



Thinking like a patriot: Criticising the country and the nation is linked to the differences in thinking style and cognitive ability

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ARTICLE INFO

Keywords:

Patriotism
Constructive patriotism
Nationalism
Glorification
Thinking
Thinking style
Cognitive ability
Dual-process theories

ABSTRACT

Some forms of national identification facilitate criticism of one's own country and nation, whereas others prevent it. The critical form of national identification – constructive patriotism – is characterized by the willingness to criticise the group in order to improve it. The uncritical form of national identification – glorification – is characterized by seeing the group as superior to others and by intolerance of criticism of the group. We used dual-process theories to examine whether differences in thinking style and cognitive ability help predict the emergence of the critical and uncritical form of national identification. We ran three correlational studies (total $N = 2509$) in Poland including two samples representative of Polish society. We ran an internal meta-analysis to summarise the obtained results from all studies. We found that constructive patriotism was positively linked with need for cognition (i.e., the willingness to engage in slow, effortful information processing; for the random effect model $r = 0.18$). Constructive patriotism was also positively linked with cognitive ability ($r = 0.07$). In contrast, glorification was negatively associated with need for cognition ($r = -0.26$) and cognitive ability ($r = -0.09$). Glorification was also positively linked with faith in intuition ($r = 0.14$).

1. Introduction

“The United Kingdom's self-exclusion from the single market and the Customs Union is the final victory of ideology over economic rationality.” In these words, British politician Brendan Donnelly (2017) sums up the results of the 2016 Brexit referendum. During this referendum, there were two leading matters driving the decision to vote to leave or stay in the European Union. One was the concern for the country's sovereignty; the other was economic pragmatism (Carl, 2018; Clarke et al., 2017).

The regard for the country's independence is what Donnelly refers to as the “ideology”. It relates to valuing sovereignty and rejecting the dilution of the country unit into a bigger collective. Such an attitude reflects a belief in one's country's greatness and superiority over others – the so-called glorification (Roccas et al., 2006). Glorification may sometimes benefit the country – it ensures the citizens' unconditional support and devotion. However, it can also have negative outcomes. An overly optimistic outlook on one's country may prevent noticing major problems and inhibit progress and growth. Sometimes, it is necessary to undertake a more critical approach to recognise one's country's shortcomings and push it in the right direction. This critical national attitude

is called constructive patriotism (Schatz et al., 1999). Admitting that your country is not strong enough and will need outside support and cooperation requires abandoning some of the glorifying beliefs.

Equating constructive patriotism with rationality and glorification with irrational ideology would be an exaggeration. However, we do believe that the difference between people who glorify their country and those who criticise it may lie in cognitive functioning. More specifically, we seek the underpinnings of glorification and constructive patriotism in thinking styles and cognitive ability. We argue that glorification may be linked with a more intuitive thinking style because defending one's ingroup seems to be an automatic, intuitive reaction to country-related dilemmas. In contrast, generating criticism of one's country and nation requires overcoming the influence of this automatic response. More specifically, it requires (a) engaging in critical reflection and (b) sufficient mental resources to carry this reflective information processing to the end successfully. The first requirement is a matter of thinking style – more reflective individuals are more willing to engage in effortful, critical thinking. The second requirement is a matter of cognitive ability. Therefore, we expect constructive patriotism to be linked with higher – and glorification with lower – reflectiveness and cognitive ability.

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<https://doi.org/10.1016/j.paid.2022.111670>

Received 24 February 2022; Received in revised form 8 April 2022; Accepted 12 April 2022

Available online 25 April 2022

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1.1. The definition and origin of patriotism

Usually, patriotism is understood as love for one's country and nation and identification with their national group (Schatz et al., 1999). However, such a definition covers only the basic form of patriotism called conventional patriotism (Staub, 1997) or *attachment* (Roccas et al., 2006). In fact, patriotism is a complex, multidimensional construct that can take various other forms. For example, many influential works on this topic tackle the differences between attachment and glorification. *Glorification* is defined as a feeling of ingroup superiority, respect for the group's central symbols and rules, and antagonism towards those who do not show enough respect or otherwise criticise the country (Roccas et al., 2006). Therefore, glorification reflects an uncritical form of patriotism. Similar conceptualisations of the contrast between attachment and glorification include, for example, conventional versus blind patriotism (Staub, 1997), genuine patriotism versus pseudo-patriotism (Adorno et al., 1950), or patriotism versus nationalism (Kosterman & Feshbach, 1989).

Still, these two forms of national attitudes reflected by attachment and glorification do not exhaust the theory. In this article, we examine the differences between the uncritical form of patriotism – glorification – and the critical form called constructive patriotism. *Constructive patriotism* – is defined as “questioning and criticism of current group practices that are driven by a desire for positive change” (Schatz et al., 1999, p. 153; Sekerdej & Roccas, 2016). Research showed that this form of patriotism contains both love and critical national attitude and motivates engaging in actions that could help the country (Rupar et al., 2021; Sekerdej & Roccas, 2016). Both glorification and constructive patriotism have a common core – the simple emotional attachment to the group. However, they lay on opposite ends of a spectrum when it comes to criticising the ingroup (Schatz, 2018). Since this national criticism is the main focus of this article, we will explore the differences between glorification and constructive patriotism in this respect.

Criticising the ingroup is problematic because groups are very important for people. They give access to resources, protection (Panksepp, 1998), social support (Kaniasty, 2003) and help create a positive self-image (Tajfel & Turner, 1979; Tajfel & Turner, 1986). Therefore, being excluded from a group is very aversive for people (Eisenberger et al., 2003; MacDonald & Leary, 2005). That is why special cognitive-affective mechanisms ensuring one's group membership have developed (Panksepp, 1998). Here is how these mechanisms work. During socialisation, people acquire knowledge about their ingroup, its value, and expected punishments for criticising it (Blackmore, 1999; Vygotsky, 1978; for the patriotism context, see: Bar-Tal, 1993; Finell & Zogmaister, 2015). For example, people learn that criticising the ingroup may lead to hostile reactions from other members or even exclusion from the group. On the other hand, holding positive beliefs about one's group is beneficial for one's psychological wellbeing, even if these beliefs are false (Edis & Boudry, 2019). Therefore, it is safer not to criticise the ingroup. What is essential is that this ingroup-criticism-preventing knowledge is highly overlearned (Blackmore, 1999) and, thus, operates on the nonconscious, automatic level (Stanovich, 2009).

1.2. Information processing: thinking style, and cognitive ability

Dual-process theories posit the existence of two systems of information processing – System 1 and System 2. System 1 processing is fast, effortless, automatic, nonconscious, and based on associations and heuristics. System 2 processing takes more time and effort, needs conscious control, and is rule-based and analytical (Evans & Over, 1996; Evans & Stanovich, 2013; Sloman, 1996; Stanovich & West, 2000). System 1 operates based on the rules of pain and pleasure – it is oriented towards what feels good. System 2 is relatively affect-free and based on logic and reason – it is oriented towards what is rational (Epstein et al., 1996). System 1 is efficient and often generates the correct response, but in situations that require in-depth analysis, its reaction needs to be

overridden by System 2. Cognitive errors happen when neither of the Systems produces an adequate response; so when the System 1 response is faulty and needs to be overridden, but System 2 processing is either not initiated or is not carried out successfully (Stanovich, 2009; Stanovich & West, 2000).

Whether one will trust the System 1 response or engage in System 2 processing depends on the situation and type of problem they are facing (Evans & Over, 1996; Stanovich & West, 2000). In addition, people differ in the degree to which they, in general, rely on the responses generated by System 1 or System 2 when making judgements and decisions. In other words, they have different *thinking styles*. One's thinking style is described by two independent aspects. One is *faith in intuition* (FII) which reflects one's tendency to trust and rely on the intuitive responses generated by System 1 – hunches and “gut feelings”. The other one is *need for cognition* (NFC) – one's willingness to engage in effortful, slow, analytical System 2 processing (Epstein et al., 1996). Note that what drives the likelihood of initiating System 2 processing is NFC, not FII. If one has high FII but also high NFC, they are still likely to turn System 2 on and generate a response alternative to the intuitive one. On the other hand, if one has low NFC, they will be less likely to generate an alternative response and will be left with only the intuitive one. Therefore, they may use the intuitive response in the decision-making process even if they have low FII.

System 2 depends on two components (Stanovich, 2009). One is the likelihood of engaging in effortful processing – high NFC. The other is *cognitive ability* – efficiency in conducting cognitive tasks, that is, general intelligence. Therefore, whether the System 1 response would be successfully overridden depends on both thinking style and cognitive ability. Even if System 2 processing gets initiated (thanks to high NFC), there is still a sufficient level of cognitive ability required for the process to be successful. The role of cognitive ability is to enable an accurate, unbiased analysis of a problem. To conduct such an analysis, one needs to create mental representations of all the relevant aspects of a problem. They also need to decouple these mental representations from irrelevant, confounding, prior knowledge that could contaminate the analysis (Stanovich, 2009; Stanovich & West, 2000). The prior knowledge (overlearned rules, beliefs, heuristics) is what influences System 1 response but should not influence System 2 processing. Therefore, if one does not have sufficient cognitive ability to decouple the relevant information from confounding knowledge, System 2 response will be biased (Stanovich & West, 1997). The overview of these relations is presented in Fig. 1.

1.3. Information processing and national identification

As discussed above, when an individual needs to generate a rational reaction, two things must occur for System 2 to override System 1. First, the individual must engage in System 2 processing, and second, they have to be able to carry the processing to the end successfully. The first part is a matter of thinking style, while the second part requires cognitive ability. In the case of nation-related problems, the process can be thought of as progressing in a step-by-step manner. First, the automatic System 1 would generate an intuitive response. Usually, the whole system of knowledge related to national membership is an overlearned one. It involves strong associations between elements, including expected punishments and rewards linked with certain types of behaviour (Blackmore, 1999; Stanovich, 2009; Vygotsky, 1978). Because of that, the automatic response triggered by nation-related matters would be consistent with the pain-and-pleasure rule of System 1. Therefore, it would be in line with defending the group and its positive image – an attitude typical for glorifiers. In turn, to overcome the default, intuitive response and generate constructive criticism of the country and nation, the logic-based processing of System 2 is necessary.

Glorification and constructive patriotism are general attitudes towards the country and nation. Therefore, we believe they are linked with the overall likelihood of relying on System 1 or System 2 response. In

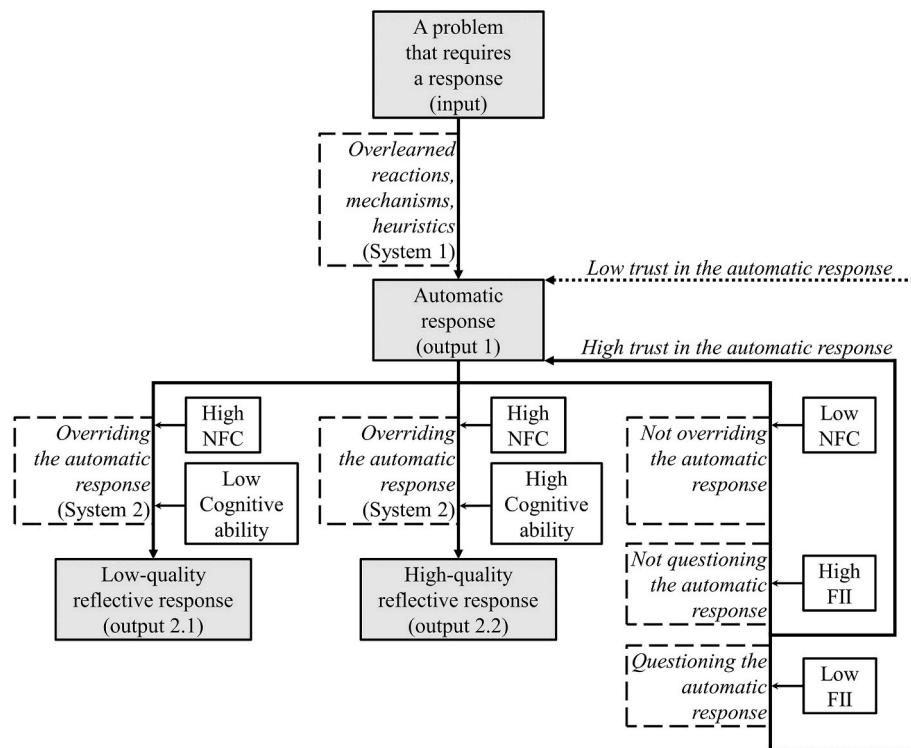


Fig. 1. The role of need for cognition (NFC), faith in intuition (FII), and cognitive ability in generating and following automatic and reflective responses.

other words, if one analyses a nation-related problem deeply, engaging System 2 thinking (e.g., because the situation promotes this type of thinking), they may manage to override the intuitive, glorifying response. But a singular situation like this is not enough to create a general national attitude. However, if one overrides the intuitive, glorifying response often (e.g., because they have high NFC), they may develop a more critical, constructive type of patriotism.

Consequently, a person high in constructive patriotism needs two cognitive properties. First is the willingness to engage in effortful cognitive activity – they need to have high NFC. If one does not have the tendency to use effortful, analytical thinking, they will be more likely to rely on the intuitive responses of System 1 that support glorification. Therefore, we put forward the following hypotheses:

Hypothesis 1. Constructive patriotism is positively linked with NFC.

Hypothesis 2. Glorification is negatively linked with NFC.

The second aspect of information processing important in the context of patriotism is cognitive ability. Constructive patriots need the ability to decouple the important aspects of the problem from the confounding, overlearned knowledge that prevents the negative evaluation of one's ingroup. Even if one engages in analytical System 2 thinking, the inability to repress the influence of the criticism-preventing knowledge will still lead to glorification. Therefore, our hypotheses regarding cognitive ability are as follows:

Hypothesis 3. Constructive patriotism is positively linked with cognitive ability.

Hypothesis 4. Glorification is negatively linked with cognitive ability.

Some research has indeed suggested that constructive patriots are more inquisitive and prone to analyse information more deeply in comparison with glorifiers. Constructive patriots are more knowledgeable about politics (Huddy & Khatib, 2007; Schatz et al., 1999) and more prone to search for political information (Schatz et al., 1999). On the other hand, glorifiers tend to hand over the decision-making process to their leaders, sparing themselves the cognitive effort (Huddy & Khatib,

2007). When it comes to cognitive ability, glorification is negatively associated with academic achievement (Schatz et al., 1999). Glorification is also negatively, and constructive patriotism is positively associated with critical thinking (Williams et al., 2008). Constructive patriots also seem to have a less positive but more realistic appraisal of the actual situation of their country compared with non-critical patriots (Sekerdeji et al., 2022). Generating a realistic evaluation of an ingroup requires both engaging in analytical thinking about the country and sufficient cognitive ability to evaluate it.

Finally, when it comes to FII, it should increase the confidence in the first, intuitive, glorifying response generated by System 1. If one has low NFC, they usually do not question the intuitive, glorifying response and therefore have a more glorifying national attitude. If such a person additionally has high FII, they would be overly confident in this intuitive, glorifying response's correctness. Therefore, FII would lower the chances of ever questioning the intuitive glorification. However, if one generates a critical System 2 response alternative to glorifying System 1 response, the intuitive glorification will likely get rejected. Glorification is an optimistic, often overly positive view on the ingroup (Schatz, 2018) and is unlikely to get chosen over a rational System 2 response. Therefore, glorification should be linked with FII, but constructive patriotism should be driven mainly by NFC and cognitive ability.

Hypothesis 5. Glorification is positively predicted by FII.

1.4. The present research

In the present research, we examined the cognitive underpinnings of critical and uncritical forms of patriotism. Specifically, in Study 1, conducted on a sample representative of Polish society, we examined whether constructive patriotism and glorification are linked with NFC. In Study 2, conducted on a student sample, we explored whether constructive patriotism and glorification are linked with NFC, FII, and cognitive ability. In Study 3, we aimed to replicate our findings from Study 2 on a sample representative of Polish society.

Across all studies, we controlled for the basic attachment to the

country because the element of positive feelings towards one's country and attachment to it is embedded both in the measures of glorification and constructive patriotism. Constructive patriotism is conceptualised as high attachment combined with the critical component. Therefore, controlling for attachment let us draw conclusions about this critical national attitude that is the main focus of this article (for this statistical approach with similar concepts, see [Sekerdej & Roccas, 2016](#)). When it comes to glorification, even though attachment and glorification are separate, independent variables, they are correlated with each other ([Roccas et al., 2006](#)). Controlling for attachment also in the case of glorification-focused analyses allows inferring relations between cognition and the uncritical component of patriotism and not the whole complex concept of nationalistic, glorifying attitudes. In sum, controlling for attachment allows drawing conclusions regarding the critical and uncritical aspects of patriotism alone.

We used the same tools to measure most of our variables of interest across all studies. The pattern of calculations was also the same in all studies. Therefore, we present our studies using a meta-analytical approach ([Goh et al., 2016](#)). This approach lets us test the consistency of obtained effects and enhance the power without losing any important information. Details of individual studies as well as data and codes can be found here: https://osf.io/v9xny/?view_only=9b4727dfd12b4a9f9263446a06d846f6.

2. Material and methods

2.1. Procedure and participants

All three studies took the form of online surveys. It started with short information about the studies (that it aims to analyse everyday behaviour, personality traits, ways of thinking, and public opinion in the realm of various social and political changes and events). Participants were also informed that the responses are collected anonymously, data will be analysed collectively, and that participation in the survey is voluntary and one can withdraw at any time. After reading the information, participants were asked to give informed consent to participate in the study.

Data collection for Study 1 ($N = 1050$, 51% women, $M_{age} = 47$, $SD_{age} = 16.15$) and Study 3 ($N = 1052$, 51% women, $M_{age} = 47$, $SD_{age} = 16.35$) was outsourced to a polling company to obtain a sample representative of Polish society. Both samples were stratified based on age, gender, level of education, and place of residence. Data for Study 2 ($N = 393$, 71% women, 28% men, 1% other gender, $M_{age} = 21$, $SD_{age} = 2.75$) were collected by posting information about the study on Facebook groups for students. Sensitivity analysis (G^* Power, [Faul et al., 2007](#)) showed that detection of small effects of $R^2 = 0.01$, 0.04, and 0.02 (with power of 0.95) is possible (in Study 1, 2, and 3 respectively).

2.2. Materials

We measured glorification, constructive patriotism, NFC and attachment in all three studies in the same way. We measured FII and cognitive ability only in Study 2 and 3 – FII using the same measure and cognitive ability using different measures. In the scales of glorification, constructive patriotism, NFC, FII, and attachment, participants assessed how much they agreed with presented items on a scale from 1 (*completely disagree*) to 6 (*completely agree*). In the measures of cognitive ability, participants chose the correct answer from the presented options. Means, standard deviations of all the used measures and correlations between them can be found in [Tables 1](#) (Study 1) and [2](#) (Studies 2 and 3).

2.2.1. Glorification

We used the eight-item scale adapted from [Roccas et al. \(2008\)](#). Example item: "It is disloyal to criticize your own country"; $\alpha_{Study1} = 0.91$, $\alpha_{Study2} = 0.87$, $\alpha_{Study3} = 0.92$.

Table 1

Means, standard deviations, and correlations of glorification, constructive patriotism, attachment, and need for cognition (NFC) in Study 1.

| | 2 | 3 | 4 | <i>M</i> | <i>SD</i> |
|----------------------------|---------|--------|---------|----------|-----------|
| 1. Glorification | -0.13** | 0.59** | -0.10** | 3.22 | 1.13 |
| 2. Constructive patriotism | | 0.39** | 0.18** | 4.97 | 0.74 |
| 3. Attachment | | | 0.11** | 4.58 | 0.92 |
| 4. NFC | | | | 4.08 | 0.83 |

** $p < .01$.

2.2.2. Constructive patriotism

We used the five-item scale adapted from [Schatz et al. \(1999\)](#). Example item: "I oppose some of Poland's policies because I care about my country and want to improve it"; $\alpha_{Study1} = 0.73$, $\alpha_{Study2} = 0.71$, $\alpha_{Study3} = 0.73$.

2.2.3. Need for cognition

We used the five-item scale from [Epstein et al. \(1996\)](#). Example item: "I prefer complex to simple problems"; $\alpha_{Study1} = 0.71$, $\alpha_{Study2} = 0.80$, $\alpha_{Study3} = 0.71$.

2.2.4. Faith in intuition

We used the five-item scale from [Epstein et al. \(1996\)](#). Example item: "I believe in trusting my hunches"; $\alpha_{Study2} = 0.74$, $\alpha_{Study3} = 0.80$.

2.2.5. Cognitive ability – Study 2

We used eleven matrices from Raven's Advanced Progressive Matrices Set I ([Jaworowska & Szustrowa, 1991](#); [Raven & Court, 1998](#)). The distribution of scores was strongly left-skewed (-1.57 , $SE = 0.12$), so to obtain a distribution closer to normal, logarithmic transformation was conducted. After the transformation, skewness was acceptable (-0.41 , $SE = 0.12$). The split-half reliability (with Spearman-Brown adjustment) was 0.71.

2.2.6. Cognitive ability – Study 3

We used six items from The International Cognitive Ability Resource Team (ICAR) base (<https://icar-project.com/>, 2014). ICAR is a cognitive ability measurement tool designed for use in online studies. Example item: "Michelle likes 96 but not 45; she also likes 540 but not 250. Which does she like: 86, 93, 98, 128, 132, 140, None of these, I don't know"; $\alpha = 0.54$.

2.2.7. Attachment

We used the eight-item scale adapted from [Roccas et al. \(2008\)](#). Example item: "I feel strongly connected with my nation"; $\alpha_{Study1} = 0.94$, $\alpha_{Study2} = 0.90$, $\alpha_{Study3} = 0.93$.

3. Results

For each study, we ran two regression analyses. Outcome variables were glorification or constructive patriotism, and predictors were: NFC (in all studies), FII (in Study 2, 3), cognitive ability (in Study 2, 3) and attachment (in all studies). We also calculated partial correlations between a form of patriotism (glorification or constructive patriotism) and: NFC (controlling for FII, cognitive ability, and attachment), FII (controlling for NFC, cognitive ability, and attachment), and cognitive ability (controlling for NFC, FII, and attachment). Details can be found in Supplemental Materials. In [Table 3](#), we only present r s and β s for separate studies and the results of the meta-analysis. For the meta-analysis, we used partial correlations as indicators of effect sizes.

We found support for all our hypotheses. In the meta-analysis, constructive patriotism was positively linked with NFC (random effect model $r = 0.18$, $p < .001$; H1 supported) and with cognitive ability ($r = 0.07$, $p = .042$; H3 supported). On the other hand, glorification was negatively linked with NFC ($r = -0.26$, $p < .001$; H2 supported) and with

Table 2

Means, standard deviations, and correlations of glorification, constructive patriotism, attachment, need for cognition (NFC), faith in intuition (FII), and cognitive ability in Study 2 (above diagonal) and Study 3 (below diagonal).

| | 1 | 2 | 3 | 4 | 5 | 6 | M | SD |
|----------------------------|---------|--------|--------|---------|---------|---------|------|------|
| 1. Glorification | – | 0.06 | 0.67** | -0.22** | 0.18** | -0.18** | 2.50 | 0.87 |
| 2. Constructive patriotism | -0.09** | – | 0.41** | 0.16** | 0.06 | 0.03 | 4.72 | 0.71 |
| 3. Attachment | 0.61** | 0.40** | – | -0.05 | 0.07 | -0.08 | 3.83 | 0.97 |
| 4. NFC | -0.21** | 0.25** | 0.10** | – | 0.05 | 0.22** | 4.55 | 0.85 |
| 5. FII | 0.19** | 0.13** | 0.23** | 0.07* | – | -0.03 | 3.82 | 0.76 |
| 6. Cognitive ability | -0.15** | 0.11** | -0.05 | 0.19** | -0.10** | – | 2.53 | 0.62 |
| M | 3.31 | 4.85 | 4.55 | 4.16 | 4.09 | 2.57 | | |
| SD | 1.13 | 0.76 | 0.90 | 0.81 | 0.73 | 1.40 | | |

* $p < .05$.

** $p < .01$.

Table 3

Effects of NFC, FII and cognitive ability on glorification and constructive patriotism in all individual studies and the summary of the internal meta-analysis.

| | Individual studies | | | | | | Internal meta-analysis | | | | | |
|---|--------------------|----------|----------|----------|----------|----------|------------------------|------------------|--------|---------------------|------------------|-------|
| | Study 1 | | Study 2 | | Study 3 | | Fixed effect model | | | Random effect model | | |
| | r | β | r | β | r | β | r | 95% CI | z | r | 95% CI | z |
| Effects on glorification | | | | | | | | | | | | |
| NFC | -0.21*** | -0.17*** | -0.23*** | -0.17*** | -0.34*** | -0.27*** | -0.27*** | [-0.303, -0.230] | -13.62 | -0.26*** | [-0.343, -0.175] | -5.78 |
| FII | | | 0.20*** | 0.14*** | 0.09** | 0.07** | 0.12*** | [0.066, 0.167] | 4.46 | 0.14* | [0.025, 0.243] | 2.41 |
| Cognitive ability | | | -0.12* | -0.08* | -0.08** | -0.06** | -0.09** | [-0.141, -0.038] | -3.42 | -0.09*** | [-0.141, -0.038] | -3.42 |
| Effects on constructive patriotism | | | | | | | | | | | | |
| NFC | 0.15*** | 0.14*** | 0.19*** | 0.18*** | 0.21*** | 0.19*** | 0.18*** | [0.144, 0.220] | 9.21 | 0.18*** | [0.141, 0.224] | 8.44 |
| FII | | | 0.03 | 0.02 | 0.05 | 0.04 | 0.04 | [-0.010, 0.094] | 1.60 | 0.04 | [-0.010, 0.094] | 1.60 |
| Cognitive ability | | | 0.02 | 0.02 | 0.10** | 0.09** | 0.08** | [0.028, 0.130] | 3.01 | 0.07* | [0.003, 0.142] | 2.03 |

Note. In the left side of the table we present links between patriotism (glorification and constructive patriotism) and cognitive variables (NFC, FII and cognitive ability) in all the individual studies. We report partial correlations (r) calculated controlling for all the cognitive variables measured in a given study and for attachment. We also report standardised regression coefficients (β) calculated with all cognitive variables measured in a given study and for attachment included as predictors. In the right side of the table, we present the results of the meta-analysis. We used partial correlations as indicators of effect sizes (r). We also report 95% confidence intervals for r values and z values. We report results for fixed and random effect models.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

cognitive ability ($r = -0.09, p < .001$; H4 supported). Glorification was also positively linked with FII ($r = 0.14, p = .016$; H5 supported). All of these links are significant in both fixed- and random-effect models, suggesting their generalizability. Results of correlation and regression analyses for separate studies also support all of our hypotheses, with one exception. We did not find the link between cognitive ability and constructive patriotism in Study 2. This may be caused by the cognitive ability measure used in this study not discriminating well among highly intelligent participants. The distribution of results of Raven's Matrices test (Raven & Court, 1998) was strongly left-skewed, suggesting that we were unable to capture differences between participants high in cognitive ability. Another explanation may be the sample itself. Study 2 was conducted on a students sample. It would be justified to assume that this sample is higher in cognitive ability and has a lower variance of cognitive ability than the representative sample. Therefore, the effect of cognitive ability on constructive patriotism may be – in fact – insignificant.

4. Discussion

This research used dual-process theories to improve our understanding of the cognitive underpinnings of glorification and constructive patriotism. We treated glorification as a set of overlearned beliefs based on System 1 processing that triggers intuitive positive evaluations of one's country. On the other hand, the critical reflection that is characteristic of constructive patriotism requires analytical System 2 processing. Therefore, we expected both these types of patriotism to be linked with two prerequisites of System 2 – the willingness to engage in

effortful processing (NFC) and cognitive ability. Moreover, we expected glorification to be positively related to confidence in intuitions and hunches (FII), as such confidence would prevent the re-evaluation of an intuitively positive outlook on one's country. We found support for all of these predictions. Constructive patriotism was positively and glorification negatively linked with NFC and cognitive ability. Glorification was also positively linked with FII.

Previous research has shown links between national identification and different variables related to the willingness and ability to process information in an effortful, analytical way (Huddy & Khatib, 2007; Schatz et al., 1999; Sekerdej et al., 2022; Williams et al., 2008). However, our studies are the first to explicitly examine such basic cognitive underpinnings of glorification and constructive patriotism as thinking style and cognitive ability. Our findings show that glorification is linked with the tendency to use intuitive thinking which suggests that glorification is a more default reaction to ingroup-related problems. On the other hand, constructive patriotism is linked with a more reflective thinking style, which hints that it requires overcoming the default mechanisms' influence. This suggests that general reflectiveness may help tone down the negative consequences of glorification by lowering the need to defend one's ingroup. This mechanism requires further research; however, the presented results help better understand the roots of different types of patriotism and the processes involved in making decisions and judgements regarding one's country and nation.

When it comes to cognitive ability, even though we examined its links with patriotism in this article, these analyses are limited. We only tested the hypotheses regarding cognitive ability that were based on the approach to dual-process theories presented by Stanovich (2009).

Therefore, cognitive ability was treated mainly as a supporting variable complementing the model. It is worth noting that links between cognitive ability and politically charged variables (e.g. patriotism, political orientations, etc.) are probably much more complex than what could be inferred from this article only. For example, some research suggests that cognitive ability is positively linked with political liberalism (Kanazawa, 2009; Kanazawa, 2010) and lower attachment to group symbols, rules and authorities (Pennycook et al., 2014). A higher level of education was shown to correlate with lower concern for nationalistic issues and a stronger focus on active citizenship (Straughn & Andriot, 2011). Moreover, lower cognitive ability is linked with higher prejudice towards outgroups (Hodson & Busseri, 2012). These findings are in line with the relations between cognitive ability and patriotism we presented in this paper. On the other hand, however, results showing more problematic aspects of cognitive ability can also be found. For example, cognitive ability is, in certain conditions, linked with higher intolerance for different beliefs that one is holding (Ganzach & Schul, 2021). Cognitive ability was also found to be negatively linked with patriotism in general (Pennycook et al., 2014). Such results show that the connections between glorification, constructive patriotism, and cognitive ability are complex, multifaced, and require further investigation.

Another downside of our research is its correlational nature which makes drawing conclusions about causality problematic. Therefore, we remain cautious when suggesting the directions of presented relationships. On the other hand, even correlational studies may provide hints regarding causes and effects (Pearl, 2013). Information processing is more fundamental than the complex systems of beliefs and behaviours that constitute patriotism. Therefore, we believe that information processing should influence patriotism rather than the other way around. Nevertheless, future studies should include experimental designs to investigate whether information processing can influence patriotism. If it were possible to increase a critical attitude towards one's country by influencing how information is processed, that would be an important finding for education, politics, and social interventions.

Ethical issues statement

The Code of Ethics of the World Medical Association and APA ethical standards were followed in the conduct of the studies presented in this manuscript. Before taking part in any of the studies, participants gave informed consent to participate. The studies were approved by an ethics committee – Komisja ds. Etyki Badań Naukowych Instytutu Psychologii Uniwersytetu Jagiellońskiego [Research Ethics Committee of Institute of Psychology at Jagiellonian University], approval number: KE/02/122018.

Funding statement

This research was funded by the National Science Centre grant no. 2017/26/E/HS6/00402 awarded to Maciej Sekerdej. We thank the Priority Research Area “Society of the Future” under the program “Excellence Initiative – Research University” for supporting the editorial work of this publication.

CRedit authorship contribution statement

Maryna Kołeczek: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Visualization. **Katarzyna Jamróz-Dolińska:** Conceptualization, Methodology, Writing – review & editing, Funding acquisition. **Mirjana Rupa:** Conceptualization, Methodology, Writing – review & editing. **Maciej Sekerdej:** Conceptualization, Writing – review & editing, Supervision, Project administration, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Research data

The raw data that support the presented findings, R code, and codebooks are openly available in The Open Science Framework Repository at https://osf.io/v9xny/?view_only=9b4727dfd12b4a9f9263446a06d846f6.

Appendix A. Scales of glorification, constructive patriotism, and attachment and ICAR items

Patriotism scales

Glorification

Please share your opinion about Poland and your attitude towards it. There are no right or wrong answers – mark the answers according to what you think/feel. Mark the extent to which you agree with the following statements, on a scale from 1 - “strongly disagree” to 6 - “strongly agree”.

1. Other nations can learn a lot from us.
2. It is best to rely on our leaders in difficult times.
3. My nation is better compared to other nations.
4. All Poles should respect their national customs, institutions and leaders.
5. Compared to other nations, we behave in a highly moral manner.
6. Criticising your nation is a sign of disloyalty.
7. My nation is better than any other nation in virtually every respect.
8. When our leaders enact new laws or regulations, they usually have compelling reasons for doing so.

Constructive patriotism

Please share your opinion about Poland and your attitude towards it. There are no right or wrong answers - mark the answers according to what you think/feel. Mark the extent to which you agree with the following statements, on a scale from 1 - “strongly disagree” to 6 - “strongly agree”.

1. I oppose some Polish policies because I care about my country and want to improve it.
2. I express my attachment to Poland by supporting efforts aimed at positive change.
3. People should work hard to move this country in a positive direction.
4. If one loves Poland, one should notice its problems and work to solve them.
5. If I criticise Poland, I do so out of love for my country.

Attachment

Please share your opinion about Poland and your attitude towards it. There are no right or wrong answers - mark the answers according to what you think/feel. Mark the extent to which you agree with the following statements, on a scale from 1 - “strongly disagree” to 6 - “strongly agree”.

1. I feel strongly connected with my nation.
2. Belonging to my nation is an important part of my identity.
3. I am happy when I can do something for the good of my nation.
4. It is important for me to see myself as a citizen of my nation.
5. I am sincerely devoted to my nation.
6. It is important to me that others see me as part of my nation.
7. I like helping my compatriots.

8. When I talk about my nation, I usually use the form “we” rather than “them”.

ICAR items used

We used the following items from verbal reasoning scale of ICAR: VR.32 (q_12032), VR.23 (q_12023), VR.13 (q_12013), VR.14 (q_12014), VR.16 (q_12016), VR.39 (q_12039). The items were presented in the above order. These items and the full scale can be accessed at <https://icar-project.com/>.

Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2022.111670>.

References

- Donnelly, B. (2017, January 17). *Mrs. May answers the questions with the worst possible answers*. Federal Trust. <https://fedtrust.co.uk/mrs-may-answers-the-questions-with-the-worst-possible-answers/>. (Accessed 22 January 2022).
- Carl, N. (2018). CSI Brexit 4: Reasons Why People Voted Leave or Remain. *Centre for Social Investigation*, 1–6. <http://csi.nuff.ox.ac.uk/wp-content/uploads/2018/04/Carl-Reasons-Voting.pdf>. (Accessed 20 April 2022).
- Clarke, H. D., Goodwin, M., & Whiteley, P. (2017). Why Britain voted for Brexit: An individual-level analysis of the 2016 referendum vote. *Parliamentary Affairs*, 70(3), 439–464. <https://doi.org/10.1093/pa/gsx005>
- Roccas, S., Klar, Y., & Liviatan, I. (2006). The paradox of group-based guilt: Modes of national identification, conflict vehemence, and reactions to the in-group's moral violations. *Journal of Personality and Social Psychology*, 91(4), 698–711. <https://doi.org/10.1037/0022-3514.91.4.698>
- Roccas, S., Sagiv, L., Schwartz, S., Halevy, N., & Eidelson, R. (2008). Toward a unifying model of identification with groups: Integrating theoretical perspectives. *Personality and Social Psychology Review*, 12(3), 280–306.
- Schatz, R. T., Staub, E., & Lavine, H. (1999). On the varieties of national attachment: Blind versus constructive patriotism. *Political Psychology*, 20(1), 151–174. <https://doi.org/10.1111/0162-895X.00140>
- Staub, E. (1997). Blind versus constructive patriotism: Moving from embeddedness in the group to critical loyalty and action. In D. Bar-Tal, & E. Staub (Eds.), *Nelson-hall series in psychology. Patriotism: In the lives of individuals and nations* (pp. 213–228). Chicago: Nelson-Hall.
- Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality*. New York: Harpers.
- Kosterman, R., & Feshbach, S. (1989). Toward a measure of patriotic and nationalistic attitudes. *Political Psychology*, 10(2), 257–274. <https://doi.org/10.2307/3791647>
- Sekerdej, M., & Roccas, S. (2016). Love versus loving criticism: Disentangling conventional and constructive patriotism. *British Journal of Social Psychology*, 55(3), 499–521. <https://doi.org/10.1111/bjso.12142>
- Rupar, M., Sekerdej, M., & Jamróz-Dolińska, K. (2021). The role of national identification in explaining political and social civic engagement. *Group Processes & Intergroup Relations*, 24(8), 1515–1537. <https://doi.org/10.1177/1368430220967975>
- Schatz, R. T. (2018). A review and integration of research on blind and constructive patriotism. In M. Sardoc (Ed.), *Handbook of patriotism* (pp. 1–19). Berlin: Springer. https://doi.org/10.1007/978-3-319-30534-9_30-1.
- Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. Oxford: Oxford University Press.
- Kaniasty, K. (2003). *Kłeska żywiołowa czy katastrofa społeczna?* Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin, & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Totnes: Brooks/Cole.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel, & W. G. Austing (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, 302(5643), 290–292. <https://doi.org/10.1126/science.1089134>
- MacDonald, G., & Leary, M. R. (2005). Why does social exclusion hurt? The relationship between social and physical pain. *Psychological Bulletin*, 131(2), 202–223. <https://doi.org/10.1037/0033-2909.131.2.202>
- Blackmore, S. (1999). *The meme machine*. Oxford: Oxford University Press.
- Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge: Harvard University Press.
- Bar-Tal, D. (1993). Patriotism as fundamental beliefs of group members. *Politics and the Individual*, 3(2), 45–62.
- Finell, E., & Zogmaister, C. (2015). Blind and constructive patriotism, national symbols and outgroup attitudes. *Scandinavian Journal of Psychology*, 56(2), 189–197. <https://doi.org/10.1111/sjop.12193>
- Edis, T., & Boudry, M. (2019). Truth and consequences: When is it rational to accept falsehoods? *Journal of Cognition and Culture*, 19(1–2), 147–169. <https://doi.org/10.1163/15685373-12340052>
- Stanovich, K. E. (2009). Distinguishing the reflective, algorithmic, and autonomous minds: Is it time for a tri-process theory? In J. S. B. T. Evans, & K. Frankish (Eds.), *In two minds: Dual processes and beyond* (pp. 55–88). Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199230167.003.0003>.
- Evans, J. S. B., & Over, D. E. (1996). *Rationality and reasoning*. Hove: Psychology Press.
- Evans, J. S. B., & Stanovich, K. E. (2013). Dual-process theories of higher cognition: Advancing the debate. *Perspectives on Psychological Science*, 8(3), 223–241. <https://doi.org/10.1177/1745691612460685>
- Slooman, S. A. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin*, 119(1), 3–22. <https://doi.org/10.1037/0033-2909.119.1.3>
- Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences*, 23(5), 645–665. <https://doi.org/10.1017/S0140525X00003435>
- Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology*, 71(2), 390–405. <https://doi.org/10.1037/0022-3514.71.2.390>
- Stanovich, K. E., & West, R. F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology*, 89(2), 342–357. <https://doi.org/10.1037/0022-0663.89.2.342>
- Huddy, L., & Khatib, N. (2007). American patriotism, national identity, and political involvement. *American Journal of Political Science*, 51(1), 63–77. <https://doi.org/10.1111/j.1540-5907.2007.00237.x>
- Williams, R. L., Foster, L. N., & Krohn, K. R. (2008). Relationship of patriotism measures to critical thinking and emphasis on civil liberties versus national security. *Analyses of Social Issues and Public Policy*, 8(1), 139–156. <https://doi.org/10.1111/j.1530-2415.2008.00165.x>
- Sekerdej, M., Rupar, M., Jamróz-Dolińska, K., & Koleczek, M. (2022). *Greater expectations or less sugar-coating? Perceptual underpinnings of constructive patriotism*. Unpublished results.
- Goh, J. X., Hall, J. A., & Rosenthal, R. (2016). Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass*, 10(10), 535–549. <https://doi.org/10.1111/spc3.12267>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). GPower 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>
- Jaworowska, A., & Szustrowa, T. (1991). *Podręcznik do testu Matrycy Ravena [Manual for the Raven's Matrices test]*. Warsaw: Pracownia Testów Psychologicznych PTP.
- Raven, J. C., & Court, J. H. (1998). *Raven's progressive matrices and vocabulary scales*. Oxford: Oxford psychologists Press.
- Kanazawa, S. (2009). IQ and the values of nations. *Journal of Biosocial Science*, 41(4), 537–556. <https://doi.org/10.1017/S0021932009003368>
- Kanazawa, S. (2010). Why liberals and atheists are more intelligent. *Social Psychology Quarterly*, 73(1), 33–57. <https://doi.org/10.1177/0190272510361602>
- Pennycook, G., Cheyne, J. A., Barr, N., Koehler, D. J., & Fugelsang, J. A. (2014). The role of analytic thinking in moral judgements and values. *Thinking & Reasoning*, 20(2), 188–214. <https://doi.org/10.1080/13546783.2013.865000>
- Straughn, J. B., & Andriot, A. L. (2011). Education, civic patriotism, and democratic citizenship: Unpacking the education effect on political involvement 1. *Sociological Forum*, 26(3), 556–580. <https://doi.org/10.1111/j.1573-7861.2011.01262.x>
- Hodson, G., & Busseri, M. A. (2012). Bright minds and dark attitudes: Lower cognitive ability predicts greater prejudice through right-wing ideology and low intergroup contact. *Psychological Science*, 23(2), 187–195. <https://doi.org/10.1177/0956797611421206>
- Ganzach, Y., & Schul, Y. (2021). Partisan ideological attitudes: Liberals are tolerant; the intelligent are intolerant. *Journal of Personality and Social Psychology*, 120(6), 1551–1566. <https://doi.org/10.1037/pspi0000324>
- Pearl, J. (2013). *Causality: Models, reasoning, and inference*. Cambridge: Cambridge University Press.