

## RESEARCH ARTICLE

# The evolutionary psychology of small-scale versus large-scale politics: Ancestral conditions did not include large-scale politics

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## Abstract

The current research question sought to examine political psychology as it relates to evolutionary mismatch. The basic hypothesis is that people will be more cognitively prepared to think about political situations that are relatively small in scale compared with political situations that are large in scale. This research also examined the effects of whether the political situation is highly relevant to oneself. To test these questions, 49 young adults were presented with four sets of instructions. They were asked to write paragraphs describing (i) a large-scale, self-relevant political situation, (ii) a large-scale non-self-relevant political situation, (iii) a small-scale self-relevant political situation, and (iv) a small-scale non-self-relevant political situation. Paragraphs generated by the participants were analyzed using Tyler's (2013) Writing Sample Readability Analyzer. Results demonstrated that paragraphs designed for large-scale political situations had more sentences and were less readable than paragraphs designed for small-scale situations—while paragraphs designed for small-scale political situations were relatively readable and included more words per sentence, suggesting that, consistent with the core hypothesis, participants had an easier time processing information related to small-scale political situations than large-scale political situations. Implications for the nature of modern politics are discussed.

Evolutionary psychology partly addresses the idea of “evolutionary mismatch,” which suggests that for many behavioral domains, our minds evolved for ancestral conditions that do not characterize modern Westernized conditions (see Wilson, 2007). A classic example of such mismatch pertains to modern food preferences. Under ancestral conditions—when drought and famine were common on the African savanna—a preference for high fat, sugary foods would have been adaptive because that would have led to seeking out such foods, consequentially storing fat on one's bones to help him or her make it through the next famine (see Platek, Geher, Heywood, Stapell, Porter, & Waters, 2011). From the evolutionary perspective, a psychobiological feature such as food preference takes a long time to be selected out of a population, and because of that, our modern minds still hold this preference for high fat and sugary foods. Unfortunately, although such preferences in modern day society are extremely unhealthy, the market is flooded with readily available inexpensive foods because of modern agriculture, and industry (e.g., McDonalds). Evolutionary mismatches such as this can help explain how behavior plays out in a way that would have been adaptive under ancestral conditions (when the lion's share of human adaptations evolved), but that are no longer “needed” or

“beneficial” given the details of modern, Westernized contexts.

## POLITICS AND EVOLUTIONARY PSYCHOLOGY

Several studies have shown that political conflict predates the emergence of *Homo sapiens* and has likely typified hominids for thousands of generations (Boehm, 2000). The field of Evolutionary Political Science examines psychological processes in a way that considers ancestral social environments and how such environments have come to shape politically relevant processes (Bingham & Souza, 2009, 2012; Lopez & McDermott, 2012). This field often examines heuristic-based processes and cognitive biases that would have conferred advantages to our ancestors (McDermott, Fowler, & Simirnov, 2008).

A basic idea in this area pertains to the fact that ancestral human social groups rarely exceeded 150 individuals (Dunbar, 1998). In such small-scale environments, politically-based issues, such as the need to share or to ensure cooperative behavior, shaped human social psychology to be attuned to political issues (Petersen, 2009). In other words, humans evolved to operate within small-scale social environments (unlike those found in modern Westernized conditions). A

corollary to this point is the fact that in so many ways (such as the size of modern civilizations, often in the hundreds of thousands or even millions), modern political life often mismatches basic aspects of our ancestral past (Petersen, 2009, 2012; Petersen, Sznycer, Cosmides, & Tooby, 2012).

Related to the reasoning of evolutionary mismatch, and relevant to the current work, several researchers (e.g., Hibbs & Olsson, 2004) have argued that people often see politics as something very removed from their everyday lives. According to Hibbs and Olsson (2004), between about 50 000 and 6 000 years ago, our species experienced a shift from small-scale conflict to large-scale politics. Because social environments transformed more rapidly than did evolved psychological mechanisms, certain problems associated with evolutionary mismatched environmental conditions emerged in modernized populations (Geher, 2014; Geher & Kaufman, 2013; Carmen, *et al.*, 2013). For example, humans have an evolved taste preference for high-sugar and high-fat foods because these foods helped facilitate survival under ancestral conditions. Today, however, modern agriculture has provided us with an excess amount of these foods, which exploits our evolved taste preferences, often leading to negative outcomes, such as obesity and cardiovascular disease (Geher, 2014). The current paper, importantly, suggests that this same kind of mismatch that bears on nutritional issues likely parallels human political psychology.

Despite the technological and demographic changes associated with agriculture and the industrial revolution, any evolved decision-making system that navigates political conflicts in modern contexts must have been designed by natural selection to operate in small-scale social ecologies such as those faced by human ancestors (Petersen, 2012). In the small-scale world of our ancestors, face-to-face interaction would provide cues for social decision-making (Petersen, 2012). Our ancestors used face-to-face interactions to get information (Petersen, 2009). This small-scale bias helps explain the potency of social emotions in regard to how one responds to others in the group (Petersen, Sznycer, Cosmides & Tooby, 2012). The large-scale nature of modern politics does not fit well within our evolved psychology of group conflict. Of the two hundred twenty-eight million people in the multimedia audience of the 2010 US census, over 80% reported viewing cable television in the prior week, and over 75% reported accessing the internet over the last thirty days (U.S. Census Bureau, 2010). Given the high access to modern forms of communication coupled with the large-scale nature of modern societies, the current research seeks to examine how modern-day political behaviors fit with our evolved small-scale psychology.

The current research examines the nature of human politics from an evolutionary perspective. In a general sense, this research addresses whether our minds differentially process large-scale political situations compared to small-scale political situations. Dunbar (1992) famously provides neurocognitive and social-structure

data suggesting that until the relatively recent invention of agriculture, human social structures were comprised of nomadic clans including about 150 individuals—many of whom were kin—and all of whom were individuals who would likely remain in the clan for a long time. There were not many strangers in the daily lives of our pre-agrarian ancestors. As such, political situations that our ancestors would have encountered would have been of the small-scale variety. These would have included struggles for status within a group, rumor dissemination, mating-relevant scandals, issues of leadership and power, and so forth. They would *not* have included thoughts related to large-scale societies or international issues, simply because such things did not exist. The mismatch between ancestral and modern surroundings can have surprising results that are hard to understand without the light of evolutionary perspective (Lopez, McDermott, & Petersen, 2011).

## HYPOTHESES

The primary hypothesis is that small-scale political situations should be more cognitively accessible than large-scale political situations. Importantly, by “more cognitively accessible,” we specifically mean (operationally) that people will write more simply and more easily when given a task of writing about a small-scale versus a large-scale political scenario. Thus, to address *cognitive accessibility*, participants were asked to write paragraphs describing political situations that varied in scale (large vs. small-scale) along with self-relevance (relevant to oneself or not)—as self-relevance should naturally affect whether one is engaged with a political situation. To operationalize cognitive accessibility, Tyler’s (2013) Writing Sample Readability Assessment was used. This measure allows for writing samples to be examined on the broad dimensions of complexity and readability. Specifically, this instrument allows one to examine a sample of writing related to (i) number of words used per sentence, (ii) number of characters used, (iii) number of sentences, (iv) reading level (literally translating to grade-level), (v) complexity, and (vi) ease of readability. The primary prediction here is that samples produced by participants to represent small-scale political situations would be more readable (across several of these indices) than samples produced to represent large-scale political situations—as such a pattern would provide evidence that small-scale political situations are more cognitively accessible.

## METHOD

### Participants

A total of 190 students from the State University of New York at New Paltz initially participated in this study. Ages ranged from 19 to 42 ( $M_{age} = 21.89$ ,  $SD = 5.88$  years), with 135 female participants, 57 male participants, and 5 who preferred not to answer. There was significant attrition, and only 49 participants ended up providing fully

useable data. We believe, based partly on conversations with participants in the study, that several individuals found the task of writing four essays too much like a difficult school project and, thus, opted to provide only partial data. All participants were volunteers. Also, please note that the original de-identified data from this study are archived in a secure electronic space that we, the researchers, have access to. We expect and plan to store these data for at least 10 years, per the guidelines of EJSP.

### Design

A 2 × 2 within-subjects design was used for this study. The independent variables were level of political scale (large vs. small-scale) and relevance to self (self-relevant vs. not). Four scenarios were derived from these levels. The dependent variables pertained to indices of writing production, fluidity, and clarity as analyzed by the Writing Sample Readability Analyzer (Tyler, 2013).

### Materials and Procedure

Data were collected as part of a web-based questionnaire administered electronically via SurveyMonkey (www.surveymonkey.com), a web-based survey provider. Participants were recruited through an e-mail sent to the school-wide listserv. The survey began with the following demographic-related questions: age, gender, current state of employment, student status, and United States citizenship. These demographics were followed by four questions presented in random order that asked participants to imagine various scenarios in which there was a political issue to consider. Participants were then asked to the best of their ability to come up with a scenario between one and three paragraphs.

The following definitions of the independent variables were provided (verbatim) to all participants prior to the start of the survey:

*Large-scale politics* relates to such issues as government, international relations, and so forth (e.g., the current US policy on global warming).

*Small-scale or immediate politics* surround a person in his or her local ecosystems (e.g., having to publicly agree with one's boss at work even if he or she really doesn't agree with the stance).

*Self-relevant* is something that directly impacts your life.

*Non-self-relevant* is something that does not clearly relate to your life.

Based on which of the four conditions was being tapped at the time, one of four sets of instructions was provided as well as a sample response. The instructions for each of the scenarios, presented in a random order, were as follows:

- Please imagine and write a scenario below in which there are large-scale politics and it is self-relevant. Brief Example: A candidate running for governor in your state—that you voted against—won—but it

looks like s/he used unethical means to bring people out to the polls.

- Please imagine and write a scenario below in which there are small-scale politics and it is self-relevant. Brief Example: You do the majority of the work on a group project, but one of the group members (who did nothing) tells the professor that you did not contribute so the professor gives you a lower grade.
- Please imagine and write a scenario below in which there are large-scale politics and it is not self-relevant. Brief Example: A candidate running for governor in an adjacent state won—but it looks like s/he used unethical means to bring people out to the polls.
- Please imagine and write a scenario below in which there are small-scale politics and it is not self-relevant. Brief Example: There is a student in class whom the instructor almost never calls on even though s/he always raises his or her hand and has insightful and relevant answers when s/he is allowed to answer. Instead, the instructor always calls on a different student.

Informal analyses of samples of writing that were produced suggested that the participants who did complete the survey generally wrote essays with content that matched the instructions. For prototypical examples of each of these four kinds of scenarios produced by actual participants, see Table 1.

### RESULTS

Six dependent variables representing writing complexity were examined. Each one of these was examined relevant to two independent variables—level of politics (large-scale vs. small-scale) and self-relevance (self-relevant vs. non-self-relevant). These independent variables were examined on a within-group basis, as all participants were asked to write paragraphs describing political situations that related to each of these independent variables. Specifically, participants wrote four paragraphs, describing political situations that were (i) large-scale and self-relevant, (ii) large-scale and non-self-relevant, (iii) small-scale and self-relevant, and (iv) small-scale and non-self-relevant. Thus, for each of the dependent variables, a 2 × 2 within-groups ANOVA was computed. These analyses are presented as a function of each dependent variable. Recall that the independent variables are markers of writing that speak to different facets of simplicity and readability. Our primary hypothesis, again, is that small-scale political contexts will tend to lead to writing that is relatively simple and readable (as a possible way of operationally defining cognitive accessibility).

#### Number of Sentences

The total number of sentences used in the paragraphs varied significantly as a function of political scale ( $F(1, 43) = 14.89, p = 0.000; \eta^2 = 0.26$ ), but not

**Table 1.** Prototypical examples of each of four kinds of scenarios produced by actual participants

Type of politics	Scenario	Sentences	Words	Characters	Flesch	FOG
Large-scale self-relevant	The spending of tax payers dollars by the federal government is an issue of relevance to the individual. Recently, the government has been heavily financing military operatives and technology. Instead of distributing reaming funds to other sectors of our nation's social programs, the government continually expands the budget for military spending, even if not necessary. Structuring our nation's security to improve our defenses and positioning in the world is critical. However at what end? Congressmen from Ohio, claiming to be fiscal conservatives, have issued the production of more tanks, costing the nation additional billions of dollars. According to general officers, these tanks aren't even desperately needed at the moment. Nonetheless instead of doling out what little is left of the nations' financial reserve to consolidate the education system and the infrastructure of many other public institutions. As a taxpayer, who's directly effected by the government's fiscal policy, I'm appalled with the congress' inability to coordinate efforts to evenly and fairly allocate the re-serves to improve both the external and internal defenses of this country.	9 (above the mean for this dependent variable)	19.33 (above the mean for this dependent variable)	5.56 (above the mean for this dependent variable)	46.21 (below the mean for this dependent variable)	14.17 (above the mean for this dependent variable)
Large-scale not self-relevant	The federal government prohibits the distilling, sale, and consumption of moonshine. I do not distill or drink moonshine, but the government uses tax dollars to enforce the prohibition. In spite of cracking down on "moon-shiners," people continue to distill, buy, and drink moonshine. In response to this, the government increases taxes so the effort to stop "moonshiners" can get more funding.	4 (below the mean for this independent variable)	15.25 (above the mean for this dependent variable)	5.21 (above the mean for this dependent variable)	55.44 (below the mean for this dependent variable)	14.62 (above the mean for this dependent variable)
Small-scale self-relevant	Study Abroad programs are often linked to specific majors. They do not have a program that includes my major in any country that i would like to go to. If I go to a country that doesn't have a program for my major and take all the credits as elective credits I don't think I will be able to graduate on time. I could always take summer classes, but they have to be at a 4 year accredited school which could cost a lot of money. I could stay here for the summer and take classes but then i will have to also pay for house for the summer. If I don't take any classes to make up for the credits I wont be putting toward my major while abroad, I am not going to graduate on time. If I don't graduate on time that means I am going to be spending another semester at school, which means I will have to be paying for another semester at school.	7 (below the mean for this dependent variable)	24.43 (above the mean for this dependent variable)	3.87 (below the mean for this dependent variable)	78.15 (above the mean for this dependent variable)	10.1 (below the mean for this dependent variable)
Small-scale not self-relevant	In a class there is a student who is very insightful and who allows him/herself to have an open mind and think outside the box. However, the teacher of the class doesn't agree with this student on almost anything	6 (below the mean for this dependent variable)	22.83 (above the mean for this dependent variable)	4.73 (slightly above the mean for this dependent variable)	65.71 (below the mean for this dependent variable)	11.76 (slightly above the mean for this dependent variable)

*(Continues)*

**Table 1.** (Continued)

Type of politics	Scenario	Sentences	Words	Characters	Flesch	FOG
	and thinks that his/her type of thinking is silly. During class discussion this student often plays the devil's advocate with the teacher making relevant arguments that relate to the topic. The teacher is often frustrated with these arguments and makes the student feel silly in class. Due to this behavior from the teacher, making him/her feel silly in front of fellow students, the other students are hesitant to answer questions in fear of getting the same reaction from the teacher. From this lack of participation the class is dull and boring and many students don't pay attention.					

self-relevance (see Table 2). As can be seen in Table 2, the condition with the most sentences was the large-scale, self-relevant condition ( $M=4.50$ ,  $SD=2.63$ ), while the condition with the lowest number of sentences was the large-scale, non-self-relevant condition ( $M=3.07$ ,  $SD=1.70$ ). A significant interaction emerged between these independent variables ( $F(1, 43)=10.04$ ,  $p=0.003$ ;  $\eta^2=0.19$ ), such that the self-relevance seemed to increase the number of sentences for the large-scale, but not the small-scale conditions.

### Number of Words

The total number of words used in the paragraphs did not vary significantly as a function of political scale or self-relevance (see Table 2). The interaction between these independent variables was also not significant. A post-hoc  $t$ -test revealed that the mean number of small-scale self-relevant words used ( $M=19.68$ ,  $SD=7.46$ ) was higher than the number of words used in large-scale non-self-relevant paragraphs ( $M=16.17$ ,  $SD=5.64$ ;  $t(45)=2.63$ ,  $p=.01$ ; Cohen's  $d=0.54$ ).

### Number of Characters

The total number of sentences used in the paragraphs varied significantly as a function of self-relevance ( $F(1, 43)=35.41$ ,  $p=0.000$ ;  $\eta^2=0.45$ ; see Table 2). Post-hoc  $t$ -tests revealed four specific significant mean differences, such that:

- The number of characters used in large-scale self-relevant paragraphs was larger than the number of characters used in small-scale self-relevant paragraphs. ( $t(46)=4.72$ ,  $p=0.000$ ; Cohen's  $d=0.90$ )
- The number of characters used in large-scale self-relevant paragraphs was larger than the number of characters used in small-scale non-self-relevant paragraphs. ( $t(44)=3.73$ ,  $p=0.001$ ; Cohen's  $d=0.61$ )
- The number of characters used in large-scale non-self-relevant paragraphs was larger than the number of characters used in small-scale self-relevant paragraphs.

( $t(45)=4.49$ ,  $p=0.000$ ; Cohen's  $d=0.68$ )

- The number of characters used in large-scale non-self-relevant paragraphs was larger than the number of characters used in small-scale non-self-relevant paragraphs.

( $t(44)=3.32$ ,  $p=0.002$ ; Cohen's  $d=0.46$ )

### Flesch Ease of Readability

The Flesch ease of readability, with higher scores corresponding to content that is easier to read, revealed a significant effect for self-relevance ( $F(1, 43)=12.81$ ,  $p=.001$ ;  $\eta^2=0.23$ ), but not political scale (see Table 2). Post hoc  $t$ -tests revealed the following specific mean differences:

- Flesch scores were higher for small-scale self-relevant than for large-scale self-relevant. ( $t(46)=2.64$ ,  $p=0.011$ ; Cohen's  $d=0.48$ )
- Flesch scores were higher for small-scale non-self-relevant than for large-scale self-relevant. ( $t(44)=2.97$ ,  $p=0.005$ ; Cohen's  $d=0.51$ )
- Flesch scores were higher for small-scale self-relevant than for large-scale non-self-relevant. ( $t(45)=2.09$ ,  $p=0.042$ ; Cohen's  $d=0.37$ )
- Flesch scores were higher for small-scale non-self-relevant than for large-scale non-self-relevant. ( $t(44)=2.15$ ,  $p=0.037$ ; Cohen's  $d=0.38$ )

### "Fog" Score (Proportion of Complex Words) and Grade Level

Neither within-group factorial ANOVAs nor post-hoc within-group  $t$ -tests revealed significant effects of the independent variables of political scale and self-relevance on either of these dependent variables.

### DISCUSSION

Overall, this research tested the broad prediction that the human mind is better prepared to process information related to small-scale political situations compared with large-scale political situations, as large-scale political situations (such as dealing with international conflict

**Table 2.** Means across levels of political scale and self-relevance for writing-relevant DVs

DV	Type of politics	Mean (SD)	95% CI	Political scale (F)	Self-rel. (F)	Interaction (F)
Sentences	Large-scale, self-relevant	4.50 <sub>a</sub> (2.63)	Lower: 3.72 Upper: 5.28	14.89* (.26) [.000]	1.884 (.42) [.180]	10.044* (.19) [.003]
	Small-scale, self-relevant	3.59 <sub>b</sub> (2.60)	Lower: 2.83 Upper: 4.35			
	Large-scale, not self-relevant	3.07 <sub>b</sub> (1.70)	Lower: 2.56 Upper: 3.58			
	Small-scale, not self-relevant	3.39 <sub>b</sub> (2.64)	Lower: 2.61 Upper: 4.17			
Words	Large-scale, self-relevant	17.24 <sub>b</sub> (5.14)	Lower: 15.71 Upper: 18.77	3.162 (.07) [.080]	6.343 (.13) [.020]	0.098 (.002) [.760]
	Small-scale, self-relevant	19.68 <sub>a</sub> (7.46)	Lower: 17.47 Upper: 21.89			
	Large-scale, not self-relevant	16.17 <sub>b</sub> (5.64)	Lower: 14.50 Upper: 17.84			
	Small-scale, not self-relevant	18.25 <sub>abc</sub> (6.64)	Lower: 16.29 Upper: 20.21			
Characters	Large-scale, self-relevant	4.57 <sub>a</sub> (.42)	Lower: 4.45 Upper: 4.69	1.381 (.03) [.250]	35.407* (.45) [.000]	0.668 (.02) [.420]
	Small-scale, self-relevant	4.21 <sub>b</sub> (.37)	Lower: 4.09 Upper: 4.33			
	Large-scale, not self-relevant	4.58 <sub>a</sub> (.42)	Lower: 4.46 Upper: 4.70			
	Small-scale, not self-relevant	4.32 <sub>b</sub> (.38)	Lower: 4.20 Upper: 4.44			
Flesch	Large-scale, self-relevant	70.28 <sub>b</sub> (11.15)	Lower: 66.99 Upper: 73.57	0.094 (.00) [.761]	12.805* (.23) [.001]	0.076 (.002) [.784]
	Small-scale, self-relevant	75.59 <sub>a</sub> (12.40)	Lower: 71.92 Upper: 79.26			
	Large-scale, not self-relevant	71.21 <sub>b</sub> (10.48)	Lower: 68.11 Upper: 74.31			
	Small-scale, not self-relevant	75.60 <sub>a</sub> (10.76)	Lower: 72.42 Upper: 78.78			
Fog	Large-scale, self-relevant	10.57 (2.86)	Lower: 9.73 Upper: 11.41	0.669 (.02) [.418]	0.591 (.01) [.446]	0.030 (.001) [.863]
	Small-scale, self-relevant	10.18 (3.59)	Lower: 9.12 Upper: 11.24			
	Large-scale, not self-relevant	10.19 (2.98)	Lower: 9.31 Upper: 11.07			
	Small-scale, not self-relevant	9.94 (3.37)	Lower: 8.94 Upper: 10.94			
Grade level	Large-scale, self-relevant	7.74 (2.54)	Lower: 7.00 Upper: 8.48	1.148 (.03) [.290]	0.128 (.003) [.722]	0.006 (.00) [.939]
	Small-scale, self-relevant	7.58 (3.34)	Lower: 6.60 Upper: 8.56			
	Large-scale, not self-relevant	7.35 (2.44)	Lower: 6.62 Upper: 8.08			
	Small-scale, not self-relevant	7.24 (2.88)	Lower: 6.40 Upper: 8.08			

\* $p < 0.05$ ; means with different subscripts within each dependent variable were found to be significantly different from one another using a post-hoc within-groups  $t$ -test (at the  $p < 0.05$  level);  $\eta^2$  values are in parentheses with corresponding F values;  $p$  values for F ratios are in brackets

"Characters" refers to mean number of characters used per word.

Flesch (The Flesch Reading Ease Scale): The Flesch score uses the number of syllables and sentence lengths to determine the reading ease of the sample. Twenty words per sentence with 1.5 syllables per word yields a Flesch score of 60 and is considered to be plain English. A score in the range of 60–70 is an 8th/9th grade English level. A score between 50 and 60 corresponds to a 10th/12th grade level. Below 30 is college graduate level.

FOG (FOG Scale): This scale also relies the number of syllables and sentence lengths to determine the score. The scale determines the percentage of "Foggy" words, those that contain three or more syllables; Grade Level: The Flesch-Kincaid Grade Level heuristic indicates that the average student in the grade level produced by the scale can read the text.

between governments) was not part of humans' ancestral environment prior to the advent of civilization. To test this broad prediction, participants were asked to write paragraphs that represented four different scenarios:

- (a) Large-scale political situations that were self-relevant
- (b) Large-scale political situations that were not self-relevant

- (c) Small-scale political situations that were self-relevant
- (d) Small-scale political situations that were not self-relevant

Paragraphs obtained from participants were analyzed using the Writing Sample Readability Analyzer (Tyler, 2013). This analysis examined paragraphs for number of sentences, words, characters-per-word, Flesch reading ease, FOG score (use of confusing words), and grade level.

### Effects of Size of Political Scale and Self-Relevance

For large-scale political scenarios, an interesting pattern emerged. Generally, people used more sentences in writing about large-scale political scenarios—particularly for self-relevant situations. In fact, for large-scale non-self-relevant scenarios, people used relatively few sentences. Similarly, participants used more characters per word for large-scale scenarios compared with small-scale scenarios (i.e., they wrote more sentences and used bigger words). However, when content was analyzed based on the number of words per sentence used, a different pattern emerged: Participants used more words per sentence overall (regardless of number of sentences) in writing about small-scale political situations. Similarly, for the Flesch reading ease measure, participants generally wrote content that was easier to read for small-scale political situations—especially for self-relevant political situations.

One might argue that our effects were not the result of “political” reasoning but may have been the result of socially relevant reasoning as a whole. We believe that the effects were at least partly because of political-specific reasoning, as our other independent variable, “self-relevance,” really pertains to whether something is relevant to oneself in a social context—and there were clearly different effects of the “political scale” versus the “self-relevance” variable.

### Implications

While this pattern of data is somewhat complex, it paints a picture of a different set of cognitive processes that people employ when thinking about large versus small-scale political situations—as a function of self-relevance. In short, people seem to tap higher-order processes (as evidenced by the use of more sentences and more difficult writing) when talking about large-scale politics. When talking about small-scale politics, people actually use more words (in spite of using fewer sentences) and write in simpler terms (as evidenced by the data from the Flesch score). This pattern speaks to the fact that people may find it easier to come up with, think about, and write about small-scale political situations relative to large-scale political situations—which is exactly the primary prediction of this research.

These findings are highly consistent with the predictions of Petersen and Aarøe (2012), who make the case

that evolutionary mismatch likely plays a major role in political problems that emerge on a large scale. Our research provides specific data explicating how this point relates to the nature of human political psychology.

### Limitations

Clearly, many methods could be used to tap people’s cognitive tendencies—having people write spontaneous paragraphs is one of a large number of possible methodologies that could have been employed. In the future, work examining similar questions but looking at real-world experiences that people have had with large-scale versus small-scale political situations might help reveal if the findings here replicate to more ecologically valid methodologies.

Another point pertains to the use of readability analysis as a dependent variable for this kind of research. We believe that this analysis allowed for an objective and multi-faceted examination of multiple cognitive processes. However, this method is devoid of any affective content analysis and only taps writing-related cognitive processes. Future research on this topic could benefit from using a broader set of psychological measures.

Finally, we believe that future research into the questions examined here could benefit from additional measures to ensure that the issue of small versus large-scale politics is not empirically conflated with the issue of personal relevance. In the current research, we worked to address this issue by having personal relevance stand as an independent variable, so that we could separately examine the effects of personal relevance and political scale. This said, the concept of small-scale politics is so naturally conflated with personal relevance in the real world that future research into this question may well benefit from using novel methodologies to tease these concepts apart.

### Bottom Line

Across a broad array of phenomena, evolutionary psychology has famously documented the importance of evolutionary mismatch in helping us understand who we are. Past work has focused on such features of humanity as food preferences (Platak, *et al.*, 2011), psychological disorders (Keller & Nesse, 2006), and phobias (Öhman & Mineka, 2001), among other things. The current work provides preliminary, but clear evidence of the importance of evolutionary mismatch in helping us understand human political responses from an evolutionary perspective.

Yet, as humans, we are both unique and similar compared to the entirety of the animal kingdom. Of course, writing on our uniqueness would expand into a book, so we address (some of) our similarities here. Evolutionary pressures shaped sea turtle behavior to immediately approach a light source upon hatching, because ancestrally, the only light during the night (when they hatch) was the reflection of the moon on the water (Wilson, 2007). This deep-seated urge

to approach light upon emergence from the shell has led to countless sea turtle deaths in modern environments simply because of our modern use of electricity (i.e., lights) (Wilson, 2007). We are similar to sea turtles in that respect—our ancestors faced only small-scale political situations, and, thus, we now are much better able to cognitively access and think about this kind of information rather than evolutionarily novel information related to modern large-scale politics.

These findings may have broad implications for political campaigns and politics in general. Politicians may be wise to try to contextualize political issues as not only self-relevant, but also as small in political scale. In other words, efforts to frame political issues as having features that are relevant to our small-scale social origins may help us better understand (and address) large-scale politics.

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