

# Perceptions of Attitudinal Change: The End of History Illusion and Polarization

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## ABSTRACT

Does the perception that an individual's attitudes are temporally stable influence political polarization? The 'end of history illusion,' a theory not widely utilized in Political Science, posits that individuals will systematically overestimate the similarities between current and future attitudes (Quoidbach et al. 2013). We argue that this misperception of attitudinal stability is interrelated with political polarization through what we term 'attitudinal stasis.' If an individual believes their attitudes are unlikely to change due to the faulty perception that one's current attitudes are longitudinally static, then those who disagree are both factually incorrect and potentially morally deficient, issue and affective polarization, respectively. We attempt to reduce this source of polarization by highlighting the malleability of attitudes over time, thus indirectly introducing the notion that the respondent may not be entirely correct in their assumptions about attitudinal stasis. Using complementary survey experiments, we challenge our respondent's critical understanding of their political stances and how they view oppositional forces. We find strong suggestive evidence for the application of the "end of history illusion" in political domains. We also find limited evidence that priming respondents significantly increases their expectations for future change in specific domains. We do not find a meaningful reduction in affective polarization between those prompted to consider their previous attitudes and those who were not.

## Introduction

The study of attitude formation and evolution has established general trends of longitudinal change in academic scholarship. Individuals' perception of their own attitudinal change is less understood. (Kent and Niemi 1968; Bartels and Jackman 2014; Lorenz et al. 2021). Psychological evidence from the preceding decades suggests that longitudinal stability in attitudes may be a false assumption of real-world behavior (Markus 1986; Samuelson and Zeckhauser 1988; Quoidbach et al. 2013; Ryzin 2016). We know that attitudes and preferences change over time, both among the general public and elected politicians. Take, for instance, Hillary Clinton's change in policy preference towards gay marriage. While in 2013, she announced her support for legalized same-sex marriages, just thirteen years earlier, when she was running for Senator of New York, she commented that "...I think a marriage is as a marriage has always been, between a man and a woman" (Sherman 2015). This change mirrors national trends that estimate that over 60% of Americans favored same-sex marriage in 2015, as compared to 60% opposing marriage equality in 1999 (McCarthy 2015).

Internal changes in attitudes and preferences are almost imperceptible to individuals. In a multi-wave, high N survey program, Jordi Quoidbach, Daniel Gilbert, and Timothy Wilson (2013) found that respondents systematically overestimated the longitudinal stability of their current attitudes and preferences when compared to reported changes to their previous views. Quoidbach and his coauthors describe this phenomenon as "the end of history illusion." The phrase conjures up comparisons to the famous Francis Fukuyama article and allusions to Hegelian philosophy. This theory contends that people systematically underestimate how their attitudes, personalities, and values can and will change in the future. The systematic misinterpretation of individuals' attitudinal rigidity highlights the question this paper seeks to address regarding the longitudinal stability of attitudes. Do individuals systematically underestimate future changes to their political attitudes? We theorize that the greater social meaning and material significance of political attitudes and preferences will inhibit the ability of individuals to predict future change in line with the end of history illusion.

The first section of this research extends Quoidbach and his team's experiment to political objects using a similar method of experimental survey design. In doing so, we illustrate the applicability of this psychological effect on political objects and how it short-circuits the individual's ability to process informational unknowns. The second half of this research applies a more recent survey experiment that explores how the effects of the end of history illusion may be countered and the relationship between this illusion and (affective) political polarization. Our expectations here are twofold. First, by prompting respondents to recognize that their attitudes have previously changed, they may be more inclined to predict future attitudinal change. Second, the end of history illusion interacts with affective polarization to obscure the information needed to recognize how attitudes may change over time.

We argue that the end of history illusion interacts with, and potentially contributes to, polarized attitudes to form what we term 'attitudinal stasis.' Affective polarization and partisan social identity imbue political beliefs and preferences with moral weight (Tajfel et al. 1971; Greene 1999, Iyengar et al. 2019). An admission that the in-group's current beliefs will change in the future suggests that either a) the in-group currently holds the incorrect view, or b) the in-group will hold the incorrect view in the future. Those that hold differing or opposing views are perceived as factually incorrect and potentially morally deficient. This political condition further reinforces the overestimation of attitudinal stability. In effect, the lack of future information creates a zero-sum game in which ideological sides are unable to perceive the other as worthwhile to negotiate with because attitudes are perceived as entrenched. Furthermore, any movement toward the outgroup's position could create cognitive dissonance. While this could be the result of outgroup animosity, the psychological effects of the end of history illusion may inhibit people from seeing how their own preferences have evolved over time. To this end, we additionally ask, does the misperception that individual attitudes are static affect politically polarized attitudes?

The importance of determining the effect of this psychological illusion on polarization is multifaceted. It adds another layer to the polarization literature that too often treats political attitudes as wholly contingent on social and environmental factors. While there are a variety of theorized forms of polarization, we examine affective polarization or "dislike or distrust" of those from opposing political factions as well as general "animosity between... parties" (Iyengar et al. 2019, 130). This conceptualization of polarization is a heavily discussed phenomenon in political and behavioral sciences and has gained increased traction over the years (Olson and Zanna 1993; Oskamp and Schultz 2005). Our addition to the literature details a new process that adds more precision about individual preferences and attitude self-conceptualization (Tesser 1978; Priester et al. 2004). It also provides a new theoretical outlet for which to study how individuals perceive themselves and their attitudinal preferences. We theorize that the effects associated with political polarization, such as decreased partisan cooperation, may interact with one's understanding of how their own attitudes have changed in the past and may change in the future. To do so, we utilize a similar experimental methodology as Quoidbach et al. (2013) to answer these questions.

## The End of History

Quoidbach et al. (2013) and, more recently, Ryzin (2016) have emphasized a new dimension of how individuals observe attitudinal change. Limited cognitive resources restrict how one may perceive that they will change in the future while emphasizing how past experiences have already taken shape. This effect has been shown with supportive data using surveys on personality tests, values, and even preferences. While it is expected that individual tastes formalize and harden with time (Sears and Funk 1999; Stoker and Jennings 2008), the aforementioned authors show that attitudinal shifts still exist through time. The authors conclude that fixed preferences are the result of misestimations due to the imperceptible ways in which an individual measures those changes.

The effects of this misperception are clear and lead to false inferences when applied to behavioral cognition. Take, for instance, an article by Reihan Salam (2016), who makes an ecological fallacy by associating fixed preferences with the Republican Party and its voters. In the article, the author claims that the Republican party is rapidly aging and concludes that the conservative party will ultimately "die out." While this finding would be reasonable within the context of fixed political or affective attitudes in regard to the positions of ideological partisan sentiment, the evidence shows otherwise. Instead, according to a Science Direct study, aging produces an increase in conservative votes by 0.32% a year with an increase of nearly 20 percentage points from ages 20 to 80 (Tilly 2015). In other words, Salam's assumption that conservative Republicans will eventually age out does not account for the portions of younger generations, as they get older, who will replace them.

From the perspective of the end of history illusion, it is evident that individuals' partisanship and policy preferences shift over time. Political preferences are likely an ongoing process of socialization and life events that act to displace an individual and compel them to realign their preferences to match their onset interests (Mendelberg, McCabe, and Thal 2017). Continuous life-changing events (college graduation, employment, starting a family, buying a house, etc.) will erode present attitudes, which must change to meet the demands of experience and a shifting environment. Attitudes may also change as a response to shifts in the perceived legitimacy of reference groups (Hall, Varca, and Fisher 1986). A reference group, in Herbert Hyman's (1942, 309) terminology, indicates a set of standards an individual will calibrate their own attitudes against. However, future unknowns obscure how these opportunities for change can occur in response to unpredictable stimuli.

There is a conflicting strand of literature that emphasizes the stability of meaningful attitudes and strongly held beliefs that are essential to self-identity (Kaplan, Gimbél, and Harris 2016). Such arguments emphasize how political preferences are tied into larger personality traits that are theorized to remain fixed and predictable over time as a result of preferences hardwired into us through biology and socialization (Johnston, Levine, and Federico 2017; Boston et al. 2018). Arguments regarding large personality inventories, such as the Big Five, emphasize a high amount of stability into adulthood (Rantanen et al. 2007). Other research indicates variation in Big Five results as responses to socio-environmental stimuli (Caspi, Roberts, and Shiner 2005). Then there is another stream of literature that targets physiological traits and responses to stimuli as the main indicators of political preferences and attitudes (Rice University 2008). Take, for example, a recent study about the relationship between

fear and COVID-19 being predicted by personality traits, primarily neuroticism (Lippold et al. 2020). Comparatively, that same article discovered that policy stances were more likely to be divided along political lines, indicating that preexisting attitudes may shape one's experience rather than the inverse (Lippold et al. 2020, 3).

The longitudinal rigidity of perceived attitudes may be an outcome of one's own preferences, limiting the possibilities of experiences that could challenge their 'meaning systems' (Reiss et al. 2019, 1). The psychology literature emphasizes the directionality of values and preferences as stemming from one's core self and emanating outwards onto experiences and thus influencing them (Oskamp and Schultz 2005, 15). In this case, it is argued that core identities have an effect on one's experiences rather than solely the inverse. Certainly, there is a logical assertion that individuals are prone to prefer their own psychological and attitudinal orientations that bias experiences towards their own values (Taber et al. 2009; Heiss et al. 2019). This concept is known as 'attitude congruency bias' and indicates how people will "spend cognitive resources bolstering pro-attitudinal messages and denigrating counter-attitudinal ones" (Peralta et al. 2020, 50). Individuals may act to protect themselves from novel experiences when their attitudes are particularly strong in order to avoid contact with counterfactual stimuli (Kaplan, Gimbel, and Harris 2016; Reiss et al. 2019).

## Thinking About the Past and Future

Quoidbach et al.'s (2013, 96) survey experiments demonstrated that individuals both underestimate that they will change and are unable to predict how change will occur. The effect of counterbalancing knowns and unknowns is summed up well by Kahneman et al. (1991, 194), who described the phenomenon as endowment effects in relation to status quo biases, as termed by Samuelson and Zeckhauser (1988). This manifests as a preference for present circumstances over future uncertainty. The experiments of Knetsch and Sinden (1984) and Kahneman et al. (1991) illuminated this immediacy bias of respondents. These results are consistent even when experimental subjects are presented with a future outcome that may provide a higher payout compared to the risks of breaking with the status quo. Kahneman and Tversky (1992) famously described this phenomenon as prospect theory, or the aversion to future unknowns when gains or losses are considered.

The behavioral economics literature explicitly argues that framing effects determine behavioral outcomes. The relationships between heuristic biases, given how humans receive and process information and our cognitive sensitivity to loss aversion, provide a blueprint for what may be occurring. Decision-making is often muddled by adherence to intuition or analytical thinking and switching between the two (Kahneman 2011). This relationship carries over into time discounting experiments which explain why individuals lean towards present payoffs rather than future rewards (Frederick et al. 2002). Importantly this cognitive bias can be altered by presenting experimental participants with future information, which helps to alleviate payoff deficits associated with the future (Herschfield et al. 2011). However, psychological effects and patterns in thinking have been shown to mitigate this connection as well. Bialek and Sawicki (2018) produced experimental evidence using cognitive reflection scores that assess patterns of fast and slow thinking in individuals to show that some are less susceptible to this manipulation. Furthermore, while collective attitudes may shift on issues, individual attitudes formalize and become less prone to manipulation over time (Ekstam 2022).

The rich literature demonstrates that behavior between knowns and unknowns creates biases, but there is room for our knowledge to be expanded. Previous experiments have examined how bias for the present becomes entrenched but lacks a critical assessment of what one's future self may be. In other words, how individuals 'frame' themselves in the future matters, but a disconnect exists regarding the validity of that perception. Furthermore, the reflection of past change produces systematically higher rates of change relative to preferences and attitudes. Nevertheless, the inverse holds true for future predictions and assessments of those same values. Human beings understand that they change but are systematically unlikely to apply that same conclusion to their future selves.

To demonstrate how this phenomenon affects decision-making, Quoidbach and his colleagues employed a simple series of experiments. In one of these iterations, the authors gave respondents a Ten Item Personality Inventory (Big Five battery) and then randomly assigned respondents to reporter or predictor groups. The reporter group was tasked to fill in the personality battery again but to fill it out as they would have done so ten years ago. The predictor group was asked to do the inverse and respond as they would have as if it was ten years from now. After comparing the results, the researchers found that the predictor group's expectations for change were biased towards their present-day answers. This result was severely limited when compared to the respondents in the reporter group who reported on their historical changes over the past ten years. This group of respondents was much more confident about more changes occurring in their own lives. The predictor group, however, was much less certain that change was likely to occur in the future. This effect was found across personality, attitudes, and preferences. Within political attitudes and preferences, we should expect to see a similar effect. This informs our first hypothesis:

- **H<sub>1</sub>**: Respondents will report a higher magnitude of change in attitudes and preferences from five years prior, as compared to predictive change for five years in the future.

## Surveys as Methodology

Our methodological approach to this paper uses a series of electronically administered survey experiments. Survey approaches present several advantages and hazards. Foremost among the advantages, electronically administered surveys provide a greater reach for a larger pool of survey participants and increased flexibility for a wider pool to participate (Evans and Mathur 2005, 198). Such surveys excel at collecting behavioral responses that are less likely to be observed or documented by other approaches without dramatically increasing the cost of research – both time and financial (Phillips 2016, 8). Our reliance on a survey experiment, in this case, is supported by the lack of survey instruments that study the end of history phenomenon or research that is applicable to historical and future changes in attitude. Our surveys utilize previously developed instruments and inventories designed to assess attitudes, policy preferences, and polarization.

Our process is not without survey-specific difficulties. For one, there are problems with the stability of self-reported change. Often, survey participants will overestimate the stasis of their own values and work to cognitively disabuse themselves of counterfactuals and cognitive dissonance. Markus (1986) presented a longitudinal study of participants over 9 years which showed that participants self-reported very little change in policy preferences and often would rely on heuristics to fill in missing information when asked to conduct retrospective reflection. Lowenthal and Loewenstein (2001) found similar results in an experiment where they asked their participants to recall how they have changed over time regarding political preferences on policy. Converse (1964) famously observed that responses to survey questions seemed to vary over time randomly. However, because our project does not involve a longitudinal investigation, we rely solely on the efficacy and limitations of autobiographical reporting.

This highlights another issue that may present some fallibility to our study, which is the limits of autobiographical memory (Poulsen 2013). Individual respondent errors will decrease our data's validity without comparative markers. Despite these issues, there is still much to be gained from our approach. The end of history illusion effectively contends with the overconfidence one assesses of their own inability to perceive future change. This highlights the functionality of the argument in terms of individual behavior. An almost hubristic confidence in one's own viewpoints as simultaneously contemplated through lived experience but also designated without room for error or growth. From this perspective, it becomes apparent how the inability to discern attitudinal change may influence affective polarization. Theoretically, the end of history illusion accounts for politically affective behavior by emphasizing why such irrational and uncooperative feelings make sense to voters when they are unable to perceive how new information may shape their own ideational preferences in the future. Future iterations of this research may rely on in-person interviews or other interpersonal modes of data collection.

## The End of History Political Survey

To test our first hypothesis, we use the results of a survey experiment conducted in Fall 2018. The motivation of the experiment was to provide a 'proof of concept' for the end of history illusion's applicability to political topics. This survey was fielded electronically for approximately three months on a convenience sample of undergraduate students in introductory Political Science courses<sup>1</sup>. Following collection of basic political and demographic information, respondents were randomly assigned to one of three groups: control, predictor, or reporter.

All respondents were then asked to indicate their current feelings and attitudes on a series of political topics. These topics included partisanship, feeling thermometers, and attitudes on several political issues.<sup>2</sup> Respondents in the predictor group were then asked to estimate where they would place themselves on the same series of political topics in five years' time. Respondents in the reporter group were asked to estimate their positions on the same political topics five years prior. The control group received neither the future nor past prompts. Issue-based attitudes were captured via five-point Likert Scales where 1 denoted "Strongly Disagree," and 5 denoted "Strongly Agree" with the political topic. The feeling thermometers range from 0 to 100, where 100 correlated with the highest possible affinity and 0 with the highest possible dislike. Partisanship was measured on a similar five-point scale, and ideology was captured using a seven-point scale with the highest values corresponding to 'Republican' and 'Extremely Conservative,' respectively.

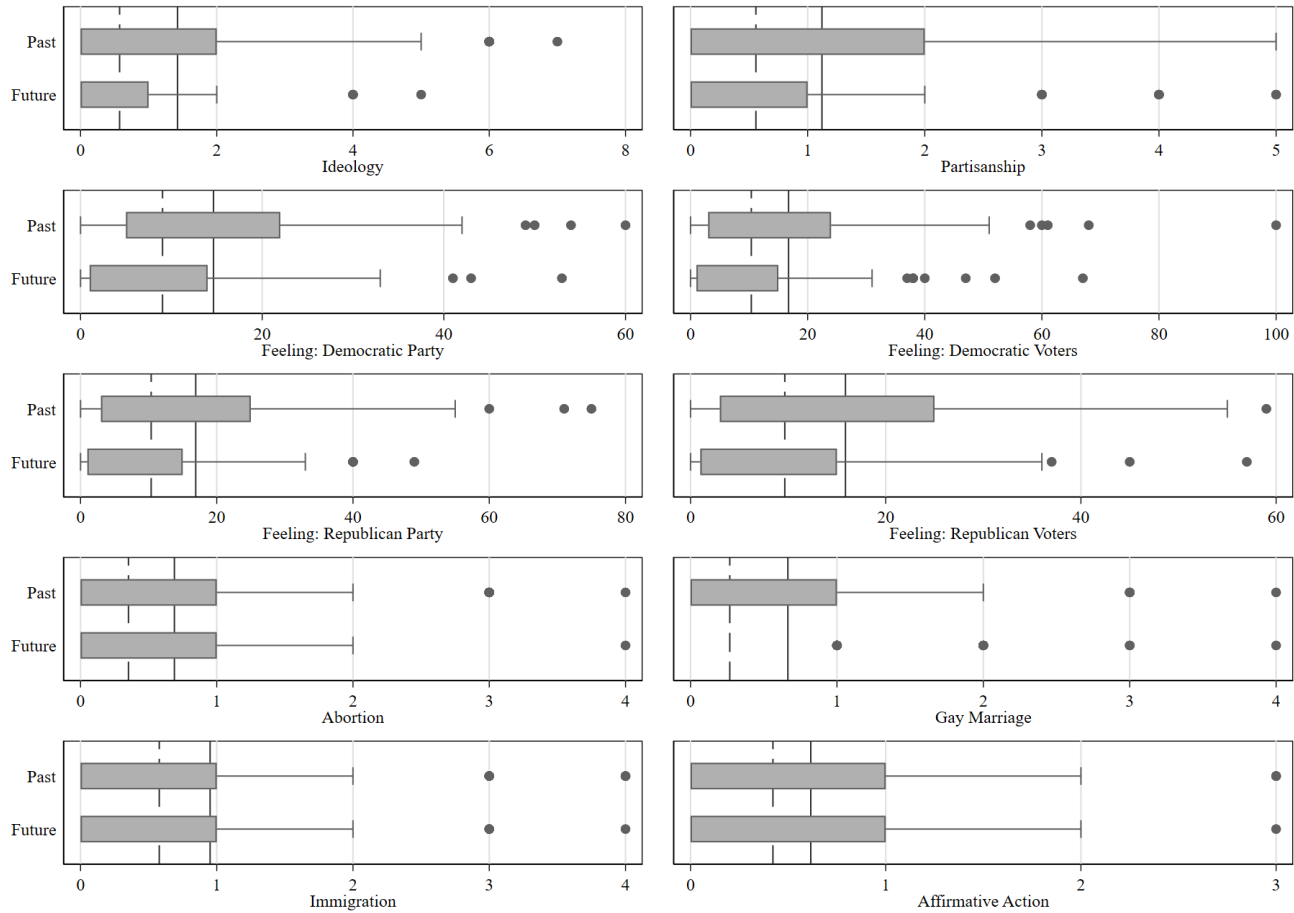
Where Quoidbach's time treatments measured attitudinal changes ten years into the past and future, we edited the treatments to five years to better leverage responses since our sample of undergraduate students skewed relatively young. The average participant age was 20 years old. Research has demonstrated that by this age, the forces of political socialization are quite strong due to the effects of parentage, teachers, and peers (Healy and Malhotra, 2013). The so-called "impressionable years" hypothesis implies that change in attitudes will be greater during an individual's formative years due to these environmental and socializing forces (Sears 1983). At the opposite end of the age spectrum, evidence for theories on attitude persistence

<sup>1</sup>N=468; Control Group N=158; Predictor Group N=145; Reporter Group N=165. The full survey questionnaire is presented in online appendix B, with descriptive statistics for all measures of interest presented in online appendix A tables A-1 to A-3. The online appendices may be accessed at <https://doi.org/10.7910/DVN/CYT2Z3>.

<sup>2</sup>"Abortion," "gay marriage," "immigration control," "affirmative action," and "universal healthcare."

and old age have produced mixed results (Tyler and Schuller 1991; Sears and Funk 1999). Change seems to be a consistent factor in one's life, with complex causative factors that influence how change occurs. We expect, therefore, that an 18-year-old respondent should be able to reflect on their affective and political stances when prompted and allow us to ascertain the reported magnitude of change between retrospective and prospective groups compared to their present responses.

We test our first hypothesis by analyzing the group differences between future and present and past and present evaluations. The differences compared are constructed by taking the absolute difference between their current estimated position and either reporter or predictor estimate. We accomplish this through two sample t-tests comparing the group means of the predictor and reporter groups and present those results in Figure 1. The solid line indicates mean values for reporter groups; the dashed line indicates mean values for predictor groups. The results of two-sample t-tests are presented in online appendix D, Table D-1.



**Figure 1.** Mean Comparisons of Attitude, Thermometer, and Opinion by Reporter and Predictor Groups: 2018 Sample.

We find strong suggestive evidence that the end of history illusion applies to political objects in a consistent manner to Quoidbach and colleagues (2013) theory. Across positional, feeling, and issue evaluations, respondents systematically underestimate the likelihood of future change as compared to previous change. All of the examined relationships on political objects are statistically significant except for universal healthcare. Moreover, the magnitudes of these observed effects are substantively meaningful. The most consequential of these mean differences is that of political ideology, with a mean difference of 0.850. This coefficient indicates that respondents in the predictor group will estimate their future change to be almost a full point less different, on a seven-point scale, than the reporter group. It is important to note that we do not examine the direction of change throughout. Instead, we are solely concerned with the magnitude of change and respondents' propensity to underestimate future change.

## The End of History Illusion and Polarization

The results of our 2018 survey provide strong, suggestive evidence that the end of history illusion applies to political objects. Individuals in the predictor group were less likely to estimate the change in the next five years compared to those in the reporter group recalling change over the previous five years. These results also suggest the influence of complementary psychological and political mechanisms. Respondents who were less likely to report change may be cognitively motivated to maintain ideological consistency over time. Additionally, the act of priming the reporter group with retrospective contemplation of change may have provided them with enough cognitive resources to break this pattern of historical consistency. In estimating future change, the lack of a historical precedent may limit the requisite cognitive resources to predict a future that breaks with present identities. This leads to an assumption that viewpoints will not change significantly in the future. Polarization may exacerbate this effect by motivating a respondent to remain ideologically 'pure.' In such instances, attitudinal stasis may act to obscure change, both past, and future, and allow polarized beliefs to be thought of as temporally consistent. Put differently, people who are more polarized may be more likely to invest in the illusion of their end of history as a matter of maintaining their attitude congruency bias. We explore how introducing reported past change may help to overcome this obstacle.

In applying these concepts to the end of history illusion thesis, we seek to take the experiment a step further. In a complementary survey experiment, we attempt to reshape present knowns and future unknowns by priming respondents with the reporter treatment. This treatment may prompt respondents to consider previous change as a tool for assessing potential future change. We do so with the knowledge gained from the previously discussed research and the 2018 survey that shows respondents can more accurately account for change from the past to the present. Retrospective thinking has the potential to activate recognition of attitudinal malleability and predict future changes. The behavioral economics literature has shown some success in getting individuals to more seriously consider their future selves (Herschfield et al. 2011). However, this used a prospective prompt with a visual aid to demonstrate change. We estimate that individuals who are prompted to reflect on past change can activate a similar response and yield better insight into how attitudes comparatively shift between past, present, and an unknown future. This yields the following hypothesis:

- **H<sub>2</sub>**: Respondents exposed to the reporter treatment will be more likely to predict future change compared to the control group.

High levels of attitudinal complacency and heightened polarized feelings present an obstacle to predictions of the future self. Extreme bias towards a particular viewpoint may correlate with failing to perceive and report changes in attitudes accurately. Additionally, experiences that have the potential to produce changes in effect and preferences may be limited by ideologically motivated individuals. Such individuals may avoid cognitive conflict by a process known as population sorting. This occurs when an individual restricts their interactions with other groups by making decisions that control their physical spaces and social environment (Martin and Webster 2018). This can be done via actions such as career choices, the neighborhood where an individual lives, and events individuals attend that limit the types of ideological interactions one may experience. The result is a level of homogeneity within one's own environment that allows one to endure very little counter-ideological pushback.

Bias also occurs in the self-selection of media and information an individual may consume by avoiding sources thought of as disreputable, incorrect, or oppositional. These limitations provide an additional layer of defense against incoming information that may challenge or alter an individual's attitudes or preferences (Wilson et al. 2020). Cognitive rigidity is also associated with polarized behavior, especially with more conservative individuals who are theorized to be more active and dogmatic in this adherence (Zmigrod 2020). Environmental limitations due to polarized attitudes allow groups to create a more negative image of their opponents and provide room for problematic techniques such as otherization and dehumanization to proliferate (Cassese 2020).

We expect the recollection of attitudinal change to temper polarized attitudes. Openness to experience and change demonstrates some compelling evidence as to how individuals perceive outgroups and tempers the effects of affective and polarized attitudes (Talissee 2019; Strandberg et al. 2020). This may be the result of voters who are less ideologically anchored being motivated by ends rather than the means of politics and policy and, therefore, more likely to accept that shifts occur (Hetherington 2006, 3). In addition, people who have shifted their viewpoints are more likely to have been exposed to varying and opposing viewpoints which may act as a moderating force (Stroud 2010; Iyengar et al. 2019; Steppat et al. 2021). However, recent studies suggest that partisan exposure to oppositional rhetoric in media can elicit a polarized response (Levendusky 2013; Bail et al. 2018).

Polarization may interact with the end of history illusion in several key ways. It may induce respondents to underestimate past change to a higher degree. When recalling past changes, ideologically possessed individuals may be more apt to rely on heuristics to recall past information. In such instances, they may overestimate how consistent their views have been over time (Reiss et al. 2019). As such, they are more likely to be invested in their attitudes remaining static into the future. However, it may be that individuals are failing to understand how they have changed due to the cognitive shortcuts individuals make when

considering past and future stability. As such, we estimate the following when a reporter treatment is introduced to our survey participants:

- **H<sub>3</sub>**: Respondents exposed to treatment will be lower in polarized attitudes compared to the control group.

Uncertainty remains when interpreting the causality of this treatment as polarized individuals should, likewise, predict less change than their counterparts. More polarized individuals may also underreport change that has previously occurred in their lives. This may be either factual, due to limited experiences, or imagined as a means of maintaining attitude congruence bias in themselves. The end of history illusion may, therefore, affect individuals in ways that allow them to interpret consistency in their ideology and in-group mentality across time. As such, an individual who is prompted to report on the amount of change they have experienced in the past may be conditioned by higher levels of polarization. We present this argument formally as:

- **H<sub>4</sub>**: Respondents higher in polarization will report and predict lower expected levels of attitudinal change.

## Manipulating Polarization Using the End of Political History

To examine these three hypotheses, we fielded a second survey experiment in the Fall of 2021. The new set of participants was also a convenience sample of undergraduate students in introductory Political Science courses. This survey experiment had three intentions: first, to test if prompting respondents to consider past attitudinal change would stimulate a comparable increase in prospective evaluations. Second, to test if prompting respondents to consider past attitudinal change would decrease their levels of political polarization. Third, to test if polarized respondents were less likely to predict future attitudinal change. The treatment consisted of three sets of two retrospective prompts, in addition to a control condition where the respondents were shown no retrospective prompts.

The treatments varied in their content, with the first treatment asking respondents to consider their attitudinal change in the previous five years on non-political, non-policy objects ("music" and "movies"), and the second asked respondents to consider their attitudinal change in the previous five years on political, non-policy objects ("social issues" and "economic issues"), while the third asked respondents to consider their attitudinal change in the previous five years on political, policy objects ("racial equality laws" and "drug legalization laws.") The intent behind this content difference was to create low, medium, and high-intensity interventions with intensity defined as the degree of political content. These measures were repeated for the outcome variables of interest with the time scale altered from five years retrospective to five years prospective. All respondents were asked to estimate the attitudinal change over the next five years on the six previously stated evaluative objects.

Affective polarization was measured, following the American National Election Study example, with the absolute difference in feeling thermometers between "Democrat voters" and "Republican voters." We are unconcerned about the direction of polarization. Rather we focus on the magnitude of polarization in either direction. We also included a dyad of polarization questions, following the example of Pew Research, wherein respondents were asked how they would feel if a "close friend or family member married" a member of either a Democrat or Republican. This measure proved inconclusive, and thus we use the feeling thermometer results when discussing polarization. The failure of this measure is likely due to the age of respondents in this survey – the age group of 18 to 29 showed the lowest degree of difference when asked by Pew.<sup>3</sup> Finally, the survey asked a series of demographic, personality, and political questions.

Respondents were randomly assigned to treatment or control groups through Qualtrics, and the respondents participated in the survey via electronic means.<sup>4</sup> Respondents were excluded from analysis if they completed the survey in a non-credible amount of time to increase the validity of the results. The full survey questionnaire is presented in online appendix C with descriptive statistics of all key variables presented in online appendix A, tables A-4 to A-8. To ensure the validity of results from both surveys, respondents who did not participate in the survey for a credible amount of time (1 minute for each) were removed from the analysis. Respondents indicating an age below 18 years were also removed to conform with Georgia State University's IRB requirements for human subject research. We analyze our second hypothesis through the use of both two-sample t-tests and one-way ANOVA (analysis of variance). We first compare the mean values of the control group's prospective responses to the prospective responses of the three treatment groups collectively. This is done to simply compare if any retrospective prompt will induce a greater amount of predicted prospective change. We then use the ANOVA procedure to examine the effect of treatment on prospective evaluations across treatment groups. This allows for a more detailed examination of any potential effects, specifically if the higher intensity treatment displays a great impact or if the retrospective treatment topic corresponds with a greater degree of predicted change on that topic. We illustrate these effects through the pairwise comparison of group means compared across groups and treatment topics.

We test hypothesis three through two-sample t-tests, ANOVA, and pairwise comparison of means. Again, the t-test compares responses of the control group, who received no retrospective prompt, with the combined treatment group responses. The

<sup>3</sup><https://www.pewresearch.org/politics/2014/06/12/family-member-marrying-republican-democrat/>

<sup>4</sup>N=282; Control group=69; Group 1=71; Group 2=71; Group 3=71.

outcome of interest in these analyses is affective polarization, measured as the absolute distance between feeling thermometer responses for Democrats and Republicans. This is a more theoretically appropriate approach than using the raw polarization values, given our primary focus on the degree of polarization rather than the direction or any partisan asymmetry thereof. We then perform ANOVA to compare control group polarization to each treatment group's reported degree of polarization and then examine this relationship through a pairwise comparison of means.

Finally, we explore hypothesis four through a series of linear regression models by regressing the absolute level of polarization on both the retrospective and prospective responses. This is done at both the aggregate level and separately for the control and treatment groups. The relatively low number of responses – approximately 70 per treatment group – result in estimates less robust than ideal. Nonetheless, the results suggest no evidence of heteroscedastic residuals within groups nor unreasonably influential outliers. One may suggest that an ordered logit model may be a more statistically appropriate approach, given the potentially ordinal nature of our outcome variable (a five-category Likert scale). This is possible, and future iterations will explore this possibility, but is not tenable given the current number of respondents.

## Results of the End of History Illusion and Polarization

We find no evidence to support our second hypothesis generally but do find suggestive evidence to warrant further examination. The results of the two-sample t-tests comparing group means between the control and treatment groups for predicted change are presented in online appendix D, Table D-2, with the ANOVA results presented in online appendix D, Table D-3, and the pairwise comparison of means presented below in Table 1.<sup>5</sup> The results of the t-tests are not statistically significant. However, the pairwise comparison of means indicates exposure to the high-intensity retrospective prompt results in a statistically significant effect on predicted attitude change on economic issues over the medium intensity group, significant at the 0.05  $\alpha$  level. The substantive interpretation suggests that those respondents who received the medium intensity prompt reported a 0.5 unit greater expectation of future attitudinal change as compared to respondents who received the high-intensity treatment. This finding is discussed in greater detail in the discussion section.

**Table 1.** Pairwise Comparisons of Means: Effect of Treatment on Prospective Evaluations of Change: 2021

	<i>Music</i>	<i>Movies</i>	<i>Social Issues</i>	<i>Economic Issues</i>	<i>Racial Equality</i>	<i>Drug Legalization</i>
Control &	-0.040	0.107	0.118	0.155	0.202	0.106
Low Intensity	(0.158)	(0.156)	(0.164)	(0.168)	(0.176)	(0.168)
Control &	0.030	0.304	0.175	0.429	0.343	0.026
Medium Intensity	(0.158)	(0.156)	(0.164)	(0.168)	(0.176)	(0.167)
Control &	-0.106	-0.003	-0.192	-0.071	-0.010	0.012
High Intensity	(0.159)	(0.156)	(0.164)	(0.168)	(0.176)	(0.167)
Low Intensity &	0.070	0.197	0.056	0.274	0.140	-0.080
Medium Intensity	(0.157)	(0.155)	(0.162)	(0.167)	(0.175)	(0.167)
Low Intensity &	-0.066	-0.110	-0.310	-0.226	-0.212	-0.094
High Intensity	(0.158)	(0.155)	(0.162)	(0.167)	(0.175)	(0.167)
Medium Intensity &	-0.136	-0.307	-0.366	-0.500*	-0.352	-0.014
High Intensity	(0.158)	(0.155)	(0.162)	(0.168)	(0.174)	(0.166)

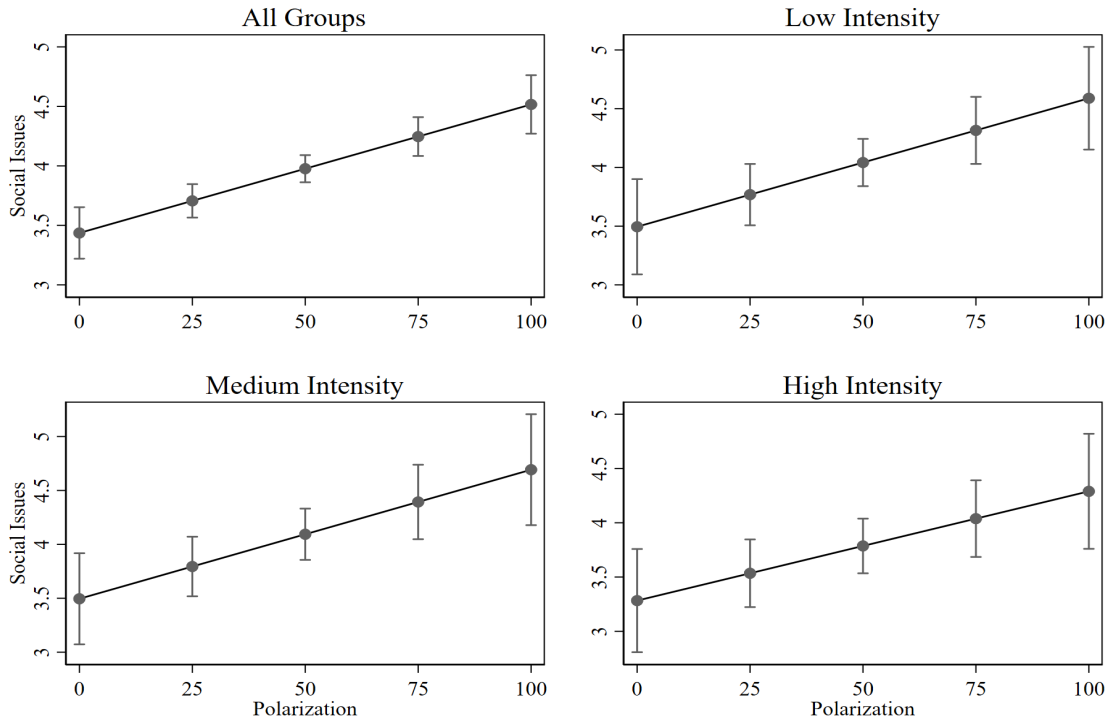
Note. Contrasts made via Tukey's differences: using Student's t-distribution. Control group received no retrospective prompt, low intensity group received music and movies retrospective prompts, medium intensity received social and economic issue retrospective prompts, and high intensity received racial equality legislation and drug legalization retrospective prompts. Standard errors in parentheses. N=282. \* p<0.05

We find no evidence to support our third hypothesis that exposure to treatment reduces polarization. This is consistent across the t-test, ANOVA, and pairwise comparison of means. This may be due to the low number of observations, but there is no evidence that expanding the sample would result in any meaningful results. Thus, we conclude that exposure to treatment has no effect on polarization. The t-test and ANOVA results are presented in online Appendix D, Table D-4, with the pairwise comparison of means presented in online appendix D, Table D-5.

Finally, we find strong, suggestive evidence that polarization decreases the likelihood of predicted future change – our fourth hypothesis. These results are presented in Tables D-6 to D-9 in online appendix D. Prospective evaluations of change on social issues is the strongest finding, with positive (defined as predicted similarity of opinions in future), statistically significant

<sup>5</sup>Several tables are placed in online appendix D for aesthetic and presentation purposes.





**Figure 2.** Effect of Polarization on Predicted Stability of Views on Social Issues, by Treatment Group: 2021 Sample.

effects both in aggregate and across all intensity groups – illustrated in Figure 2. On average, shifting from the minimum to maximum value of polarization results in a 20% increase in predicted similarity of opinion. Predicted attitudinal similarities for racial equality legislation and drug legalization are positive and statistically significant for the high-intensity treatment group but neither the low nor medium-intensity groups. This suggests the treatment was effective in prompting respondents to consider their previous changes on these topics when estimating future change. Conversely, the low-intensity topics of music and movies were not significant in all cases. This suggests that the political content of the medium and high-intensity group may have triggered a deeper degree of retrospection than the relatively trivial topics in the low-intensity group. We cannot ascertain causation at this time, but these results suggest that the end of history illusion operates differently for different categories of evaluative objects.

## Conclusion

Our 2018 survey provides strong, suggestive evidence that the end of history illusion encompasses political attitudes. Individuals systematically underestimate the future malleability of their attitudes as compared to retrospective consideration of attitudinal change. We were unable to consistently use this disparity as a priming effect in our 2021 survey to induce a respondent to contemplate and better predict future change. We were only successful in eliciting a significant effect for one treatment topic, economic issues. We theorize that the topic of economic issues was efficacious due to the generality of the prompt under consideration. Abstract topics may allow the respondent to consider change across several policy items rather than the specific prompts of the low and high treatments. The low and high-intensity treatments allowed respondents to isolate a specific evaluative object upon which to focus. Contrary to our expectations, this may reduce subsequent predictions of change on said object as the general concept of longitudinal change may be isolated within that article. Therefore, the respondent is understandably convinced that their current attitude is correct and, therefore, less likely to predict future change. The use of a less focused treatment, such as the medium intensity prompts, may allow respondents to generalize the concept of change, overcoming some of the motivated reasoning underlying the end of history illusion.

Regarding the efficacy of economic issues over social issues, it is plausible that undergraduate students have yet to develop solidified attitudes on economic issues as they are yet to enter the labor market in earnest. Conversely, social issues are likely of higher salience to this cohort, reducing the likelihood that students will predict future change – LGBTQ+ equality, reproductive choice, and similar issues tend to exist at the fore of campus politics. The relative importance of social over

economic issues among our sample likely reduces estimations of future change as respondents are more emotionally invested in their current social views. While this provides some motivation to continue to explore this phenomenon, our findings highlight the importance of experimental design evolution to best influence respondents and capture the nuances of change while accounting for highly polarized and biased participants.

The 2021 survey provided strong, suggestive evidence that affective polarization increases predicted rigidity in future attitudes, underscoring the multifaceted psychological contributors to this phenomenon. Efforts to depolarize individuals on a political level – exposure to contrasting information or highlighting the deleterious effect of polarization – may be insufficient. Future research should further explore the apolitical psychological contributors to polarization with the aim of developing effective depolarization strategies. It also appears that partisanship does not contribute to variability in prospective evaluations, as Kruskal Wallis tests do not indicate significant differences in responses based on partisanship once group assignment is considered - Tables E-1 to E-5 in online appendix E. These findings suggest the end of history illusion operates independently than a conservative proclivity towards attitudinal rigidity.

The end of history provides a theoretical framework for understanding the limitations of respondent self-assessment. Individuals appear hardwired towards current preferences and unreliable when moving beyond known information. Additionally, preferential bias towards attitudinal stasis and congruence biases is a difficult cognitive framework to overcome. The end of history illusion provides a useful framework with which to examine this phenomenon. Individuals place a large number of cognitive resources on reassuring themselves of their static quo alignments, and our argument provides several possible explanations. First, as the future is obfuscated, predicted change is likely to match current preferences as a means of positive self-assessment and reassurance of current behavior and attitudes. Second, past change may have little effect on informing one's future expectations for how they may change. In other words, while the past remains the past, individuals rely on the present to provide informational guidance for future experience. Individuals are prone to be naive to potential factors driving attitudinal evolution.

There are several key issues that need to be addressed moving forward. Foremost amongst these is to modify the experimental design toward a more efficacious treatment. It is likely that the verbiage, procedure, or strength of our intervention was insufficient to overcome the cognitive biases and psychological forces under study. Future iterations may provide respondents with vignettes or survey data highlighting the malleability of attitudes over time. Interventions may also be more potent with audio or video stimuli. A robust manipulation check will also be included in future iterations. The omission of such a check potentially limits the validity of our conclusions, though we found no evidence of insincere responses and excluded respondents who did not participate in the survey for a credible amount of time. We remain convinced that inducing malleability in an individual's predicted future through retrospection will stimulate respondents to reduce their reliance on the current political heuristics, the result of heightened affective polarization.

The average age of our sample limits generalizability and reduces our confidence in the conclusions drawn therefrom. The effects observed amongst undergraduate students may not be applicable to the general public. It is possible that individuals in this age cohort are more likely to predict future change as their attitudes and preferences have not yet solidified. Conversely, undergraduate students may underestimate future change as compared to the general public as they do not have the requisite experience to recognize that their attitudes have changed previously. We cannot speculate as to the causal effect of age on the propensity towards the end of history illusion, nor if other covariates are more influential. Future iterations of this research will address this uncertainty.

The end of history illusion may merely be an effect of human cognitive behavior rather than its cause. Therefore, isolating the phenomenon may only be useful as a limited treatment or heuristic cognition investigation to induce experiment participants to predict better how they may change. Reporting on change showed no impact as a motivation to move individuals away from their polarized stances. We expect this to be for several reasons, each consistent with the end of history hypothesis. Past change does not require participants to change in the future, and shifting one's past alignment on a particular stance does not provide enough information for the respondent to then estimate how they may shift again. Put differently, retrospection has not been shown to provide the requisite cognitive resources to estimate or predict future change beyond one's current assumptions. Attitudinal stasis provides an effective anchor that may make individuals more certain of the rightness of their current preferences.

## References

- Armakolas, Ioannis and James Ker-Lindsey, Eds. 2020. *The Politics of Recognition and Engagement: EU Member State Relations with Kosovo*. London: Palgrave Macmillan.
- Aydin, Aysegul. 2010. "Where do States Go? Strategy in Civil War Intervention." *Conflict Management and Peace Science*. 27(1):47-66.
- Balch-Lindsay, Dylan, Andrew. J. Enterline, and Kyle A. Joyce. 2008. "Third-Party Intervention and the Civil War Process." *Journal of Peace Research*. 45(3): 345-363.

- Black, Ian. 2011. "Libyan Rebels win international recognition as country's leaders." *The Guardian*. July 15, 2011. Online
- Boschee, Elizabeth, Jennifer Lautenschlager, Sean O'Brien, Steve Shellman, James Starz, Michael Ward. 2015. "ICEWS Coded Event Data." Online:  
<http://dx.doi.org/10.7910/DVN/28075>
- Box-Steffensmeier, Janet M and Bradford Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge: Cambridge University Press.
- Brownlie, Ian. 2008. *Principles of Public International Law*. 7<sup>th</sup> Ed. New York: Oxford University Press.
- Bull, Hedley. 1977. *The Anarchical Society*. New York: Columbia University Press.
- Byman, Daniel, Peter Chalk, Bruce Hoffman, William Rosenau, and David Brannan. 2001. *Trends in Outside Support for Insurgent Movements*. Santa Monica, CA: RAND.
- Caplan, Richard. 2005. *Europe and the Recognition of States in Yugoslavia*. Cambridge: Cambridge University Press.
- Cleves, Mario, Roberto G Gutierrez, William Gould, Yulia V. Marchenko. 2010. *An Introduction to Survival Analysis Using Stata*, 3rd ed. College Station, TX: Stata Press.
- Coggins, Bridget L. 2011. "Friends in High Places: International Politics and the Emergence of States from Secessionism." *International Organization*. 65(3): 433-67.
- Coggins, Bridget L. 2014. *Power Politics and State Formation in the Twentieth Century: The Dynamics of Recognition*. Cambridge: Cambridge University Press.
- Collier, Paul and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers*. 61(1):563-95.
- Correlates of War Project. 2011. "State Membership List, v2011." Online: <http://correlatesofwar.org>
- Cox, D.R. 1972. "Regression Models and Life-Table." *Journal of the Royal Statistical Society. Series B. (Methodological)*. (2): 187-220.
- CNN. 2004. "Aristide says U.S. deposed him in 'coup d'état.'" <http://www.cnn.com/2004/WORLD/americas/03/01/aristide.claim/>
- Crawford, James. 1979. *The Creation of States in International Law*. Oxford: Oxford University Press.
- Downer, Joshua. 2013. "Towards a Declaratory School of Government Recognition." *Vanderbilt Journal of Transnational Law*. 46: 581-611.
- Duque, Marina G. 2018. "Recognizing International Status: A Relational Approach." *International Studies Quarterly* 62(3): 577-592.
- Dur, Andreas, Leonardo Baccini, and Manfred Elsig. 2014. "The Design of International Trade Agreements." *Review of International Organizations*. 9(3): 333-52.
- Fabry, Mikulas. 2010. *Recognizing States: International Society and the Establishment of New States Since 1776*. Oxford: Oxford University Press.
- Fearon, James D. and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *The American Political Science Review*. 97(1):75-90.
- Findley, Michael G. and Tze Kwang Teo. 2006. "Rethinking Third-Party Interventions into Civil Wars: An Actor-Centric Approach." *Journal of Politics*. 68(4): 828-837.
- Finnemore, Martha and Kathryn Sikkink. 1998. "Norms and International Relations Theory." *International Organization*. 52(4):887-917.
- Garrner, Bryan A. and Henry Campbell Black. 2004. *Black's Law Dictionary*. 7th ed. St. Paul, MN: Thomson Reuters.
- Gleditsch, Kristian S. & Michael D. Ward. 1999. "Interstate System Membership: A Revised List of the Independent States since 1816." *International Interactions* 25(4): 393-413.
- Ghosn, Faten, Glenn Palmer, and Stuart Bremer. 2004. "The MID3 Data Set, 1993-2001: Procedures, Coding Rules, and Description." *Conflict Management and Peace Science*. 21(2):133-154.
- Ghosn, Faten, and Scott Bennett. 2003. Codebook for the Dyadic Militarized Interstate Incident Data, Version 3.10. Online: <http://correlatesofwar.org>.
- Goemans, Henk E. Kirstian Skrede Gleditsch, and Giacomo Chiozza. 2009. "Introducing Archigos: A Dataset of Political Leaders." *Journal of Peace Research*. 46(2): 269-83.
- Grant, Thomas D. 1999. *The Recognition of States: Law and Practice in Debate and Evolution*. London: Praeger
- Griffiths, Ryan A. 2016. *Age of Secession: The International and Domestic Determinants of State Birth*. Cambridge: Cambridge University Press.
- Halabi, Sam Foster. 2012. "Traditions of Belligerent Recognition: the Libyan Intervention in Historical and Theoretical Context." *American University International Law Review*. 27(2): 321-90.
- Jones, Daniel M., Stuart A. Bremer and J. David Singer. 1996. "Militarized Interstate Disputes, 1816-1992: Rationale, Coding Rules, and Empirical Patterns." *Conflict Management and Peace Science* 15(2):163-213.

- Kathman, Jacob D. 2011. "Civil War Diffusion and Regional Motivations for Intervention." *Journal of Conflict Resolution*. 55(6): 847-76.
- Kelsen, Hans. 1966. *Principles of International Law*. 2<sup>nd</sup> Ed. Edited and Revised by Robert W. Tucker. New York: Holt, Rinhart, and Winston.
- Keohane, Robert O. and Joseph S. Nye. 2012. *Power and Interdependence*. 4<sup>th</sup> Ed. Boston: Longman.
- Ker-Lindsay, James and Mikulus Fabry. Forthcoming. *Secession and State Creation: What Everyone Needs to Know*. Oxford: Oxford University Press.
- Koubi, Vallu, Gabrielle Spilker, Tobias Bohmelt, Thomas Bernauer. 2015. "Do Natural Resources Matter for Interstate and Intrastate Armed Conflict?" *Journal of Peace Research*. 51(2): 227-43.
- Lauterpacht, Hersch. 1947. *Recognition in International Law*. Cambridge, U.K.: Cambridge University Press.
- Libya Contact Group. 2012. "Fourth Meeting of the Libya Contact Group, Chair's Statement," July 15, 2011. Retrieved from U.S. Department of State, <http://www.state.gov/p/nea/rls/rm/168764.htm>.
- Lujala, Paivi, Jan Ketil Rod, Nadja Thieme. 2007. "Fighting over Oil: Introducing a New Dataset." *Conflict Management and Peace Science*. 24(3):239-56.
- Marshall, Monty and Keith Jagers. 2010. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2007*. Data online: <http://www.systemicpeace.org/inscrdata.html>
- Mearsheimer, John J. 1994/95. "The False Promise of International Institutions." *International Security*. 19(3): 5-49.
- Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics*. New York: W.W. Norton.
- Menon, P.K. 1994. *The Law of Recognition in International Law: Basic Principles*. Lewiston, NY: Edwin Mellen Press.
- Mirilovic, Nikola and David Siroky. 2015. "Two States in the Holy Land? The Israeli-Palestinian conflict and international recognition." *Religion and Politics*. 8(2): 263-85.
- Moravcsik, Andrew. 1997. "Taking Preferences Seriously: A Liberal Theory of International Politics." *International Organization*. 51(4): 513-533.
- Osiander, Anders. 2001. "International Relations, and the Westphalian Myth." *International Organization*. 55(2): 251-87.
- Peterson, M.J. 1982. "Political Use of Recognition: The Influence of the International System." *World Politics*. 34(3): 324-52.
- Peterson, M.J. 1997. *Recognition of Governments*. New York: St. Martin's Press.
- Ratliff, Suellen. 2009. "UN Representation Disputes: A Case Study of Cambodia and a New Accreditation Proposal for the Twenty-First Century." *University of California Law Review*. 87: 1207-64.
- Regan, Patrick M. 1998. "Choosing to Intervene: Outside Interventions in Internal Conflicts." *The Journal of Politics*. 60(3): 754-779.
- Regan, Patrick M. 2000. *Civil Wars and Foreign Powers*. Ann Arbor: University of Michigan Press.
- Regan, Patrick M. 2002. "Third Party Interventions and the Duration of Intrastate Conflicts." *Journal of Conflict Resolution*. 40(1): 336-359.
- Roth, Brad R. 1999. *Governmental Illegitimacy in International Law*. New York: Oxford University Press.
- Roth, Brad R. 2010. "Secessions, Coups and the International Rule of Law: Assessing the Decline of the Effective Control Doctrine." *Melbourne Journal of International Law*. 11:393-440.
- Ryngaert, Cedric and Sven Sobrie. 2011. "Recognition of States: International Law or Realpolitik? The Practice of Recognition in the Wake of Kosovo, South Ossetia, and Abkhazia." *Leiden Journal of International Law*. 24(2): 467-90.
- Saideman, Steven M. 2002. "Discrimination in International Relations: Analyzing External Support for Ethnic Groups" *Journal of Peace Research* 39(1): 27-50.
- Schrodt, Philip A. 2012 "CAMEO: Conflict and Mediation Event Observations Event and Actor Codebook." Online: <http://eventdata.parusanalytics.com/data.dir/cameo.html>
- Siroky, David S., Milos Popovic, and Nikola Mirilovic. 2021. "Unilateral secession, international recognition, and great power contestation." *Journal of Peace Research*. 58(5):1049 – 1067.
- Sterio, Milena. 2012. *The Right to Self-Determination under International Law: 'Selfistans,' Secession, and the Rule of the Great Powers*. New York: Routledge.
- Spruyt, Hendrick. 1994. *The Sovereign State and its Competitors: An Analysis of Systems Change*. Princeton: Princeton University Press.
- Talmon, Stefean. 1998. *Recognition of Governments in International Law*. New York: Oxford University Press.
- U.N. Security Council, 4919<sup>th</sup> Meeting. "Resolution 1529 (2004)". February 29, 2004. <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N04/254/10/PDF/N0425410.pdf?OpenElement>
- United States Department of State. 2011. "Remarks on Libya and Syria." July 15, 2011. <http://www.state.gov/secretary/rm/2011/07/168656.htm>

- Visoka, Gezim, John Doyle, and Edward Newman. 2020. *Routledge Handbook of State Recognition*. New York: Routledge, Taylor and Francis Group.
- Von Glahn, Gerhard and Larry Taulbee. 2013. *Law Among Nations: An Introduction to Public International Law*. 10<sup>th</sup> Ed. New York: Pearson.
- Waltz, Kenneth N. 1979. *Theory of International Politics*. Reading, PA: Addison Wesley.
- Wendt, Alexander. 1999. *Social Theory of International Politics*. Cambridge: Cambridge University Press.
- Wilson, Robert R. "International Law in Treaties of the United States." *American Journal of International Law*. (31): 271-84.