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Historical myths define group boundaries: A mathematical sketch and evidence from Ukraine

Matthew R. Zefferman^{a,b} and Paul E. Smaldino^{c,d*} 

^aDepartment of Defense Analysis, Naval Postgraduate School, Monterey, CA, USA; ^bInstitute of Human Origins, Arizona State University, Tempe, AZ, USA; ^cDepartment of Cognitive and Information Sciences, University of California, Merced, CA, USA and ^dSanta Fe Institute, Santa Fe, NM, USA
mrzeffer@nps.edu
psmaldino@ucmerced.edu
<https://zefferman.com>
<https://smaldino.com>

*Corresponding author.

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Abstract

The authors' proposal for the evolutionary origins of historical myths does not hold up to scrutiny, as illustrated by a simple mathematical model. Group-level explanations, such as defining

the conditions for in-group membership, are dismissed by the authors but are far more plausible, as illustrated by the ongoing war in Ukraine.

The target article proposes that historical myths are cultural technologies for coalitional recruitment that exploit cognitive mechanisms for measuring fitness interdependence. The main challenge for this proposal, as we see it, is that the fitness interdependence between individuals in large groups is vanishingly small. Therefore, any cognitive mechanisms that explicitly evolved for identifying fitness interdependence worth their salt are unlikely to be fooled by historical myths to the contrary.

Imagine a world where there is a large-ish population, say $N = 100,001$ individuals. Each individual starts with some amount of resources, G , and can contribute some amount, $b < G$, to a collective enterprise. Any amount that is contributed (in a typical public-goods-like fashion) is doubled and the results are shared with everyone else in the group. Therefore, the population generates its highest total resources, $N(G + b)$, if everyone contributes, and its lowest total resources, NG , if no one contributes.

For the individual, however, it always pays more to not contribute. Generally, the payoff to an individual who contributes is $G + 2pb - b$, where p is the fraction of other individuals who contribute. The payoff to a non-contributor is $G + 2pb$. In other words, non-contributors always do better than contributors, no matter how much the latter contribute, because the non-contributors get all the benefits of the collective enterprise but do not pay the costs. This is a standard linear public goods game. Note that there is very little fitness interdependence between two typical members of this group. For this collective enterprise, it is at most $2b/N$.

Now imagine that some people in the population are conditional contributors who only contribute if they hear historical myths that their population is an ancient group with a long history. Other people either lack this cognitive machinery or have a more refined cognitive machinery that is not easily fooled by historical myths. When hearing historical myths, the former would contribute to the collective enterprise and the latter would not. Even assuming that some actors are willing to pay the cost of creating and perpetuating cultural myths, the individuals who are not fooled by these myths will tend to do better because they receive the benefits of cooperation without paying the cost. This suggests that malfunctioning cognitive mechanisms for fitness interdependence is an unlikely explanation for the content of historical myths because such cognitive mechanisms would be quickly weeded out.

The authors assert that their explanation does not require cultural group selection and that individual cognitive mechanisms suffice to explain historical myths. However, population-level explanations like cultural group selection can explain *why* individual-level cognitive mechanisms are or are not likely to evolve. In particular, a cultural group selection perspective suggests a functional explanation of historical myths as a group-level trait (Smaldino, 2014) for indicating the scale of cultural variation and, therefore, the scale of cooperation (Henrich & Muthukrishna, 2021). Cultural group selection models suggest that the scale of cooperative interaction is likely to be at the scale of cultural variation, which can be measured by a cultural fixation index (Bell, Richerson, & McElreath, 2009; Handley & Mathew, 2020; Henrich, 2004; Richerson et al., 2016), which

quantifies how much total cultural variation can be explained by variation between groups. This may be especially relevant in understanding intergroup conflict (Zefferman & Mathew, 2015).

We suspect that the function of many historical myths is to clarify the scale of existing cultural variation. That is, they help distinguish cultural in-group from cultural out-group. This hypothesis predicts that the scale of historical myths, especially successful ones, will tend to correspond to the scale of cultural boundaries – not to the scale of fitness interdependence. This would especially be true for large groups, as fitness interdependence decreases exponentially with group size and is therefore very small in groups the size of bands, tribes, or nations (Henrich, 2004). Cultural similarity within groups has no such bounds on scale.

Take the authors’ example of the ongoing conflict in Ukraine and the historical myths spread by Putin and his allies about the long historical association between Ukraine and Russia – that they are all “one people.” According to the authors, the function of this rhetoric was to encourage the Ukrainian people to join with Russia by activating their cognitive mechanisms for detecting their fitness interdependence with the Russian people. If so, it failed spectacularly. However, we suggest that the function of these myths is to define cultural boundaries for Putin’s domestic audience. Putin not only invoked a long history of Ukrainians and Russians as one people but also invoked cultural similarities with some (especially Russian-speaking) people in Ukraine against those who he identifies as “Nazis.”

To Westerners, the idea that Ukraine – with a Jewish president whose family members were killed in the holocaust – is led by Nazis is ludicrous. But in Putin’s narrative, “Nazism” is a stand-in term for Western culture and influence. Most of Putin’s speech marking the beginning of the 2022 invasion of Ukraine focused not on the unity of the Russian and Ukrainian people, but on the dangers to Russia due to Western expansion, comparing this expansion to the 1941 invasion of Russia by Nazi Germany – the last time Russia was invaded from the West (Atlantic Council, 2023). The initial goal of the Russian operation was rapid neutralization of Ukrainian leadership, indicating his promise to “de-nazify” Ukraine was aimed at Ukraine’s elected political leaders. When the Russian forces met with stiff resistance, however, the narrative quickly shifted to where Russian state media defined “Nazism” in Ukraine as applying to a “considerable number of the population (very likely most of it),” and claimed that Ukrainians “disguise Nazism as the aspiration to ‘independence’ and the ‘European’ (Western, pro-American) path,” and that “the collective West is in itself the architect, source, and sponsor of Ukrainian Nazism” (Sergeyev, 2022; Snyder, 2022; Stanley, 2022). Instead of activating Ukrainian cognitive machinery to see fitness interdependence with Russia, Putin’s historical myths seem to be about defining a Russian “us” in opposition to a Ukrainian or Western “them.”

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Authors’ Response

Coalitional psychology and the evolution of nationalistic cultures

Amine Sijilmassi^{a*} , Lou Safra^{b,†}  and
Nicolas Baumard^{a,†} 

^aDépartement d’études cognitives, Institut Jean Nicod, ENS, EHESS, PSL University, CNRS, Paris, France and ^bCenter for Political Research-CEVIPOF, Sciences Po (CNRS UMR 7048), Paris, France
amine.sij@gmail.com
lou.safra@sciencespo.fr
nbaumard@gmail.com
<https://sites.google.com/site/lousafra/home>
<https://nicolasbaumards.org/>

*Corresponding author.

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Abstract

The commentaries addressed various aspects of our account of historical myths. We respond by clarifying the evolutionary theory of coalitional psychology that underlies our claims (R1). This addresses concerns about the role of fitness interdependence in large groups (R2), cultural transmission processes (R3), alternative routes to nation-building (R4) and the role of proximal mechanisms (R5). Finally, we evaluate alternative theories (R6) and discuss directions for future research (R7).

We sincerely thank all commentators for their thoughtful engagement with our article and for sharing their valuable insights. We are pleased that our work has garnered attention from researchers across a broad spectrum of disciplines. Most major traditions in

[†]These authors contributed equally to this work.