



Need for cognitive closure and desire for cultural tightness mediate the effect of concern about ecological threats on the need for strong leadership

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Accepted: 26 September 2023
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Abstract

The present research utilizes an evolutionary framework to investigate the process underlying the recent rise of several populist, “strongmen” leaders. Specifically, we propose that when people experience contingent (i.e., impending) ecological threats, their need for cognitive closure is activated, making them desire strong rules (i.e., a tight society) and to be guided by a strong leader. Further, we hypothesize that desire for cultural tightness, once activated by need for cognitive closure, augments peoples’ need for strong leaders. In two studies, we tested our hypotheses with respect to two of the most salient ecological threats currently affecting Europeans, namely COVID-19 (Study 1) and the war in Ukraine (Study 2). Results supported all our hypotheses, thereby shedding light on psycho-motivational underpinnings (i.e., need for cognitive closure and desire cultural for tightness) of the rise of populist leaders. Results thus corroborate the idea that populist leaders can use ecological threats-related uncertainty to maintain or gain power, and that ecological threats could bring to an alignment with right-wing ideas of people’s political attitudes.

Keywords Ecological threats · Need for closure · Desire for tightness · Need for strong leaders

Introduction

Recent years have seen the decadence of democratic values in favor of populist ones (Gelfand & Lorente, 2021), with accompanying support for populist parties and autocratic, “strongmen” leaders (Ben-Ghiat, 2020). In USA, the fact that Donald Trump won the elections in 2016 is emblematic of the attractiveness of populist leaders who promise to restore greatness to a country and focus on those who feel left behind (Norris & Inglehart, 2019). The subsequent denial of Trump’s 2020 electoral loss by nearly one-third of all Americans further emphasizes the influence that strongmen leaders have on their devoted followers (Murray, 2022). In the Philippines, former President Rodrigo Duterte enjoyed widespread support for his reign, including specific support for his draconian drug war, which was alleged to involve numerous human rights abuses (Aquino, 2017). Similarly, Russian President Vladimir Putin, and his invasion of Ukraine, consistently receive high approval ratings in Russia, though state control over the media and imprisonment and murders of prominent dissidents may skew such opinion polls (Buckley et al., 2022). In Europe, populist leaders have been elected in Hungary, Poland, and the Czech Republic, demonstrating the strongest support

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for such autocratic parties since the fall of the Soviet Union (Tartar, 2017). Indeed, fears that Hungarian President Orbán's model of "illiberal democracy" will spread have recently been ignited in Israel in the face of Benjamin Netanyahu's far-right government pushing for an overhaul of the country's judiciary (Wolf, 2023). Thus, the consequences of autocratic, populist leadership, ranging from erosion of civic institutions to human rights abuses to crimes against humanity (Ritter & Moulson, 2023), are clear and current threats that require deeper exploration and explanation.

In this paper, we build on an evolutionary perspective (Gelfand & Lorente, 2021) to propose that the rise of populist leaders originates from the perception that they are strong and able to solve societies' problems and respond to ecological threats (Gelfand et al., 2011; Harrington & Gelfand, 2014). By definition, ecological threats (e.g., pathogen outbreaks, wars) are elements that make societies feel vulnerable, and uncertain (Gelfand et al., 2011; Jackson et al., 2019), thereby activating psychological needs aimed to restore a common sense of safety and organize adaptive reactions (Gelfand & Lorente, 2021). As we explain in further detail later, the need for cognitive closure (Kruglanski, 2004), and the subsequent desires for cultural tightness (Gelfand et al., 2011) and strong leadership are evolutionally adaptive psychological response to ecological threats.

Need for cognitive closure, desire for cultural tightness, and ecological threats

At the core of the proposed pathway to populist and autocratic leadership lies the need for cognitive closure (NFC), a seminal theoretical construct in social psychology, defined as a motivational push toward uncertainty reduction (Kruglanski, 2004), and an urgency to have firm and quick answers (De keersmaecker & Roets, 2017; Roets et al., 2015). Hence, the need for cognitive closure reflects the tendency to avoid uncertain decisions and situations. Previous research has shown that NFC can represent a) a chronic individual difference (Webster & Kruglanski, 1994), or b) a situationally induced psychological state (Roets et al., 2015). Thus, although NFC is often conceived as a personality trait, it can also be instigated by environmental factors. For example, people strive for cognitive closure when they must complete a valued task under pressure (Roets et al., 2015). In past research, situational pressure has been operationalized as temporal pressure (Roets & Van Hiel, 2011), environmental disorders (Kruglanski et al., 1993), and weariness (Webster et al., 1996). In the present study, we categorize ecological threats (e.g., pandemics, invasions) as a particularly potent type of environmental factor able to induce NFC, which can in turn trigger a desire for stringent norms, that is, the desire for tightness.

Desire for tightness (DCT) is a concept derived from tightness-looseness theory (Gelfand et al., 2006; Pelto, 1968). Societies are defined as "tight" when they present strict norms and high levels of intolerance toward people who do not adhere to those norms. "Loose" societies, by contrast, are characterized by weaker rules and the acceptance for norm-breaker actions (Gelfand et al., 2006, 2011, 2017; Pelto, 1968). DCT can thus be defined as people's desire to live in a society which has strong and well-defined norms, as well as the capability to enforce those norms and thus intolerance towards those who violate society's rules.

Notably, tight societies tend to have evolved under high ecological threat. More specifically, when communities experience impending threats (e.g., risk of being involved in a nearby war), they require strict rules and high intolerance toward norm-violating behaviors to manage those emergencies (Gelfand et al., 2011, 2017). In support of this notion, Gelfand et al. (2011) found that individuals that had threats to their own society salient had a higher desire to punish norm breakers than those primed with threats to another society. Given such experimental as well as historical data, strong norms and their enforcement are considered adaptive responses which help cultures to cope with uncertainty-driven situations (Aktas et al., 2016).

Relevant to the aim of the present research, scholars recently showed some possible and important consequences of perceiving COVID-19 as an ecological threat and its relationship to cultural tightness (Gelfand et al., 2006). Specifically, Mula et al. (2021) showed that people who desired more tight rules in response to COVID-19 promoted self-regulated preventive behaviors in order to protect themselves. Further, Baldner et al. (2022) showed that perceiving COVID-19 as an ecological threat is related to an enhancement the DCT, which, in turn, increased people's intolerance of noncompliance with preventive behaviors, which – we claim – should make people desire strong leaders who are able to punish deviant behaviors. However, the above-mentioned research focused on the association between covid-19 and tightness, and their consequences only, ignoring the role of cognitive closure.

Based on the aforementioned research, ecological threats should activate, sequentially, NFC and DCT. In the present study, we argue that given its both chronic and acute aspects and its close connection with uncertain situations (such as those caused by contingent ecological threats), NFC should be an antecedent of the desire for cultural tightness (Albarello et al., 2023b). Indeed, past research has shown that NFC is associated to adhesion to task rules, situational norms (Chiu et al., 2000; Fu et al., 2007), and the endorsement of cultural-centric attitudes (Albarello et al., 2023a). Importantly, given that cultural norms are commonly accepted behavioral standards (Chiu et al., 2000; Fu et al., 2007), individuals high in NFC should adhere to them because they provide certainty

(Chao & Chiu, 2010). Moreover, NFC enhances the desire for consensus in groups and promotes uniformity of responses (Kruglanski et al., 2006), as is observed in tight societies. Because NFC induces adherence to cultural norms to reduce uncertainty (Kruglanski, 2004), we posit that in the absence of norms that clearly indicate how to react to uncertain situations (e.g., those caused by contingent ecological threats), people experiencing NFC as a result of such uncertain situations will want strict and strong norms to follow. Namely, they will desire a tight society.

NFC, desire for cultural tightness, and need for strong leadership

Need for strong leadership is defined as the tendency to desire an effective leader, able to cope with threats and difficulties. With respect to the association between NFC and desire for strong leaders, there is a wealth of evidence demonstrating that NFC promotes the emergence of autocratic influence structures within groups (De Grada et al., 1999; Pierro et al., 2003). Such influence structures contribute to the constitution of consensus for the leader's decisions, thereby providing certainty as response to situational uncertainty. Further, the pursuit of rapid closure makes the implementation of "hard" tactics (i.e., those used by strong leaders; French & Raven, 1959; Raven, 2004) more appealing to people who are experiencing NFC (Pierro et al., 2012). Orehek et al. (2010) provided additional evidence of the association between NFC and strong leadership, showing that NFC led to support only for leaders perceived as decisive (i.e., those seen as closure providers and as a solution to uncertainty). Moreover, past studies have also shown that across cultures and history, NFC is closely linked to support for right-wing authoritarian leaders (e.g., Dhont et al., 2013).

Given the close link between NFC and cultural tightness described previously, it is unsurprising that there is vast evidence demonstrating the link between cultural tightness and need for strong leadership. Results by Aktas et al. (2016) showed that people in tight cultures perceive autonomous leaders (i.e., those able to rapidly concretize their decisions) as effective. Moreover, recent research demonstrated that when societies experience ecological threats, they come to

believe that their country is too 'loose' and want leaders who can make their society tighter (Jackson et al., 2019; Sprong et al., 2019). For example, in an American sample, Jackson et al. (2019) found an effect of concern about immigration on intentions to vote for Donald Trump, mediated by DCT and prejudice. Importantly, this effect was still significant also when participants' political orientation was considered as a covariate and has been replicated in a French sample with respect to intentions to vote for Marine Le Pen.

Prior research thus suggests that people perceive strong leaders as the solution to uncertain situations related to ecological threats (De Grada et al., 1999; Gelfand & Lorente, 2021; Pierro et al., 2003, 2012). Indeed, leaders perceived as strong – such as autocratic, populist, or right-wing oriented ones – should be able to provide firm and quick answers to such uncertain situations, implementing strong norms and punishing norm-violating behaviors. That is, strong leaders should be seen as able to fulfill people's NFC and DCT, thereby resolving uncertain, threatening, situations.

The present research

Previous research has found that ecological threats (e.g., pathogen outbreaks, impending wars) make societies tighter, which, to adaptively respond to threatening situations, rely on strong leaders (i.e., those perceived as able to make and enforce strict rules; Gelfand & Lorente, 2021; Jackson et al., 2019; Sprong et al., 2019). Further, research established that people striving for uncertainty reduction tend to respect cultural norms and have attitudes aligned with those typical of strong leaders (e.g., right-wing oriented, populist or autocratic leaders; Dhont et al., 2013; Pierro et al., 2003; Pierro et al., 2012). However, to our knowledge, research investigating the role of the NFC within this process does not exist. Hence, through carrying out the present research, we aimed to fix this knowledge gap by hypothesizing that concern about contingent ecological threats would activate people's NFC, which, in turn, would make people desire a tight society, and, consequently, to be guided by a strong leader. These hypotheses are depicted in Fig. 1.

We tested this hypothesis through two studies, focusing on two of the most salient threats facing Europeans. In the first study, we operationalized concern about contingent

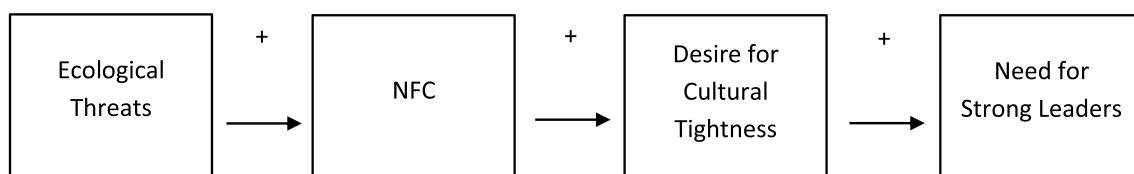


Fig. 1 The theoretical model: the hypothesized effect of ecological threats on the need for strong leadership sequentially via need for cognitive closure and desire for cultural tightness

ecological threats as concern about COVID-19. Specifically, we collected data in June of 2021, when the COVID-19 pandemic's peak was already over. However, we decided to test the effect of Covid pandemic as a threat for two main reasons. Firstly, COVID-19 in Italy caused 100,000 dead in 2020 and about 30,000 in the first half of 2021 (i.e., when we collected data for Study 1, ISTAT, 2022). Second, at the time of data collection, since in Italy safety restrictions (e.g., surgical masks and one-week lockdown for who tested positive) were mandatory, the COVID-19 was still a present threat. In the second study, we operationalized concern about contingent ecological threats as concern about the current war in Ukraine, which has become ever more salient to Italians as time has passed. Since strong leaders are often related to right-wing oriented political attitudes and ideas (e.g., Dhont, et al., 2013), one could aptly argue that need for strong leadership is typical of right-wing oriented voters but not necessarily due to NFC or concern about ecological threats. To exclude this alternative explanation, we decided to include participants' political orientation as a covariate. In the methods sections we declare the way in which the sample size was determined, all data collected but not analyzed, and all measures we used.

Study 1

Materials and methods

Participants and procedure

To estimate the required participants' number necessary to detect the indirect effects of a serial mediation model (two mediators), we used an online tool provided by Schoemann et al. (2017). Given this was the first study which considered a model with all the four variables of interest, we assumed small effect sizes ($r=0.10$), the confidence level equal to 95 percent, and power = 0.80. In such a case, 5,000 Monte Carlo simulations indicated a required sample size of a) 1293 participants to detect the indirect effect of concern about ecological threats on the need for strong leaders via NFC and b) 1367 to detect the indirect effect of concern about ecological threats on the need for strong leaders through DCT.

Using the online research platform Prolific, we enrolled 1,496 adults residing in Italy (50.7% female; $M_{\text{age}}=27.45$, $SD_{\text{age}}=8.12$ yrs, range from 18 to 69 yrs). All data were collected on June 3rd, 2021. Participants represented a diverse sample of the Italian population, both geographically and occupationally: 47.3% came from the north of Italy, 23.7% from the center, and 29% from the south. Further, 53.9% of the participants were students, 36.4% were employed full-time, and 9.7% reported that they were neither students nor full-time workers.

Firstly, participants agreed to participate, then they filled out a questionnaire comprising standard demographic information and the research measures (as described in the section below). All items contained in the questionnaire were administered in Italian. In the forthcoming section we furnish sample items in English. Participants were debriefed, and thanked. Eventually, participants were paid, as previously agreed, for their participation.

Measures

Perceived concern about Covid-19 threat We used four items (Baldner et al., 2022) to measure concern with COVID-19. For example, we asked participants to what extent they were "afraid of getting sick with COVID-19". Participants gave their responses on a 7-point Likert scale that was ranged from 1 (not at all) to 7 (very much). $\alpha=0.90$.

Need for cognitive closure Need for closure was measured through the Revised Need for Closure Scale (Pierro & Kruglanski, 2005). Specifically, we measured people's tendency to avoid uncertain decisions and situations. Example items include, "When I am uncertain, I prefer to make fast decisions, whatever they are" and "I prefer engage activities where is clear what I have to do and how I have to do it". Participants indicated their responses on a 6-point Likert scale that was ranged from 1 (strongly disagree) to 6 (strongly agree). (Cronbach's $\alpha=0.78$).

Desire for cultural tightness Desire for tightness was measured through asking participants to indicate if their place of residence should have been "loose" or "tight" (Contu et al., 2023; Mula et al., 2021). Specifically, participants answered to five items on a scale that was ranged from "1" to "9", where high scores meant that participants desired their place of residence to have strict rules and low tolerance toward violators. Example items include "1" = "My place of residence should have flexible social norms" vs "9" = "Have rigid social norms". $\alpha=0.89$.

Need for strong leadership We measured people's tendency to desire an effective leader, able to cope with threats and difficulties (i.e., strong), using the following three items derived by Sprong et al. (2019) (e.g., "We need a strong leader right now"). Participants indicated their responses on a 7-point Likert scale that was ranged from 1 (strongly disagree) to 7 (strongly agree). $\alpha=0.94$.

Political orientation Participants indicated their political orientation on a 7-point Likert scale, where "1" indicated a left-wing orientation and "7" indicated a right-wing orientation.

Analytical strategy

As mentioned above (see Fig. 1), our hypothesis entails a process that has as a precursor the concern for ecological threats, which is then associated with the NFC, the desire for cultural tightness, and the need for strong leadership sequentially. Also, we expected that the concern for ecological threats would have had an indirect effect on the need for strong leadership via the NFC and the desire for cultural tightness. Hence, we chose to analyse data through a sequential mediation model in which the concern about ecological threat (i.e., COVID-19) was the main predictor, the NFC was the first mediator, the desire for cultural tightness was the second mediator, and the need for strong leadership was the dependent variable.

Results

Descriptives and correlations are displayed in Table 1. As expected, all variables had a positive and significant association with one another. Of particular note, concern about COVID-19 was significantly positively associated with the NFC $r(1496) = 0.052, p = 0.045$. The NFC was also significantly positively correlated with the DCT

$r(1496) = 0.15, p < 0.001$ and with the need for strong leadership $r(1496) = 0.23, p < 0.001$. The DCT was also significantly positively correlated with the need for strong leadership $r(1496) = 0.31, p < 0.001$. Additionally, as expected, participants' political orientation was significantly associated with all other variables.

To test the effect of the concern about COVID-19 on the need for strong leadership via NFC and DCT, we ran a serial mediation analysis (SPSS PROCESS V27.0 Macro; Model 6; Hayes, 2017) with 5,000 bootstrap samples, 95% CIs, and unstandardized regression coefficients. Given the positive and significant correlation between right-wing political orientation and all variables in the hypothesized model, we included participants' political orientation as a covariate to rule out the alternative explanation that the results could be attributed to political orientation alone. Results are presented in Fig. 2.

Serial mediation analyses

Serial mediation analyses confirmed our main hypothesis. Namely, concern about COVID-19 significantly predicted NFC, $b = 0.03, SE = 0.01, t = 2.86, p = 0.004, 95\% CI(0.011, 0.058)$; which in turn significantly predicted DCT, $b = 0.24, SE = 0.06, t = 3.75, p < 0.001, 95\% CI(0.115, 0.367)$ and need

Table 1 Study 1 – $N = 1496$

	1	2	3	4	5	M(SD)
1. COV	(0.90)	0.052*	0.145***	0.103***	-0.108***	4.40(1.40)
2.NFC	/	(0.78)	0.146***	0.227***	0.189***	3.30(0.66)
3.DCT	/	/	(0.89)	0.311***	0.225***	5.36(1.69)
4.NSL	/	/	/	(0.94)	0.278***	4.65(1.61)
5.POL	/	/	/	/	/	2.92(1.24)

Bivariate correlations and descriptive statistics

* $p < .05$. ** $p < .01$. *** $p < .001$. COV Concern about Covid-19 threat; NFC Need for cognitive closure; DCT Desire for cultural tightness; NSL Need for strong leadership; Political Political orientation (high scores indicate Right-wing). In bracket (Cronbach's Alpha)

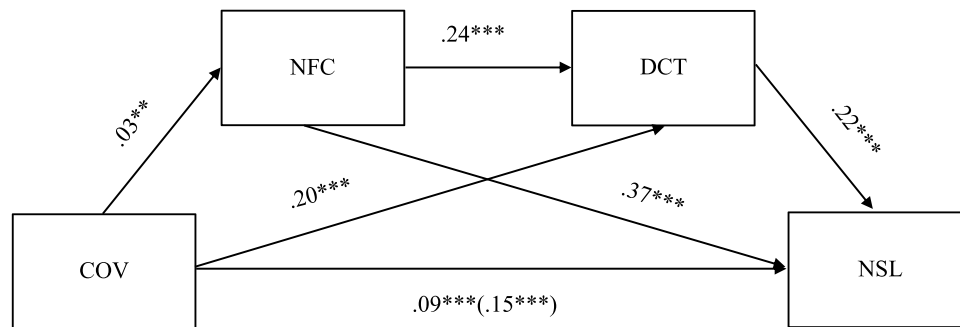


Fig. 2 The effect of concern about Covid-19 on need for strong leadership sequentially via NFC and desire for tightness. Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. Total effect is showed in brackets. All effects were obtained controlling by political orientation. The covari-

ate is not included. COV = Concern about Covid-19; NFC = Need for cognitive closure; DCT = Desire for cultural tightness; NSL = Need for strong leadership

for strong leadership $b=0.37$, $SE=0.06$, $t=6.22$, $p<0.001$, 95% $CI(0.250, 0.481)$. Lastly, DCT significantly predicted the need for strong leadership, $b=0.22$, $SE=0.02$, $t=9.35$, $p<0.001$, 95% $CI(0.174, 0.267)$. Notably, concern about COVID-19 (i. e., the direct effect), significantly predicted need for strong leadership $b=0.09$, $SE=0.03$, $t=3.47$, $p<0.001$, 95% $CI(0.042, 0.151)$.

Moreover, analyses revealed a significant total indirect effect of concern about COVID-19 on need for strong leadership via NFC and their DCT, total indirect effect = 0.057, $SE=0.01$, 95% $CI(0.038, 0.079)$. Specific indirect effects were all significant (Table 2). As mentioned above, the direct effect remained significant, suggesting a partial mediational role of NFC and the DCT on the effect of the concern about COVID-19 on need for strong leadership. Importantly, the total effect was significant, total effect = 0.15, $SE=0.03$, $t=5.42$, $p<0.001$, 95% $CI(0.098, 0.210)$. The entire model was significant [$F(2, 1493)=78.55$, $p<0.001$, $R^2=0.09$]. Finally, political orientation (i.e., the covariate) was positively and significantly associated to a) NFC, $b=0.09$, $SE=0.01$, $t=6.99$, $p<0.001$, 95% $CI(0.069, 0.122)$, b) DCT, $b=0.26$, $SE=0.04$, $t=7.52$, $p<0.001$, 95% $CI(0.192, 0.327)$, and c) the need for strong leadership, $b=0.34$, $SE=0.03$, $t=10.69$, $p<0.001$, 95% $CI(0.276, 0.400)$.

Study 2

Materials and methods

Participants and procedure

To determine the minimum sample size to detect the indirect effects of a serial mediation model (two mediators), we used the same online tool we used in Study 1). Given that the first study revealed effect sizes bigger than those expected, we assumed medium effect sizes ($r=0.30$), the confidence level = 95 percent, and power = 0.80. In such a case, 5,000 Monte Carlo simulations indicated a minimum sample size of a) 234 participants to detect the indirect effect of concern about ecological threats on the need for strong leaders via NFC and b) 266 to detect the indirect effect of concern about ecological threats on the need for strong leaders through desire for tightness.

Table 2 Study 1 – indirect effects

	Coefficient(b)	BootSE	Bootstrap 95% CI_s
COV → NFC → NSL	0.012	0.005	[0.004, 0.02]
COV → DCT → NSL	0.043	0.009	[0.03, 0.06]
COV → NFC → DCT → NSL	0.002	0.001	[0.001, 0.004]
TOTAL	0.057	0.010	[0.04, 0.08]

COV Concern about Covid-19 threat; NFC Need for cognitive closure; DCT Desire for cultural tightness; NSL Need for strong leadership

Participants were recruited via the online platform Google Moduli, with all data being collected between March 21st, 2022, and April 10th, 2022 (i.e., the 28th and 49th days of the war in Ukraine). Since the ecological threat we investigated (i.e., concern about the Ukrainian war) was related to the possible involvement of Italy in the ongoing war, participants who reported that they not reside in Italy were excluded from the analyses ($N=14$). We thus remained with a total sample of 258 adults residing in Italy (55.8% female; $M_{age}=39.15$, $SD_{age}=16.38$ yrs, range from 18 to 81 yrs). Of this sample, 31.4% were students, 47.7% were employed full-time, and 20.9% reported to be neither students nor full-time workers. We implemented the same procedure of Study 1.

Measures

Perceived concern about the Ukrainian war We measured perceived concern about the Ukrainian war by asking participants if they were afraid of “an Italian economic crisis caused by the war”, “a direct military involvement of Italy in the war”, “a nuclear war”, “the third world war”, and “the war, generally”. Participants gave their answers on a 7-point Likert scale that was ranged 1 (not at all) to 7 (very much). $\alpha=0.91$.

NFC Measured as did in Study 1 (Cronbach’s $\alpha=0.85$).

DCT Measured as did in Study 1 (Cronbach’s $\alpha=0.80$).

Need for strong leadership Measured as did in Study 1 (Cronbach’s $\alpha=0.96$).

Participants’ political orientation Measured as did in Study 1.

Results

We implemented the same analytical strategy as in Study 1. Descriptives and correlations are displayed in Table 3. As expected, concern about the Ukrainian war was significantly positively correlated with NFC $r(258)=0.18$, $p<0.001$, which, in turn, was significantly positively correlated with the DCT $r(258)=0.33$, $p<0.001$ and with the need for strong leadership $r(258)=0.38$, $p<0.001$. Further, the DCT was significantly positively correlated with the need for strong leadership $r(258)=0.35$, $p<0.001$. Additionally, participants’

Table 3 Study 2 – $N=258$

	1	2	3	4	5	<i>M</i> (<i>SD</i>)
1. UKR	(.91)	0.175***	0.302***	0.234***	–0.050	5.17(1.36)
2.NFC	/	(0.85)	0.332***	0.378***	0.102	3.50(0.92)
3.DCT	/	/	(0.80)	0.350***	0.126***	5.84(1.40)
4.NSL	/	/	/	(0.96)	0.362***	4.78(1.90)
5.POL	/	/	/	/	/	1.36(1.44)

Bivariate correlations and descriptive statistics

* $p < .05$. ** $p < .01$. *** $p < .001$. UKR Concern about Ukrainian war; NFC Need for cognitive closure; DCT Desire for cultural tightness; NSL Need for strong leadership; Political Political orientation (high scores indicate Right-wing). In bracket (Cronbach’s Alpha)

political orientation was positively and significantly associated with the DCT and the need for strong leadership.

To test the effect of the concern about the Ukrainian war on the need for strong leadership via NFC and DCT, we ran a serial mediation analysis (SPSS PROCESS V27.0 Macro; Model 6; Hayes, 2017) with 5,000 bootstrap samples, 95% CIs, and unstandardized regression coefficients. As in Study 1, we included participants’ political orientation as a covariate. Results are presented in Fig. 3.

Serial mediation analyses

As in Study 1, serial mediation analyses confirmed our main hypothesis. Concern about the Ukrainian war significantly predicted NFC, $b=0.12$, $SE=0.04$, $t=2.94$, $p=0.004$, 95% CI(0.040, 0.203) which, in turn, significantly predicted DCT, $b=0.42$, $SE=0.09$, $t=4.76$, $p<0.001$, 95% CI(0.245, 0.591) and need for strong leadership $b=0.54$, $SE=0.11$, $t=4.68$, $p<0.001$, 95% CI(0.311, 0.762). Lastly, DCT significantly predicted the need for strong leadership, $b=0.24$, $SE=0.08$, $t=3.07$, $p=0.002$, 95% CI(0.086, 0.395). Moreover, concern about the Ukrainian war (i.e., the direct effect) significantly predicted need for strong leadership $b=0.21$, $SE=0.07$, $t=2.74$, $p=0.006$, 95% CI(0.059, 0.361).

Critically, the results revealed a significant total indirect effect of concern about the Ukrainian war on need for strong leadership via NFC and their DCT, total indirect effect=0.14, $SE=0.04$, 95% CI(0.068, 0.225). Specific indirect effects were all significant (Table 4). As mentioned above, the direct effect was also significant, suggesting, again, a partial mediational role of the NFC and the DCT on the effect of concern about the Ukrainian war on need for strong leadership. The total effect was significant, total effect=0.35, $SE=0.08$, $t=4.49$, $p<0.001$, 95% CI(0.197, 0.505) and, the entire model was significant [$F(2,255)=30.875$, $p<0.001$, $R-sq=0.19$]. Finally, political orientation (i.e., the covariate) was not significantly associated to NFC ($p=0.071$), and to DCT ($p=0.054$), but it was positively and significantly associated to the need for strong leadership, $b=0.42$, $SE=0.07$, $t=6.06$, $p<0.001$, 95% CI(0.285, 0.559).

General discussion

Building on arguments and findings presented by Gelfand and Lorente (2021) regarding the evolutionary basis for cultural tightness and desire for populist leaders, this research aimed to expand our knowledge about the psycho-social process by which populist leaders and their parties have gained success

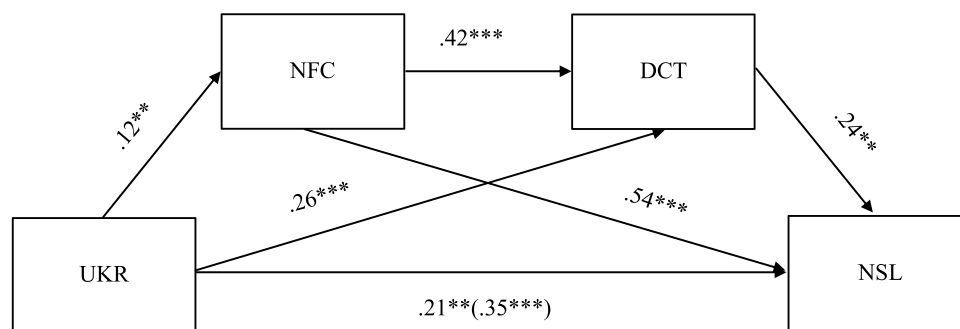


Fig. 3 The effect of concern about Ukrainian war on need for strong leadership sequentially via need for closure and desire for tightness. Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. Total effect is showed in brackets. All effects were obtained controlling by political orienta-

tion. The covariate is not included. UKR=Concern about Ukrainian war; NFC=Need for cognitive closure; DCT=Desire for cultural tightness; NSL=Need for strong leadership

Table 4 indirect effects

	Coefficient(b)	BootSE	Bootstrap 95% CI_s
UKR → NFC → NSL	0.065	0.028	[0.02, 0.13]
UKR → DCT → NSL	0.064	0.026	[0.02, 0.12]
UKR → NFC → DCT → NSL	0.012	0.007	[0.002, 0.03]
TOTAL	0.142	0.038	[0.06, 0.22]

UKR Concern about Ukrainian war; NFC Need for cognitive closure; DCT Desire for cultural tightness; NSL Need for strong leadership

in recent years. We argued that populist leaders – as well as autocratic and right-wing oriented ones – are seen as effective (Aktas et al., 2016) in dealing with uncertain and threatening situations (i.e., those situations induced by contingent ecological threats). More specifically, we expected that concern about contingent ecological threats would activate the NFC, which would make people desire a tight society and to be guided by a strong leader. Moreover, we hypothesized that the DCT would enhance peoples' need for strong leadership. We tested this hypothesis in two studies, analyzing the above-mentioned process with respect to two of the most salient threats to Europeans in 2021 and 2022. Specifically, we operationalized concern about contingent ecological threats as concern about the threat of COVID-19 (Study 1), and as concern about the threat of the war in Ukraine, and specifically about the war's possible consequences for Italy (Study 2).

As expected, in both studies, a serial mediation analysis model confirmed that concern about ecological threats activated peoples' NFC, which predicted both the DCT and the need for strong leadership. Moreover, the DCT positively predicted the need for strong leaders. Further, the direct, indirect, and total effects of the concern about contingent ecological threats on need for strong leadership were significant in both studies. This signals a partial mediational role of NFC and the DCT on the effect of concern about ecological threats on participants' need for strong leadership. Taken together, these results represent novel findings as well as replications of previous findings concerning the positive associations between ecological threats and a) desire for cultural tightness and, b) need for strong leadership.

The presently described results shed light on the psychomotivational underpinnings that populist leaders activate to increase their appeal. In both studies, concern about ecological threats positively predicted NFC and the DCT, which in turn activated the desire for strong leadership. Furthermore, the separated indirect effects of concern about ecological threats on the need for strong leadership via a) NFC and b) DCT were positive and significant. This indicates that the effect of concern about ecological threats on peoples' need for strong leadership is augmented by the activation of both NFC and DCT. These results enrich the psychological understanding of those processes have ushered in a new era of populist and

autocratic leadership, expanding the reasoning presented by Gelfand and Lorente (2021) to incorporate the pivotal role of the NFC.

Indeed, the effect of NFC on the need for strong leadership was positive and significant in both studies. These findings complement prior studies in which NFC encouraged the emersion of autocratic leadership structures in organizations (De Grada et al., 1999; Kruglanski et al., 2006; Pierro et al., 2003), generalizing this finding to a larger group (i.e., a country). Moreover, this research confirms previous findings by Pierro et al., (2012; Study 3) that people with a high NFC prefer autocratic or populist leaders. Most importantly, our findings strongly suggest that when NFC is aroused by contingent circumstances (i.e., temporary ecological threats; for reviews, see Roets et al., 2015), people desire leadership characterized by autocracy and "hard" tactics, both of which promote the uniformity of responses and opinions.

It is noteworthy that not only ecological threats such as the COVID-19 or the Ukrainian war can function as the precursor of the presently highlighted process. For example, as already mentioned, Jackson et al. (2019) showed that support for populist leaders could be instilled by a large range of perceived ecological threats (e.g., immigration, terrorism). Furthermore, also economic inequalities, such as cultural alienation (Inglehart & Norris, 2016), may have contributed to the rise of populist parties and leaders (e.g., Burgoon et al., 2018; Mols & Jetten, 2017; Sprong et al., 2019).

Ecological threats, political attitudes' alignment, and power maintenance

Notably, the direct effect of the perceived ecological threats on peoples' need for strong leadership was significant, also when controlling for people's political orientation. This means that the presence alone of environmental or human-made threats is sufficient to make people desire a strong leader, regardless of their NFC or DCT. Moreover, given that this effect is independent of peoples' political orientation, results suggest that ecological threats can enhance need for strong leadership, thereby aligning potentially discrepant political attitudes. Jackson et al. (2019) supported this reasoning, finding that Americans' perception of ecological threats had a direct effect on intentions to vote for Donald Trump, also after covaring

for political orientation. Thus, it is clear that perception of ecological threats of many kinds (e.g., immigration, pandemic, war) can precipitate the rise of populist and autocratic leaders. Notably, results showed that a right-wing political orientation was still positively associated to the tendency to want to be guided by a strong leader. In light of this, we do not claim that ecological threats override the effect of political orientation with respect to the preference for strong leaders. However, as we mentioned in this paragraph, it seems that concern for ecological threats can make also left-oriented people desire strong leaders as guides.

In considering that the present results are predicated on people's perception of ecological threats, and not their objective presence or relative magnitude, one must consider that convincing people that nonexistent threats are real or that small threats are large can thus lead people to support populist, strongmen leaders. Alongside Gelfand and Lorente (2021) we posit populist leaders who have gained and maintained power in recent years have indeed taken advantage of this process. More specifically, populist leaders have long used threatening language and propaganda tactics to make people feel threatened and uncertain, and, in so doing, reinforce their appeal (Gelfand et al., 2011).

In this respect, important past research showed that also threats that are not real can drive elections. For example, Gelfand and Denison (2019) found that Americans tend to overestimate by the 12–13 percent the percentage of illegal immigrants living in the U.S. (Radford, 2019). As our results suggest, these misperceptions have important psychological consequences. Indeed, people who overestimated the number of people illegally migrated in the U.S. were much more likely to perceive immigrants as a threat, and, in turn, had a higher desire for tighter rules and intentions to vote for Trump in 2020. Notably, one of the main sources of these threats are autocratic and populist leaders themselves. Indeed, they deliberately foment a culture of threat and fear to capitalize on individuals' impulses that naturally follows. For example, populist leaders across Europe (e.g., Matteo Salvini in Italy or Viktor Orban in Hungary) make people feel that their nation are one step away from disaster to exploit the psychological process that the present research enlightened.

Also in this case, recent research showed that Donald Trump, compared to Hilary Clinton, invoked more threat words on the campaign trail to attract conservative voters (historically more sensitive to threats; Jost, 2017) during the 2016 U.S. presidential elections (Choi et al., 2022). Further, unfortunately, other recent research showed that the kind of threats that autocrats leaders can magnify through communication strategies are not just about the percentage of the percentage of illegal immigrants. Along this line, perceptions of immigrants as dangerous was shown to be unfounded. Indeed, even if the 42% of Americans believe that immigration in the United States was making crime worse

(Jones, 2019), Landgrave and Nowrasteh (2018) showed that immigrants more than 70% less likely to be incarcerated than Americans. Again, also the belief that immigrants are an economical threat has been largely magnified. Indeed, Preston (2016) found that immigrants did not affect Americans' wages, rather, they can benefit the U.S. economy (Frazee, 2018) and boost innovation (Pethkokoukis, 2018).

Limitations and future directions

These studies have limitations. First, these studies include only correlational data. Indeed, we did not manipulate concern about ecological threats, which we assumed to be the antecedent of the process we studied in this research. Although one might logically assume that concern about ecological threats is the casual predictor of the enhancement of peoples' NFC, desire for tightness, and need for strong leadership, it is crucial to confirm the casual relationships among these constructs by running an experiment. Indeed, without experimental confirmation of the hypothesized consequentiality among variables we considered, we can not bring support to the precedence of the NFC with respect to the DCT. Also, the lack of casual clarity that correlational data entails make it difficult – at the moment – to design practical interventions aiming at defusing the psychological process that autocrats leaders exploit to gain power. Therefore, manipulating peoples' concern about ecological threats by experimentally increasing or decreasing their salience and perceived relevance to one's life represents an optimal program for future research.

Additionally, this study considered only acute threats, namely COVID-19 and the war in Ukraine, as causes of NFC, need for cultural tightness, and need for strong leaders. Although this permitted us to demonstrate the power of salient threats to produce uncertainty, resulting in a society's preference to be led by strong leaders, we were not able to extend our findings to historically chronic threats. Thus, to understand which areas populist leaders have exploited and will exploit to gain or maintain their power, future research should test the presently studied process with respect to historically chronic threats to societies. Another limitation about the possibility to generalizability of our findings refers to the fact that samples comprised only Italian adults. Future research should investigate the process studied in the present research in a non-European country to ascertain the different impact of both COVID-19 and Ukrainian war on the need for strong leaders via the NFC and the DCT.

The present studies highlights that peoples' need for strong leadership is not determined by their personalities or prior political orientation (Gelfand & Lorente, 2021), but rather by their perception of ecological threats, regardless of the objective intensity of those threats. Thus, to counter

the rise of populist leaders, it is critical to reduce peoples' perception of danger. This could be done through social programs aimed to restore a common sense of safety and giving people useful information that reduces uncertainty in the face of impending threats, making populist and autocratic leaders less appealing. Moreover, to augment their appeal, democratic leaders should enhance their capability to rapidly concretize their decisions when countering threatening situations. For example, they could prepare clear protocols to follow in case of threat. In so doing, they will speed up the response to danger situations, thereby making obsolete those features that made strong leaders attractive.

Author contributions Federico Contu – Data Analyses, Drafting, Writing; Molly Ellenberg – Editing; Arie W. Kruglanski – Editing; Giuseppe Pantaleo – Editing; Antonio Pierro – Conceptualization, Data Collection. All authors have read and agreed to the published version of the manuscript.

Funding Open access funding provided by Università degli Studi di Roma La Sapienza within the CRUI-CARE Agreement. This research received funding by Sapienza Ateneo Scientific Research 2018 (Principal Investigator: Prof. Antonio Pierro), Protocol No. RG118163F3F6F0FE.

Data Availability Data are available at https://osf.io/fnmr9/?view_only=2193b480c6f64684a8700ce2b778cac8.

Declarations

Competing interests The authors declare no competing of interests.

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