$; $\alpha_{\text{prison-sample}} = 0.79$).

Collective narcissism scale (De Zavala et al., 2009). This scale starts by asking participants for their main group of reference to which they feel more attached/close. Participants then have to answer five questions using a 7-point Likert scale rating from 1 (completely disagree) to 7 (completely agree). Examples of the questions are "My group deserves a special treatment" or "I really get angry when others criticize my group." In the present study, internal consistency for this measure was good (Cronbach's $\alpha_{\text{general-population}} = 0.74$; $\alpha_{\text{prison-sample}} = 0.88$).

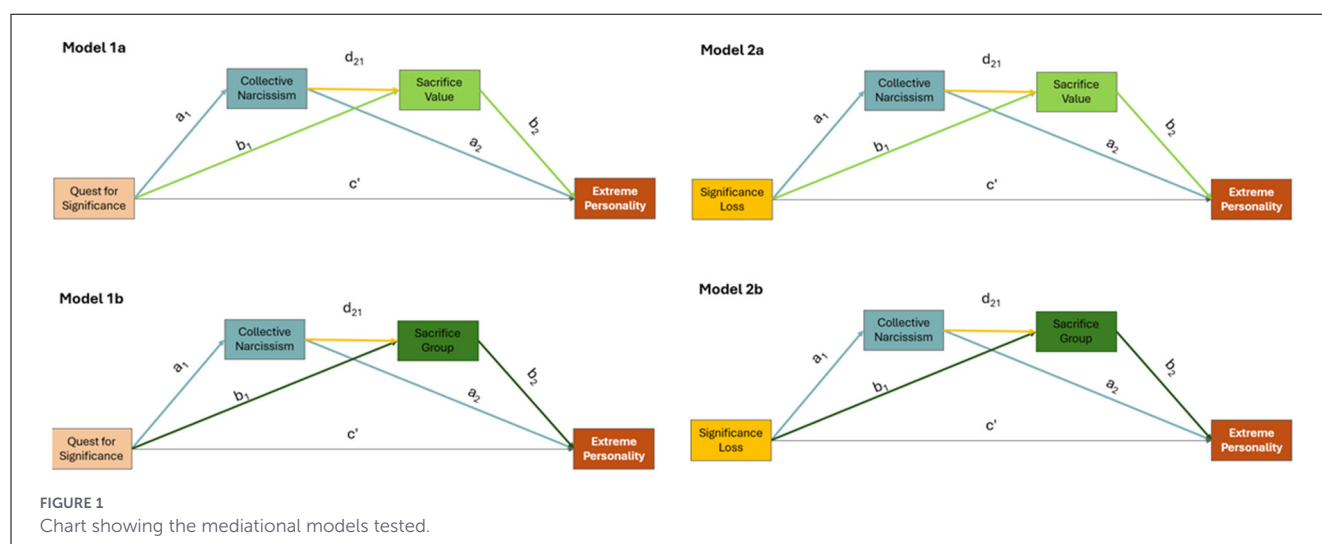
Sacrifice for values and sacrifice for the group. To assess participants' willingness to make sacrifices to defending their values and/or group of reference we adapted a scale by Gómez et al. (2022), which was originally designed to test six sacrifices that were considered as extreme in prison inmates but that could also be applied to the general population. Participants were first asked to write their most important value and then report the extent to which they were willing to sacrifice for it using five items of the *sacrifice for values* scale (Cronbach's $\alpha_{\text{general-population}} = 0.82$; $\alpha_{\text{prison-sample}} = 0.93$). Similarly, participants were asked to write down their most important group and report their willingness to sacrifice for it using five items from the *sacrifice for the group* scale (Cronbach's $\alpha_{\text{general-population}} = 0.89$; $\alpha_{\text{prison-sample}} = 0.87$).

Procedure

The study follows a cross-sectional design. All data were collected using the Qualtrics® survey platform, available only for Spanish participants, who were recruited using the snowball procedure. In exchange for their participation, individuals entered a lottery for winning a 10€ voucher that could be used in an online market platform. Participants begin their participation by reading the informed consent document with all the details of their involvement in the study (see Annex II). If individuals agree to participate, they first had to answer some sociodemographic questions before moving to the questionnaires.

Questionnaires were presented to participants in the same order as presented in the Instruments section, with an explanation for each one at its beginning. The last part of the study consisted of a short debriefing. For further details regarding the procedure followed for selecting the prison sample, please read the information provided by Szumowska et al. (2025).

Prison sample data were collected by Gómez et al. (2022) having the IRB approval of the Spanish Interior Ministry (see Gómez et al., 2022, p. 49–56).



Statistical analyses

All analyses were performed using the Statistical Package for the Social Sciences (SPSS-28[®], IBM). Initially, frequency and descriptive analyses were conducted to study the sociodemographic characteristics of the sample and to check the normality assumption of all data (skewness and kurtosis values within the ± 2 range; Kim, 2013). All analyses were run for the general population and prison samples separately. Then, bivariate correlations were used to test the relationships between the variables.

Following the correlation analyses, a multiple hierarchical linear regression was conducted with extreme personality as the dependent variable, and quest for significance, significance loss, collective narcissism, sacrifice for values, and sacrifice for the group as predictors. Age was also included as a control variable (gender, although it is usually included also as a control variable, was not considered given the predominance of males in the sample). The reason for opting for a hierarchical regression model was to obtain information regarding the percentage of the extreme personality variance score that is explained by the sequential addition of each variable.

Last, two serial mediation models (up to four analyses in total) were conducted using Hayes' PROCESS Macro v4.2 (Model 6; Hayes, 2022) with 5,000 bootstrapped samples. Specifically, the analyses tested whether the hypothesized effects of quest for significance (Model 1) and significance loss (Model 2) on levels of extreme personality were sequentially mediated by collective narcissism and (a) willingness to sacrifice for a value (Models 1a and 2a) or (b) willingness to sacrifice for the group (Models 1b and 2b). The tested serial mediation models are presented in Figure 1. Evidence of mediation was considered present when the 95% bootstrap confidence intervals for the indirect effects did not include zero (Preacher and Hayes, 2008). All analyses were performed in SPSS, with statistical significance set at $p < 0.05$.

Results

Sociodemographic characteristics of the sample are reported in Table 1. Skewness and kurtosis analyses parameters were also analyzed, to test whether data were normally distributed (a requirement for regression analyses). For all the key variables in the research, both parameters were between ± 1 (down from the ± 2 range proposed by Kim, 2013), proving a normal distribution of the data.

Correlations

As hypothesized, Pearson's r correlation for the general population sample showed that extremist personality was significantly and positively correlated with quest for significance ($r = 0.178$; $p = 0.001$), significance loss ($r = 0.165$; $p = 0.003$), collective narcissism ($r = 0.199$; $p < 0.001$), sacrifice for one's main value ($r = 0.206$; $p < 0.001$), and sacrifice for one's group of reference ($r = 0.17$; $p = 0.002$) (see Table 2). In addition, the two measures of personal significance showed a medium correlation ($r = 0.321$; $p < 0.001$), and the same for the two self-sacrifice measures ($r = 0.467$; $p < 0.001$). Even though the correlation between these variables is medium, they are in both cases below 0.5, indicating a low probability of problematic collinearity between them (something that will be subsequently further tested in the regression models via the variance inflation factor).

Regarding the prison sample, it is interesting to see that only the two measures for the personal significance showed a statistically significant correlation with the extreme personality measure ($r = 0.438$; $p < 0.001$ for quest for significance; $r = 0.290$; $p < 0.001$ for significance loss), along with the perception of in-group superiority (or collective narcissism; $r = 0.314$; $p < 0.001$). Neither measure for willingness to sacrifice showed a significant correlation with the extreme personality measure in the prison sample, which implies that these variables will not be included in the initially considered

TABLE 2 Correlation analysis results.

Variables	<i>M (SD)</i>	1	2	3	4	5	6
Extreme personality (1)	25.71 (7.18)	–					
	31.80 (10.86)						
Quest for significance (2)	16.05 (5.68)	0.178***	–				
	14.45 (8.56)	0.438***					
Significance loss (3)	9.95 (7.67)	0.165**	0.321***	–			
	11.20 (8.78)	0.290***	0.394***				
Collective narcissism (4)	16.51 (5.62)	0.199***	0.351***	0.090	–		
	8.00 (9.40)	0.314***	0.165	0.206*			
Sacrifice value (5)	17.38 (6.54)	0.206***	0.081	0.136*	0.134*	–	
	7.23 (10.18)	0.107	0.023	0.134	0.572***		
Sacrifice Group (6)	13.90 (7.40)	0.170**	0.084	0.068	0.369***	0.467***	–
	4.72 (7.71)	0.017	0.026	0.081	0.563***	0.681***	

SD: standard deviation; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. For each variable, values on the top row correspond to the general population sample, and those on the bottom to the prison sample.

regression models. All the remaining relevant correlations for both samples can be found in Table 2.

Regressions

As indicated, the next set of statistical analyses consisted of the creation of multiple hierarchical linear regression models for testing the first research hypothesis. The criteria variable in the two regression models was the total score on the EPS, with the predictors included in the following order: (1) quest for significance/significance loss; (2) collective narcissism; (3) sacrifice for one's values and sacrifice for one's group; (4) age.

For the general population sample, for the first model, which had quest for significance as a predictor, the results indicated that models one, two, and three were statistically significant (Table 3). The third model, which included four predictors, explained 7.1% of the score variance in the EPS ($R^2_{\text{adjusted}} = 0.071$; $F = 5.61$; $p = 0.004$), the value of Durbin–Watson statistic being 1.984 (≈ 2), which indicates an almost perfect absence of autocorrelation. Within this model, sacrifice for one's value was the most important variable ($\beta = 0.16$; $r_{\text{partial}} = 0.15$; $p = 0.008$), followed by the participants quest for significance ($\beta = 0.11$; $r_{\text{partial}} = 0.11$; $p = 0.047$). Collective narcissism was not included in the model by a narrow margin ($\beta = 0.12$; $r_{\text{partial}} = 0.11$; $p = 0.054$). However, when sacrifice for one's group is removed from the analyses, collective narcissism is included in the model ($\beta = 0.13$; $r_{\text{partial}} = 0.13$; $p = 0.022$), indicating that part of its explanatory power is closely related to it. Last, these models indicated that a participant's willingness to sacrifice for their group of reference had no significant relation to extreme personality scores.

For the second model with significance loss as predictor, the results indicated that models one, two, and three were statistically significant (Table 4). The third model, which included the four predictors, explained 7.7% of the score variance in the EPS ($R^2_{\text{adjusted}} = 0.077$; $F = 4.73$; $p = 0.009$), with a Durbin–Watson statistic value of 2.003 (≈ 2), which indicates an almost perfect absence of autocorrelation. Within this model, collective narcissism was the most important variable ($\beta = 0.15$; $r_{\text{partial}} = 0.15$; $p = 0.009$), followed by a participant's willingness to sacrifice for their central value ($\beta = 0.15$; $r_{\text{partial}} = 0.14$; $p = 0.013$), and a participant's feeling of significance loss ($\beta = 0.13$; $r_{\text{partial}} = 0.14$; $p = 0.014$). As in the previous regression analyses, a participant's willingness to sacrifice for their group of reference did not show a significant relation to extreme personality scores.

As previously indicated, for the prison sample, given the lack of significant correlations between the extreme personality measure and willingness to sacrifice (either based on one highest regarded value or group of reference), these two variables were excluded from the hierarchical linear regression analyses.

For the first model, which had quest for significance as a predictor, the results indicated that models one and two were statistically significant (Table 5). The second model, which included quest for significance and collective narcissism as predictors, explained 25.2% of the score variance in the EPS ($R^2_{\text{adjusted}} = 0.252$; $F = 10.84$; $p = 0.001$), with a Durbin–Watson statistic value of 2.219, which indicates lack of autocorrelation. Within this model, quest for significance was the most important variable for explaining extreme personality ($\beta = 0.41$; $r_{\text{partial}} = 0.42$; $p < 0.001$), followed by collective narcissism ($\beta = 0.25$; $r_{\text{partial}} = 0.28$; $p = 0.001$).

The results from the second regression model for the prison sample, which had significance loss as predictor, indicated that models one, two, and three were statistically significant (Table 6). The third model, which included significance loss, collective narcissism, and age as predictors, explained 17% of the score variance in the EPS ($R^2_{\text{adjusted}} = 0.170$; $F = 7.53$; $p = 0.007$), with a Durbin–Watson statistic value of 2.093, which indicates lack of autocorrelation. Within this model, age was the most important variable for explaining extreme personality ($\beta = -0.23$; $r_{\text{partial}} = -0.24$; $p = 0.007$), followed by significance loss ($\beta = 0.22$; $r_{\text{partial}} = 0.22$; $p = 0.007$).

TABLE 3 Multiple linear hierarchical regression models for extreme personality—QfS (general population sample).

Model	Predictors	Standardized β	r_{partial}	p	Tolerance	IFV
Model 1	QfS	0.173	0.173	0.002	1.000	1.000
	$R^2_{\text{adjusted}} = 0.027; F = 10.004; p = 0.002$					
Model 2	QfS	0.118	0.113	0.042	0.872	1.146
	Col. Narcissism	0.153	0.145	0.009	0.872	1.146
	$R^2_{\text{adjusted}} = 0.045; F = 6.967; p = 0.009$					
Model 3	QfS	0.114	0.110	0.047	0.865	1.156
	Col. Narcissism	0.119	0.108	0.054	0.754	1.327
	S. Value	0.162	0.147	0.008	0.777	1.287
	S. Group	0.038	0.033	0.557	0.683	1.464
	$R^2_{\text{adjusted}} = 0.071; F = 5.606; p = 0.004$					
Model 4	QfS	0.098	0.094	0.091	0.845	1.184
	Col. Narcissism	0.141	0.125	0.025	0.727	1.376
	S. Value	0.169	0.154	0.006	0.773	1.293
	S. Group	0.030	0.026	0.645	0.679	1.472
	Age	−0.098	−0.100	0.074	0.953	1.049
	$R^2_{\text{adjusted}} = 0.077; F = 3.206; p = 0.074$					

TABLE 4 Multiple linear hierarchical regression models for extreme personality—significance loss (general population sample).

Model	Predictors	Standardized β	r_{partial}	p	Tolerance	IFV
Model 1	Sig. loss	0.171	0.171	0.002	1.000	1.000
	$R^2_{\text{adjusted}} = 0.026; F = 9.733; p = 0.002$					
Model 2	Sig. loss	0.154	0.156	0.005	0.991	1.009
	Col. narcissism	0.181	0.183	<0.001	0.991	1.009
	$R^2_{\text{adjusted}} = 0.056; F = 11.213; p < 0.001$					
Model 3	Sig. loss	0.134	0.137	0.014	0.975	1.025
	Col. narcissism	0.152	0.164	0.009	0.858	1.165
	S. value	0.152	0.138	0.013	0.769	1.300
	S. group	0.031	0.027	0.634	0.687	1.455
	$R^2_{\text{adjusted}} = 0.077; F = 4.729; p = 0.009$					
Model 4	Sig. loss	0.116	0.117	0.036	0.936	1.068
	Col. narcissism	0.167	0.159	0.004	0.836	1.197
	S. value	0.160	0.145	0.009	0.764	1.309
	S. group	0.024	0.021	0.708	0.685	1.461
	Age	−0.089	−0.090	0.106	0.938	1.067
	$R^2_{\text{adjusted}} = 0.082; F = 2.623; p = 0.106$					

0.23; $p = 0.008$) and collective narcissism ($\beta = 0.18$; $r_{\text{partial}} = 0.18$; $p = 0.037$).

Last, the mediation models were run following Hayes' (2022) proposal that could help in providing a better understanding of how the key variables of the present research might be related to extreme personality. Initially, four mediation models were proposed. However, given the results of the regression analyses, for the general population sample, mediation models 1b and 2b

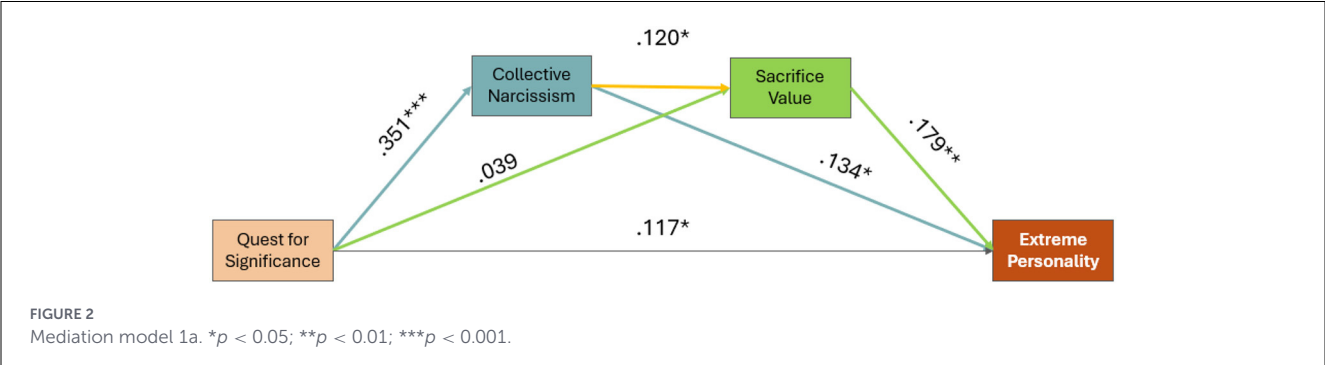
were discarded, as willingness to sacrifice for one's group was not included in either model. For the prison sample, mediation models as they were initially conceived were discarded because neither example of willingness to sacrifice showed significant correlations with extreme personality. Therefore, the mediation model was shifted from 6 to 4, with quest for significance as the predictor (X). The results (see Figure 2) indicated that the relationship between an individual's quest for significance and their extreme personality

TABLE 5 Multiple linear hierarchical regression models for extreme personality—QfS (prison sample).

Model	Predictors	Standardized β	r_{partial}	p	Tolerance	IFV
Model 1	QfS	0.450	0.450	<0.001	1.000	1.000
	$R^2_{\text{adjusted}} = 0.197; F = 33.529; p < 0.001$					
Model 2	QfS	0.406	0.423	<0.001	0.970	1.031
	Col. narcissism	0.251	0.276	<0.001	0.970	1.031
	$R^2_{\text{adjusted}} = 0.252; F = 10.842; p = 0.001$					
Model 3	QfS	0.371	0.378	<0.001	0.878	1.139
	Col. narcissism	0.219	0.236	0.006	0.894	1.119
	Age	−0.118	−0.315	0.156	0.813	1.230
	$R^2_{\text{adjusted}} = 0.258; F = 2.036; p = 0.156$					

TABLE 6 Multiple linear hierarchical regression models for extreme personality—significance loss (prison sample).

Model	Predictors	Standardized β	r_{partial}	p	Tolerance	IFV
Model 1	Sig. Loss	0.292	0.292	<0.001	1.000	1.000
	$R^2_{\text{adjusted}} = 0.078; F = 12.189; p < 0.001$					
Model 2	Sig. Loss	0.239	0.244	0.005	0.953	1.050
	Col. Narcissism	0.244	0.249	0.004	0.970	1.031
	$R^2_{\text{adjusted}} = 0.129; F = 8.576; p = 0.004$					
Model 3	Sig. Loss	0.220	0.232	0.008	0.946	1.057
	Col. Narcissism	0.178	0.182	0.037	0.877	1.140
	Age	−0.229	−0.235	0.007	0.902	1.109
	$R^2_{\text{adjusted}} = 0.170; F = 7.529; p = 0.007$					



profile was partially mediated in sequence by loss as predictors (X), respectively, with collective narcissism followed by willingness to sacrifice for one’s values.as mediator (M) and extreme personality as criteria (Y) in both cases. This mediation was partial as the relationship between the X and Y variables in the model remained statistically significant (c'). The detailed information regarding the mediation paths is available in Table 7.

As can be appreciated from the results in Table 7, the confidence interval (CI) for two of the three different mediation paths met Preacher and Hayes’ (2008) condition that the 95% CIs must not cross zero in order to satisfy the criteria for mediation. Therefore, the results obtained in this mediation model

indicate that individuals’ trait pursuit for personal significance—quest for significance—increases their extreme personality profile (path c'). Also, independently considered, collective narcissism partially mediated the relationship between participants’ quest for significance and a higher extreme personality profile (path a_1a_2). Last, individuals’ quest for significance increased their perception of group superiority (higher collective narcissism), which subsequently also increased their willingness to sacrifice for their value of reference, partially mediating the relationship between quest for significance and extreme personality profile. These results clarify how the three key variables interplay to create the individual extreme personality profile, which is characterized

TABLE 7 Mediation analysis results—model 1a.

Mediation type	Effect	Estimate Standardization	SE	95% CI (a)	
				Lower	Upper
Indirect	QFS → collective narcissism → extreme personality	0.047	0.022	0.007	0.095
	QFS → sacrifice value → extreme personality	0.007	0.011	−0.013	0.031
	QFS → collective narcissism → sacrifice value → extreme personality	0.008	0.004	0.001	0.018

by those who strive for personal significance and who, accordingly, regard their group as superior, being more willing to make sacrifices for a value.

In relation to the second mediation model (2a) for the general population sample, which had significance loss as its predictor (X), the results reflected in Figure 3 indicated that participants' willingness to sacrifice for one's value partially mediated the relationship between the individual perceived significance loss and his/her extreme personality profile. This mediation was partial as the relationship between the X and Y variables in the model remained statistically significant (c'). The detailed information regarding the mediation paths is given in Table 8.

As can be appreciated in the results shown in Table 8, the CI of only one of the three different mediation paths met Preacher and Hayes' (2008) condition that the 95% CIs must not cross zero in order to satisfy the criteria for mediation. Therefore, the results obtained in this mediation model indicate that the individuals' perception of personal significance loss is related to a greater extreme personality profile (path c'). Also, independently considered, an individuals' willingness to sacrifice for his/her reference value partially mediated the relationship between the participants' perception of significance loss and a greater extreme personality profile (path b_1b_2). Last, the individuals' perception of significance loss did not increase their perception of in-group superiority (as happened with dispositional quest for significance). Therefore, when starting from one's feeling of significance loss, only the sacrifice for one's value mediates the direct relation that the former showed with the extreme personality profile.

Turning now to the prison sample, its first mediation model, which had quest for significance as the predictor (X), proved that collective narcissism (M) partially mediated (standardized indirect effect = 0.0436; $SE = 0.0243$; 95% CI = 0.0018–0.0962) the relationship between the activation of one's pursue of significance and his/her extreme personality profile ($c' = 0.4065$; standardized direct effect = 0.5324; $SE = 0.0997$; 95% CI = 0.3351–0.7296). The second mediation model, which had significance loss as the predictor (X), showed how collective narcissism (M) partially mediated (standardized indirect effect = 0.0530; $SE = 0.0305$; 95% CI = 0.0057–0.1217) the relationship between the immediate perception of personal significance loss and his/her extreme personality profile ($c' = 0.2388$; standardized direct effect = 0.2882; $SE = 0.1005$; 95% CI = 0.0894–0.4869). Both mediation models are represented in Figure 4.

In order to facilitate the reading of the results presented hitherto, and to contextualize them with the research hypotheses, Table 9 presents a summary of these results linked to the two initial hypotheses.

Discussion

There is a solid corpus of empirical evidence that links personal significance, perception of in-group superiority, and fusion with one's personal values and group to extreme attitudes and behaviors. Accordingly, these variables seem to be a promising starting point for coming to a better understanding of some possible underlying components of the recently proposed *extreme personality* construct. Gaining a deeper understanding of this construct might be also beneficial from a social perspective. Social polarization has become a major topic on which research has exponentially increased in recent years. This polarization has been linked to a decline in the health of democratic systems and institutions (McCoy et al., 2018), and to a higher risk of individuals becoming involved in violent behaviors (from political violence to domestic terrorism; Bove et al., 2025; Piazza, 2023). Increasing understanding of the extreme personality construct would provide the foundations for future research into how it might be related to social polarization and its associated effects.

The starting point of the present research was to provide initial insights into the recently proposed *extreme personality* construct (Szumowska et al., 2023, 2025). Overall, our findings suggest that individuals who strive for personal significance are more likely to regard their group as superior and, as a result, show greater willingness to make sacrifices for their values, contributing to the formation of an extreme personality profile in both the general population and a sample of prisoners.

For both the general population and prison samples, results indicated the importance that personal significance, both in its trait and state dimensions, has on the general extreme personality profile of individuals. Thus, those individuals who in their daily lives strive to attain higher recognition and personal value, as well as those who might have that urge more momentarily, will also score higher in the extreme personality trait. These results agree with previous research on personal significance and extreme attitudes and behaviors (Altungy et al., 2025; Da Silva et al., 2024; Kruglanski et al., 2022), which makes sense from a personality perspective—where any personality trait is understood to comprise a set of relatively stable patterns of behaviors, cognitions, and emotions in specific domains (Diener and Lucas, 2019).

Moreover, the results also showed that the presence of the perception of the superiority of one's in-group, a view of it as being mighty and grandiose, was closely related to a more acute extreme personality. This in-group superiority (in an excluding dimensionality) is usually paired with the expectation that those outside the group would also acknowledge that superiority (Golec De Zavala and Lantos, 2020). Therefore, in the event of a lack of

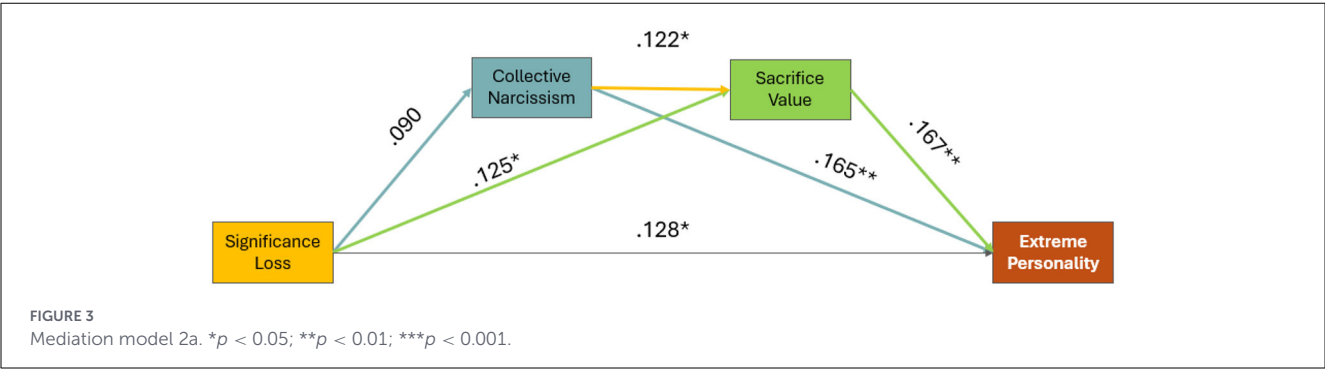
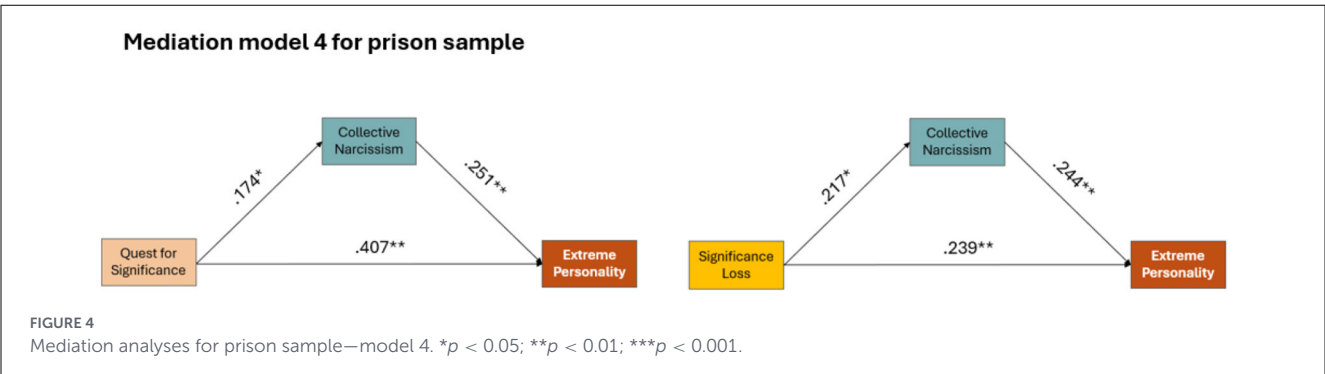


TABLE 8 Mediation analysis results—model 2a.

Mediation type	Effect	Estimate stand.	SE	95% CI (a)	
				Lower	Upper
Indirect	Sig. loss → collective narcissism → extreme personality	0.015	0.011	−0.004	0.038
	Sig. loss → sacrifice value → extreme personality	0.021	0.013	0.001	0.051
	Sig. loss → collective narcissism → sacrifice value → extreme personality	0.002	0.002	−0.001	0.006



recognition of that “superiority,” the results suggest that there is a higher chances that these individuals resort to extremist responses to assert their might.

Following in the analysis of the empirical support for our initial hypotheses, the results only partially backed the proposition in relation to the relationship of individuals’ willingness to sacrifice and extreme personality—and only in the case of the general population sample. Even though the existing scientific literature has proved the relationship between one’s willingness to make sacrifices for one’s core values and one’s group of reference and the presence of extremist attitudes and behaviors (Gómez et al., 2022; Kruglanski A. W. et al., 2018; Martel et al., 2021; Whitehouse, 2018a), the results of the present research demonstrate that this relationship is only maintained for the former in relation to extreme personality. One possible explanation of this might be that the present research, in contrast to previous studies (Martel et al., 2021; Whitehouse, 2018a), analyzed these two dimensions of willingness to sacrifice oneself along with collective narcissism. It is therefore possible that the explanatory power previously found on the willingness to self-sacrifice for one’s group over extremist attitudes and behaviors could actually refer to the narcissistic views of one’s group—meaning that what matters the most in this regard are these

supremacist views, that willingness to self-sacrifice for one’s group part of that narrative (but not something actually acknowledge as a real possibility—a bluff).

In addition, there are many cases in which one value might be closely related to group aspects (i.e., fidelity, respect, honor...), which would also explain why self-sacrifice for one’s group could not have been found as a significant variable in the models tested. Interestingly, in the prison sample, neither form of sacrifice was found to have a significant correlation with extreme personality. This might initially be surprising, as one may expect to see the opposite: a higher willingness to make sacrifices in those who are in prison (as, most probably, they are there at least partially for having made a great sacrifice at some point—although not necessarily a “prosocial” one). However, the experience of being deprived of one’s freedom, in addition to the reinsertion programmes for those leaving prison, might explain this lack of relationship and the remarkably lower scores that the prison sample showed in the two scales measuring willingness to sacrifice in comparison to the general population (as shown in Table 2)—once you know what the consequences of certain “sacrifices” might be, their value and appeal might drastically decrease. Gómez et al. (2022) offer a detailed, comprehensive explanation of this phenomenon.

TABLE 9 Summary of results in comparison to research hypotheses.

Hypothesis	Sample	
	General population	Prison
H ₁ : Quest for significance, significance loss, collective narcissism, sacrifice for one's value, and sacrifice for one's group will be positively related to extreme personality, both in the general population and prison samples.	- The hypothesis was confirmed for the quest for significance, significance loss, and sacrifice for one's value. - The hypothesis was not confirmed for sacrifice for one's group.	- The hypothesis was confirmed for the quest for significance, significance loss, and collective narcissism and sacrifice for one's value. - The hypothesis was not confirmed for sacrifice for one's value or group.
H ₂ : Collective narcissism and the sacrifice for one's highest value will mediate the relationship between quest for significance, significance loss, and extreme personality, both in the general population and prison samples.	- The hypothesis was partially confirmed for the quest for significance model. - The hypothesis was not confirmed for the significance loss model.	- The hypothesis was partially confirmed for the quest for significance model and the significance loss model (only for collective narcissism).

Last, results have partially supported H₂, and only for the general population sample. Mediation models for quest for significance and significance loss as predictor variables for extreme personality indicated that collective narcissism and self-sacrifice for one's highest value were partial mediators. Specifically, in the case of quest for significance, considering both variables together significantly partially mediated the existing relationship between it and a stronger extreme personality profile. These results are significant because for the first time there is evidence that a dispositional drive toward attaining higher personal significance explains a higher extreme personality profile independently, and also in an indirect way, by increasing an individual's perception of in-group grandiosity and superiority which, in turn, heightens his/her willingness to make significant sacrifices based on their core value. These results are consistent with the existing scientific literature on extremism, particularly from the 3N model perspective (Da Silva et al., 2024; Di Cicco et al., 2025; Webber and Kruglanski, 2016).

Regarding an individual's punctual perception of significance deprivation, its relationship with an extreme personality profile was partially mediated only by his/her willingness to sacrifice for his/her core value (having their perception of the in-group superiority no significant relevance in the relationship), which partially confirms H₂. As before, these results are relevant as they provide new

evidence that a recent perceived loss of personal significance would partially enhance a more marked extreme personality profile, which is in line with initial findings reported by Szumowska et al. (2025).

In the prison sample, in contrast, the effect of personal significance (both in its trait and state dimensions) over the extreme personality profile was only partially and positively mediated by the presence of superiority views of the in-group by the individuals. This would indicate that, for those in prison, the activation of the quest for significance would trigger a more extreme personality profile, this effect being greater if they also perceived their in-group as superior to all others. Remarkably, willingness to make sacrifices (either for one's central values or the group of reference) was not significantly related to their extreme personality characterization. One possible explanation is that those who are in prison might very well consider that they had already made enough "sacrifices" (those that brought them to prison) and, therefore, eliminated its possible relevance to their extreme attitudes and behaviors—the perception that *I have done already enough*. This is something that, for instance, was reported by Gómez et al. (2022). A complementary additional explanation might be that being in prison had had an effect on individuals' core beliefs and mental approach, promoting a change in those condemned (Maier and Ricciardelli, 2021). This effect might be enhanced by the prison reinsertion programmes applied in Spain (Fita et al., 2025), programmes that, when including specific attention to psychological aspects, have proven to be highly effective for avoiding recidivism (Beaudry et al., 2021) and, therefore, willingness to make sacrifices (as the lack of further crimes would be one of the clearest indicators of that drop in the willingness to make sacrifices). Cross-cultural related generalizability questions in this regard are discussed below.

One important point is to acknowledge how the effect size for the general population regression models was modest ($R^2 = 0.077$), especially in comparison with that of the prison sample ($R^2 = 0.252$). This seems to points toward the existence of related psychological mechanisms that require research in order to achieve a more comprehensive and detailed model for explaining extremist personalities—some relevant potential candidates could be intolerance of uncertainty, spirituality, or personality traits, as a recent systematic review highlighted their relevance in relation to extremist attitudes (Altungy et al., 2025), a variable that by itself should be analyzed further in future research in its relation to extreme personality (in order to be able to determine what might come first, *the chicken or the egg*).

Quest for significance and significance loss: closely related yet independent siblings

In addition to testing the research hypotheses, our results offered additional significant knowledge that deserves its own space. Our mediation results are in line with previous scientific literature that shows how significance quest would be strongly related to views of superiority of the in-group (Kruglanski et al., 2014; Webber and Kruglanski, 2016), and how a recent loss in one's perceived personal significance is a powerful trigger for making sacrifices that might be regarded as honorable and meaningful by others (Gómez et al., 2022; Kruglanski et al., 2022; Martel et al., 2021), while adding further specific knowledge in this regard.

In this way, it is important to remember that quest for significance is understood as a long-term disposition characterized by an individual strive to restore (or increase) one's personal significance (Kruglanski et al., 2022); it is an experience prolonged in time, as it is the process for developing a set of beliefs and attitudes regarding the grandiosity and superiority of one's group (Cichocka, 2016; Golec De Zavala and Lantos, 2020). Considering these results, it might be that both processes develop contingently in parallel—one's constant strive for more personal significance may nourish beliefs and attitudes of the superiority of a group (as is supported by the 3N model; Kruglanski A. et al., 2018).

In contrast, significance loss is directly related to a more punctual specific perception of a marked reduction in one's personal significance (i.e., after a romantic breakup, when fired from work, or any other example of perceived humiliation—personal or to one's group; Contu and Pierro, 2024; Webber et al., 2018). If this state is not “resolved,” this significance loss might evolve into a quest for significance (with the development already explained). Nonetheless, let's focus on those initial attempts to resolve that loss of personal significance. As posited by Kruglanski et al. (2022), that personal significance loss drives people to restore it, either through the same means as by which it was initially lost or by resorting to alternative means. In either case, this transitional state would strive for short-term accessible means to regain that lost significance, and making a sacrifice seems a good candidate for that mean (being something accessible, that might be done with little preparation, and which would send a meaningful message to those around—one key aspect when trying to restore one's significance). Group fusion is a long-term process that requires not only time but also shared experiences (real or perceived); making a sacrifice would be something that can be done “on an impulse” (Whitehouse, 2018b). It is from this perspective that the results found in the second mediation model could be explained.

In conclusion, while both quest for significance (trait) and significance loss (state) underlie part of what is defined by Szumowska et al. (2025) as extreme personality, the pathways for this relationship would be different in each case: one's grandiosity perception of the in-group being more significant for the former, and the willingness to make sacrifices for one's core value more relevant to the latter. These results are of great importance on an applied level. The results obtained in this study serve as a starting point for conceptualizing interventions focused on extremism. Although personality is generally understood as a set of relatively stable characteristics, this study highlights underlying elements of personality that do not necessarily share this stability. This challenges the deterministic notion that individuals are ruled by their personality and, therefore, are powerless to change the outcomes that stem from it. If we accept that it is possible to intervene in these underlying elements—which may be linked to the expression of extreme attitudes or behaviors stemming from extreme personality traits—we also accept the idea that change is possible, even when relatively stable traits are present.

Societal implications of these results

Results from this research have important social implications. Extreme personality is characterized by a content-free tendency

that is not restricted to any particular goal or activity (Szumowska et al., 2025). In this regard, individuals with a higher extreme personality profile would be more prone to engage in what might be regarded as extreme behaviors, whether prosocial or destructive. The development of such behaviors is of great importance, as individual behaviors might cause a greatly relevant social shock (from minor criminal offences that create an atmosphere of insecurity, i.e., small thefts, public nuisance, or disorderly conduct—to more serious ones, i.e., terrorism, shootings, rape, or assault) (Vissing, 2022).

Furthermore, the present results provide a more comprehensive picture of the underlying processes in the relationship between quest for significant and violent behaviors (Da Silva et al., 2024; Kruglanski et al., 2022) by linking both significance quest and significance loss to extreme personality profiles. This becomes particularly relevant when developing intervention strategies. While it could be argued that personality traits are reasonably stable, the variables that might be associated with them could be more susceptible to interventions. Therefore, providing shared spaces where individuals might securely restore (or increase) their personal significance in those instances when it might have been reduced may reduce the risk of a further increase in the extreme personality trait. Events that affect individuals' personal significance are part of life; however, the way in which those around us might respond in these cases might cushion its negative impact if providing support, or heighten it if a more social disconnection exists (Langenkamp, 2025; Moyano et al., 2024). Therefore, promoting more coherent social contexts could have a positive impact on the prevention of destructive antisocial behaviors that might accompany such setbacks (Szumowska et al., 2025) as well as foster a more democratic society, whose main current threat precisely resides in the combination of social disconnection and political polarization that fuels radicalization and extremism (Langenkamp, 2025; Moyano et al., 2024).

This research also managed to prove the relevance of in-group superiority beliefs, the willingness to make sacrifices for one's highest values, and personal significance in extreme personality profiles. One thing is sure, no one makes a sacrifice for something that is not regarded as greatly worthy, and as social beings, individuals usually refer to social cues to determine what is considered valuable (Russo et al., 2022). Such social cues, therefore, are crucial in the shaping of extreme personalities. As members of society, we play a role in determining the salience of the social narratives that govern a given time and context. If individuals support narratives that are against tolerance, this may enhance the in-group superiority dynamics (Verkuyten et al., 2023) which, when coupled with experiences of recent failure and/or humiliation, can promote extreme personalities (with the associated risks). In contrast, fostering more open, tolerant, and supportive societies could generate a positive impact not only on the health of democratic systems (Brooks and Weber, 2022) and on individuals psychological wellbeing (Alnaji et al., 2016), but also by deactivating those mechanisms that the present research has proved to be linked to extreme personalities.

The extreme personality construct proposal (Szumowska et al., 2023) is still quite novel, but it shows significant potential for helping in the understanding of the psychological processes (both at an individual and group level) that might underlie relevant and very different processes, from violent extremism and radicalization

to some types of sport practice (Hornby et al., 2024), social activism (Altungy et al., 2025), or excessive work commitments (Garavan et al., 2024).

Research limitations

This study provides some key findings relevant for future research regarding the role and implications of extreme personality, but it is not free of limitations that should be highlighted. First, the majority of the sample comprised males (General population: 92.4% and Prison sample: 95.5%). This clearly limits the ability to generalize the results to the entire population. There might be an underlying potential moderating influence of gender given the fact that, throughout cultures, there are still significant differences in how children are educated in values, norms, and cultural schemes depending on their gender (Stewart et al., 2021), something that is starting to change in some societies but still has a long way to go (Guthridge et al., 2022). Therefore, future research should aim to obtain a more gender-balanced sample, where possible, given the prison sample gender composition.

In addition, given the exploratory nature of the study and because it was contained within a larger project, its design was cross-sectional. This design limits the possibility of causal inferences, for which longitudinal or sequential designs—that allow the assessment of the temporal influence of predictors over criteria variables—are thus required (Huntington-Klein, 2021) to provide more conclusive results. Finally, the sample, especially the general one, was not culturally diverse. Even though there were participants from many different countries, the majority were from Spain (85.3%) and the remaining 14.7% had Spanish nationality. Future research would benefit from having greater cultural diversity among its participants. This would allow the analysis of whether the reported findings are characteristic of the Spanish-speaking population, or whether they can be generalized to other cultural-linguistic backgrounds.

It is also important to highlight some limitations related to the data collection process. As usually happens in psychological research, information was collected via self-reported instruments. This always entails some potential intentional or unintentional biases in the responses provided by participants, due to social desirability or secondary gains—especially among those who were part of the prison sample. Therefore, future research in this topic would benefit from including some additional direct or implicit measures (although recent reviews suggest the strength of self-reported measures; Corneille and Gawronski, 2024).

In spite of these limitations, the findings of the present research may serve as a solid foundation for these future studies.

Ideas for the future

The present research shows what may seem to be two complementary paths to extreme personality. On the one hand we have what we may call a dispositional path—which comprises the relationship between quest for significance and collective narcissism. This path is characterized by the need for a larger time frame in which to develop and higher stability. On the other hand,

we have a reactive path—which comprises the relationship between significance loss and the willingness to sacrifice for one's own values. This path is characterized by its transient nature, as it is a reaction to a momentary and unpleasant feeling of significance loss. A thorough exploration of how these two paths interact and emerge constitutes a promising future line of research. Understanding more about how extreme personality develops will enhance our knowledge of the pathways leading individuals to radicalization.

This would allow the adaption of Beck's content-specificity proposal (Beck et al., 1987), which suggests that it is the specific mental contents and not the psychological structures or mechanisms (which are the quite the same in every person) that determine the presence of depressive or anxious symptoms in individuals—to the area of extremism research. This suggests that psychological processes in terms of social cognitions and social self-perceptions would be the same for everyone, as it would be the specific content within these processes that would determine individuals' differentiated attitudes and behaviors (from helping those in need to volunteering to resort to violence for saving the group honor).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by ARTIS Research and Risk Modeling IRB 00007516. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

PA: Data curation, Resources, Investigation, Methodology, Conceptualization, Writing – review & editing, Writing – original draft, Formal analysis. AN-M: Writing – original draft, Writing – review & editing, Formal analysis, Methodology, Investigation. RL-B: Investigation, Writing – review & editing, Writing – original draft, Methodology, Formal analysis. SL: Writing – review & editing, Methodology, Formal analysis, Investigation, Writing – original draft. LJ: Writing – review & editing, Validation, Writing – original draft. ES: Conceptualization, Project administration, Funding acquisition, Investigation, Writing – review & editing, Validation, Supervision, Resources. EM: Validation, Resources, Writing – review & editing, Project administration, Conceptualization, Investigation, Supervision. ÁG: Funding acquisition, Resources, Writing – review & editing, Conceptualization, Investigation. AK: Conceptualization,

Supervision, Project administration, Writing – review & editing, Investigation, Resources.

Funding

The author(s) declared that financial support was received for this work and/or its publication. The preparation of this paper was supported from the budget under the programme “Excellence Initiative – Research University” at Jagiellonian University, Faculty of Philosophy, and by the European Research Council and the Spanish Ministry of Science and Innovation (Grants 101018172 and PID2021-124617OB-I00: Ángel Gómez).

Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frsps.2026.1714455/full#supplementary-material>

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