

Unraveling Polarization: Insights into Individual and Collective Dynamics

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Abstract

Polarization is a critical issue in today's world, impacting democracy and sparking debates on climate change, populism, and global health. This perspective delves into the nature, origins, measurement challenges, and potential interventions for polarization. It examines how polarization can be perceived as an individual mindset and as a collective state and explores the interactions between individual and collective levels. Defining, measuring, and understanding polarization are intricate, multi-faceted tasks that involve diverse theoretical perspectives, measurement techniques, and practical interventions. Our analysis concentrates on the dynamics within and across the individual-collective spectrum through three interconnected dimensions: conceptual understanding, measurement methodologies, and intervention strategies. We conclude by pointing out future directions for understanding polarization and highlighting the interrelations as well as differences between polarization and other social phenomena.

1. Introduction

For centuries, scholars and researchers have explored the dynamics of polarization. Historical analyses reveal that the phenomenon has characterized the US Congress for much of its history (Brady and Han, 2007). Outside the US, Karl Marx and Max Weber were two of the earliest and most prominent figures to discuss class polarization. Class polarization refers to the division of society based on different social classes, often associated with disparities in income and wealth. Party polarization, on the other hand, occurs when political parties move towards extreme ideological positions, creating a significant divide within the political landscape. Throughout the 1970s and 1980s, the concept of party polarization underwent a process of evolution and expansion, extending its influence across diverse fields of study and spawning various iterations. In psychology, the concept of group polarization emerged, while in economics, the notion of social polarization gained popularity (Pahl, 1984; Moscovici and Zavalloni, 1969). By the early 2000s, research on affective polarization began to flourish, emphasizing the role of groups and identities as fundamental elements in American politics (Iyengar et al, 2012).

Affective polarization research has its roots in the United States, with rich documentation of its presence and impact (Iyengar et al., 2019). Recently, the scope of this research has widened to include studies on partisan antagonism in various Western democracies (Boxell et al., 2022; Röllicke, 2023; Turner-Zwinkels

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et al., 2023). The emergence of far-right political parties in numerous European nations has evoked intense aversion among established political entities (Gidron et al., 2019; Helbling and Jungkunz, 2020; Mudde and Kaltwasser, 2018). Countries such as France, Italy, and Germany have experienced political upheavals due to these radical parties, while Spain, the United Kingdom, and Canada grapple with separatist movements within their political frameworks. Scholars suggest that American partisan hostility ought to be interpreted in a broader, comparative context (Adams et al., 2020). Although the initial studies of affective polarization in Europe have enriched the understanding of the phenomenon, there is an ongoing debate regarding the need for more refined measurement tools, advanced theoretical frameworks, and a clearer depiction of affective polarization's significance (Wagner, 2024). The present essay synthesizes and reframes these debates by examining the dynamics of polarization as a phenomenon that simultaneously affects and is affected by individuals, collectives, and their interactions.

In this perspective piece, we propose that any endeavor to measure or define polarization must consider the interactions within and between the individual-collective spectrum. To further support and elaborate on this line of thought, we focus on three distinct research dimensions: a conceptual perspective in Section 2, measurement methodologies in Section 3, and cross-level interventions in Section 4. Accordingly, we pose three interrelated questions: (1) is polarization primarily defined as a characteristic of individuals or the system, (2) do measurement methods assess individual levels of polarization or the extent of division within a collective, and (3) which interventions influence which levels of polarization.

2. The complexity of Polarization

2.1 Interdisciplinary Perspectives: Definitions and Dynamics

Polarization is defined differently across various disciplines, and each brings its unique perspective to understand its causes, manifestations, and consequences. A plethora of terms such as identity, group dynamics, extremity, tensions, trust, values, biases, beliefs, norms, emotions, misperceptions, epistemic conflicts, partisanship, stereotyping, cohesion, diversity, and prejudice are employed to articulate the nuances of polarization. Though numerous theories address these aspects individually (Hale et al., 2020), we do not yet have a singular, all-encompassing theory of polarization. This may stem from the absence of a consistent ontological framework to construct such a theory. What are the foundational elements that constitute polarization? What is the set of entities that we can put into boxes to draw arrows between; that we can imagine interacting with other entities that cause, reduce, or affect polarization?

The nature of polarization is multifaceted, encompassing a wide range of constructs and metrics that sometimes vary between disciplines (Abrams et al., 1990; Permyer 2012; Esteban and Ray 1994). However, the complexity of the term extends beyond its varied interdisciplinary interpretations. Within any single field, there is often ambiguity surrounding the exact social phenomena related to belief formation being referred to or the manner in which opinions are polarized. *Ideological polarization* often denotes divergence in political parties' stances on societal, economic, and political matters, whereas *affective polarization* generally indicates an emotional aversion and distrust toward political adversaries. Although theoretical and empirical distinctions between these concepts have been proposed (Lelkes, 2018; Iyengar et al., 2019), ideological and affective polarization are correlated (Abramowitz and Webster, 2016; Rogowski and Sutherland, 2016; Bougher, 2017). From an epistemological standpoint, this raises the question: what is the essence of polarization—is it about beliefs, opinions, emotions, or trust?

The concept of affective polarization suggests that polarization can be analyzed as an emotional phenomenon (Bakker and Lelkes, 2024). Such an analysis rests on three tenets: polarization is influenced by either positive sentiments towards one's group or negative sentiments towards an opposing group, it involves passionately held beliefs, and it is connected to moral identity—a concept closely linked to emotions (Prinz, 2021). Some studies on political emotions have shown that conservatives tend to express fear and disgust, while liberals demonstrate empathy but also anger towards those they perceive as insufficiently empathetic (Inbar et al., 2012; Hasson et al., 2018; Yang et al., 2019, c.f., Bakker et al. 2020). Still, the study of emotions reveals an initial critical distinction between individual and group emotions in the context of polarization.

Group emotions, stemming from the collective mood of a social group, can intensify polarization by driving group identity, solidarity within the group, and animosity towards outsiders (von Scheve, 2017; Versteegen, 2024; Renström et al., 2023). While individual-level and group-level emotions interact and reinforce each other, it is unclear how these emotional dynamics contribute to or reduce affective polarization. Emotions are dynamic, changing in strength and duration, and influenced by both individual and group emotion regulation strategies (Gross, 2015; Goldenberg, 2023). This suggests that polarization is a dynamic process rather than a fixed state, influencing the methodology for analyzing, measuring, and comprehending it. Affective polarization thus integrates emotional reactions at both the individual and group levels, prompting two issues to be briefly explored next: whether polarization is a process or a state and if it is an attribute of groups or individuals.

2.2 Across Multidimensional Spectrums: Interactions and Implications

Polarization manifests across a wide spectrum, encompassing ideological-affective, elite-mass, and individual-collective dimensions. In the United States, for instance, it's clear that American political elites are both affectively and ideologically polarized. However, there is some debate as to the extent to which the American mass public is also ideologically divided or merely ideologically sorted (Fiorina and Abrams 2008). The American mass public is also clearly affectively polarized (Iyengar et al., 2012). How, if at all, do these dimensions interact?

The interplay between individual beliefs and systemic structures suggests that polarization is not just a matter of individual psychology or differing opinions, but it is also a state of the system that is reinforced by political, media, and social structures. It's a feedback loop where systemic incentives for division increase political homogeneity within groups, which, in turn, deepens systemic polarization (van Bavel and Pereira, 2018; Leonard et al., 2021; Levin et al., 2021; Callander and Carbajal, 2022; Simchon et al., 2022). In recent years, social media has been one determinant in this individual-collective nexus, as it progressively influences individual perceptions of the political landscape (Klein, 2020; Bail et al., 2018; Azzimonti and Fernandes, 2023, Törnberg, 2022). The proliferation of media channels and the advent of social media have created environments where individuals can be exposed almost exclusively to information that reinforces their existing beliefs and biases, thereby deepening convictions and increasing misinformation and distrust of the opposing side (Tucker et al., 2018; McLaughlin 2018; Kubin and von Sikorski, 2021).

Deeply interwoven into the individual-collective spectrum is the process-state spectrum, delineating the dynamics of polarization. The term 'polarization' may denote either a static, temporal snapshot (the configuration of a population at a given moment) or an evolving process (the dynamics of a population's configuration over time). Certain formal measures of polarization (e.g., [Bramson et al., 2017](#)) are attributes of distributions of cardinal-valued beliefs, assessed at specific moments in time. These measures allow for the comparison of opinion patterns across various issues or among different populations. Thus, when one observes that American political opinion is polarized, it is generally an articulation of a current, unchanging state; nonetheless, the term can also signify the process of becoming more polarized, such as the escalation of emotional polarization amidst electoral campaigns. Additionally, certain forms of polarization are inherently dynamic and cannot be captured through simple comparative analyses of groups or temporal sections. The interplay between intra-personal dynamics and inter-personal conflicts illustrate types of polarization that fall within a continuum from states to processes rather than fitting neatly at either extreme ([van der Maas et al., 2020](#); [Wu et al., 2022](#)).

Understanding polarization as a process involves examining its genesis and possible effects. The origins of polarization have been studied from diverse perspectives, yielding varied and sometimes conflicting results. Classical social psychology research indicated that homogenous group discussions tend to amplify polarization, with individuals' stances growing more entrenched as they assess the relevant evidence ([Moscovici and Zavalloni, 1969](#); [Lord et al., 1979](#)). Contrarily, recent studies suggest that discussions could foster greater consensus among people, with the degree of social influence hinging on the preexisting similarity of their viewpoints ([Axelrod, 1997](#); [Hegselmann and Krause, 2002](#); [O'Connor and Weatherall, 2017](#)). Alternate theories posit that polarization can stem from the strength of partisanship as a component of social identity or from the malleable nature of individual preferences shaped by the prominence of various information sources ([Zaller, 1992](#); [Iyengar et al., 2019](#)). From these research angles, polarization is often regarded as a dangerous trend, potentially leading to the weakening of democratic principles, diminishing societal trust, and escalating levels of partisan antipathy and discrimination.

Nonetheless, empirical data suggests potential positive outcomes of affective polarization. Elevated polarization levels may indeed serve societal interests, correlating with increased political engagement and a broader sense of electoral options ([Harteveld and Wagner, 2023](#)). Polarization can serve as a catalyst for mobilization, particularly engaging those typically disinterested in politics, thus resulting in higher voter turnout when oppositional feelings towards political adversaries intensify. Moreover, polarization may facilitate the decentralization of power, bolster collective decision-making accuracy, and amplify the voices of politically underrepresented individuals ([LeBas, 2018](#); [Barrera-Lemarchand et al., 2023](#)).

There are also emotional advantages to political polarization. There is a close link between political divisions and affective polarization, ideologically grounded emotions, and the deeply ingrained elements of personal identity. If policies fail to mirror our emotional responses, the government will not meet the expectations of its constituents to create desired societal frameworks. These expectations are intrinsically connected to emotions, leading to dissatisfaction when unmet ([Hochschild, 2016](#); [Prinz, 2021](#)). They are also tied to social and political identities: in a broad, heterogeneous society, political identities will inevitably vary, and intense polarization reflects the degree to which various groups have succeeded in projecting their preferred positions into the public discourse. Polarization, rather than forcing uniformity, indicates an endeavor towards the coexistence of diverse identities.

These nuanced outcomes of polarization and intersections of emotions, identity, and other social elements across diverse polarization spectrums are essential for comprehending the complex nature of polarization. It is not merely the interconnection and impact of various concepts and theoretical frameworks on polarization that are significant, but also the dynamic interplay between process-state and individual-collective spectrums, which influences the methods by which we quantify polarization and confront its ramifications. See Figure 1 for a visual representation.

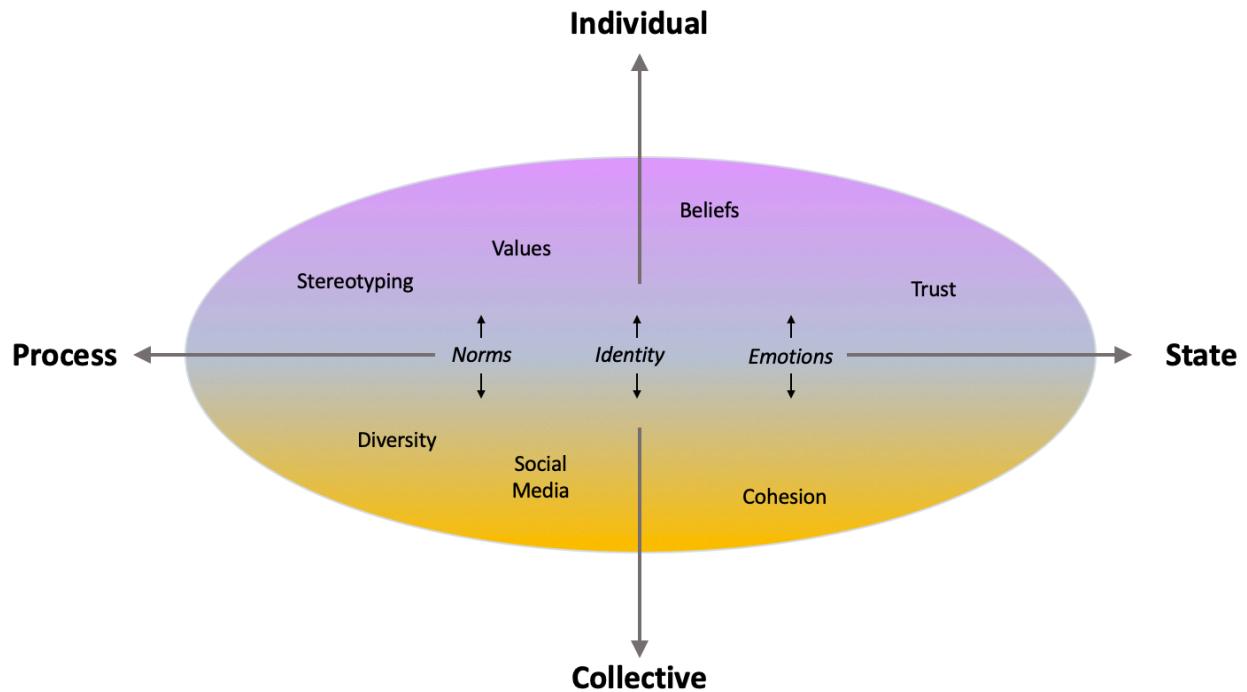


Figure 1. Mapping polarization as a complex phenomenon. A selection of elements (e.g., beliefs, identity, trust) define polarization on an individual level and are situated within the individual/state quadrant. Progressing towards the collective/state quadrant, we encounter notions like social norms and collective emotions, which are pivotal for perceiving polarization as a trait of groups. The shift along the state-process spectrum may take place separately from the individual-collective transition, where factors like the influence of social media or stereotyping engage with the dynamic nature of polarization. The two-sided arrows represent entities that operate on both the individual and collective levels. While there might be more elements affecting polarization on both levels, we chose to focus on norms, identity, and emotions as they are the central drivers connecting individual and group behaviors.

The general idea behind the figure is that polarization can be understood, measured, and intervened in across each of these four dimensions; it can be addressed as a characteristic of individuals, a characteristic of the system, an ongoing process, or a current state of affairs. Regardless of which approach to polarization we adopt, it affects and is affected by the other three poles. For example, if we address polarization as a trait of the system, we must consider that it is measured through individuals’ opinions or behavior. Hence, any change in individuals’ polarized views affects the levels of polarization within the system. Changes in individuals’ levels of polarization derive from their identification processes, their group categorization, how they perceive social norms, and the extent to which they are exposed to social media. All these factors constantly interact and affect each other, and their impact on individuals’ polarization levels might be immediate or can take longer, depending on the individual’s personality and cognitive processes. These dynamics can turn polarization into being seen as a process rather than a state and vice versa.

The figure suggests that any definition or description of polarization must take into account the dynamics across the individual-collective divide, specifically considering processes and mechanisms that operate on both levels. Three such elements appear in the figure: norms, identity, and emotions. Norms are societal rules that shape cultures, but they are also elements that can be internalized and become goals in themselves (Henrich 2015; Bicchieri 2016; Gelfand 2018). Our attitudes toward social norms are shaped by social identification processes, affecting our group identity and national identity, which are both essential for understanding the evolution of polarized views in individuals and groups (Kish Bar-On and Lamm, 2023; Reynolds, Subašić, and Tindall 2015). Emotions affect our levels of identification with the group, as well as our feelings of commitment towards social norms. As such, norms, identity, and emotions not only operate on both the individual and collective levels, but they also interact and affect each other.

We propose that a better understanding of polarization must combine the dynamics across divides and the dynamics between the elements within the divides. Any attempt to define or measure polarization needs to be taken from both sides of the spectrum: from an individualistic perspective and from a systematic perspective. Likewise, any intervention or attempt to change polarization that targets moral values, social identity, norm perceptions, opinions, or emotions towards others must consider the mutual impact and dynamics between these elements, and that some of them carry significant implications for both the individual and the collective levels. For example, an attempt to change individuals' opinions towards the other side by invoking mutual national or social identities (Levendusky, 2018; Wojcieszak and Garrett, 2018; Vignoles et al. 2021) might increase sensitivity to in-group norms and encourage individuals to disobey them. On the group level, this can induce changes to the group structure, size, and social hierarchy, which in turn affects individuals' group membership and social identity. Hence interventions on the individual level can affect system polarization, and interventions on the system level can change individuals' polarized views.

This is yet another example of how polarization manifests as a feedback loop between individual opinions and group structure, suggesting that both of these dynamics are critical for understanding polarization through the lens of behavioral sciences. Much like the idea that behavioral sciences explore the cognitive processes within individuals and the behavioral interactions between them, polarization is a phenomenon that has roots in individuals' cognitive processes but is also deeply influenced by their social interactions. One cannot be understood without the other, and both the individual and the collective levels play an essential role in understanding and measuring polarization. Let us now examine what precisely is being quantified when measuring polarization, and where the individual-collective spectrum can assist in better understanding the explained phenomenon.

3. Measuring Polarization across the individual-collective divide

The term political polarization has been defined in various ways, targeting different constructs. Some argue that it denotes the divide between political parties, others claim that it represents the gap between party supporters and opposers, and others describe it as the divergence between groups or the consensus within them. Consequently, debates over the extent of polarization among political groups are influenced by the specific target construct and definition of polarization being used. For instance, a central line of inquiry has been the extent to which Americans, en masse, are ideologically polarized (Abramowitz and Saunders, 2008; Fiorina and Abrams, 2008). Both sets of scholars rely on survey measures of policy attitudes, but

different definitions yield different answers. One set defines polarization as ideological divergence, or movement to the extremes, interrogating whether the variance of attitudes within the mass public has increased over time (Fiorina and Abrams, 2008). Another set of scholars (e.g., Abramowitz and Saunders, 2008) defines polarization as ideological coherence, wherein those who identify as Democrats increasingly hold liberal attitudes, while those who identify as Republicans increasingly hold conservative attitudes. Findings suggest that while ideological divergence has not notably increased, ideological coherence has intensified (Levendusky, 2009). Although the precise impact of mass polarization on democratic stability is debatable, both divergence and coherence present challenges: divergence complicates consensus-building, and coherence fosters inflexible factions, undermining the potential for cross-party compromise.

Survey-based methods for studying political beliefs and ideological polarization are widely used but come with significant drawbacks. One issue is that people often don't answer these surveys sincerely (Bullock and Lenz, 2019). Some might choose extreme positions to show loyalty to a political party, while others might express opinions on policies they haven't actually thought about, resulting in what is known as "pseudo-attitudes." To address these limitations, researchers often turn to actual behaviors. For example, analyzing voting patterns is a common approach. When examining the general population, this often involves looking at which candidates people vote for. In studying political elites, researchers might analyze how legislators vote on specific bills, using this information to create a scale of ideological positions. Another innovative method involves assessing whom people follow on social media to deduce their political leanings.

Behavior-based methods, designed to address the sincerity issues associated with survey techniques, inherently rely on proxy measures to gauge political ideology, leading to debates over how accurately these behaviors reflect the underlying ideological positions. For example, the trend of narrowly decided elections favoring ideologically extreme candidates is often interpreted as a sign of widespread polarization. However, such outcomes might more accurately reflect the limited options available to voters rather than their actual ideological preferences (Fiorina and Abrams, 2008). Similarly, the degree to which roll-call measures of elite polarization or mass polarization using social media follower networks represent political beliefs is debatable. Neither roll-call votes nor online behavior may fully represent a person's ideology, in part because both are public and can be influenced by strategic considerations.

Considering the two interacting spectrums discussed in the previous section (individual-collective and process-state), the primary observation in both behavior-based and survey-based methods is the lack of explicit focus on the interactions between and within these spectrums. In one of the foundational early studies on polarization, DiMaggio, Evans, and Bryson (1996) viewed ideological polarization as a concept that could be both a state and a process: polarization as a state refers to the degree to which opinions on an issue are opposed relative to a theoretical maximum, and polarization as a process refers to the increase in such opposition over time. Although some studies (e.g., Fiorina and Abrams 2008) recognize DiMaggio's observation, they argue that determining whether a distribution is polarized is generally a matter of judgment and do not specify which perspective they adopt. This ambiguity makes polarization appear as an even more elusive concept, one that shifts across the process-state spectrum for reasons that are unclear or unaccounted for.

A more pressing issue is the mutual interactions within the individual-collective spectrum, especially considering the problematic aspects of survey responses. Bullock and Lenz (2019) start their paper by examining what constitutes a belief and what drives people to provide incorrect answers. Factors such as group identity, party affiliation, and pro-party heuristics often influence individuals' responses to opinion surveys, as well as their levels of knowledge and confidence (Khanna and Sood 2018; Ortoleva and Snowberg 2015). This description highlights several interacting elements from both sides of the spectrum: at the individual level, there are beliefs, knowledge, and confidence levels; at the collective level, there are group identity, party affiliation, and pro-party heuristics. These elements interact and influence each other, continuously moving back and forth across the individual-collective divide. For instance, group identification processes can prompt individuals to alter their beliefs, which can subsequently affect their knowledge and confidence levels. However, surveys measure opinions, beliefs, and biases at the individual level. How, then, does the aggregation of individual beliefs reflect the level of system polarization?

Another example of the individual-collective ambiguity arises when shifting the focus to other types of polarization, such as affective polarization. Affective polarization is often measured using "feeling thermometers" on surveys, which assess an individual's likes or dislikes of a party. The prevalence of feeling thermometers owes more to their longstanding inclusion in large national surveys, facilitating longitudinal analysis than to their perfect encapsulation of affective polarization. Dislike for a political party can stem from various sources, including perceived social distance, identity affiliations, or ideological disagreements. Another critique of survey-based measures of affective polarization is that they typically ask respondents about their feelings towards, e.g., Democrats or Republicans (Klar et al., 2018). When answering these questions, respondents tend to think of political elites or political activists, which may yield results that overestimate the extent to which people dislike the average partisan. In this context, the individual-collective spectrum appears as a target, prompting the question of whether polarization is an attitude towards individuals, groups, or institutions, and whether there is a distinction in measuring attitudes towards individuals versus groups.

Our point is to highlight that when social scientists measure polarization, they often interchange polarization as a characteristic of individuals with polarization as a characteristic of the system. The study of how emotions affect polarization serves as a good example. Although emotions play a significant role in affective polarization, it remains unclear which emotions are politically important and how a holistic conception of emotions can provide a better understanding of the underlying causes of polarization (Bakker and Lelkes 2024). There is a distinction between group-level emotions and individual-level emotions (e.g., Smith and Mackie 2016), and both play a part in a holistic conception of emotions. To map and explain how each emotion at each level affects polarization, researchers should seriously attend to the idea that there is a difference between polarization at the individual level and at the collective level, which needs to be addressed in experimental and theoretical settings.

The recognition of self-report limitations in accurately capturing affective polarization has motivated some scholars to turn toward behavioral indicators (e.g., Iyengar and Westwood 2015, 2017; Druckman et al., 2023; Dimant 2024; Dimant et al., 2024). These methods, which primarily assess trust, altruism, and cooperativeness, offer a novel lens to gauge partisan bias. Whether this bias is a result of partisanship of the partner, per se, versus other constructs that are strongly correlated with a partner's partisanship, e.g.,

their race or education, is an open question. At the forefront of this development are new validated measurement techniques that create the opportunity to measure important facets of polarization, including the ability to capture pluralistic societal views and norms (Dimant, 2023; Panizza et al., 2023, 2024). The broad implementation of such behaviorally informed scales will also enable researchers and practitioners to formulate policy implications that produce interventions that reduce polarization more successfully.

In sum, the diverse approaches to studying polarization—spanning ideological to affective dimensions—underscore the critical importance of ensuring that the chosen measures accurately reflect the targeted construct. Whether through surveys or behavioral indicators, researchers must navigate the challenges of capturing genuine attitudes and behaviors amidst the potential for insincerity, strategic responses, and the influence of external factors. The reliance on proxy measures, while practical, introduces an additional layer of complexity in interpreting results and drawing conclusions about the underlying ideological or affective states.

More importantly, the measurement problem we want to emphasize revolves around the complexity of polarization as both an individual and systemic phenomenon. Measurement methods often fail to clarify what exactly they measure: are they assessing individual levels of polarization or the degree of division within a group, collective, or society? How do measurements of individual polarization levels translate into collective polarization levels? Is systemic polarization merely the aggregate of individual polarization levels?

As shown in Figure 1, an individual's polarization level results from her interactions with the groups she belongs to, the institutions she's part of, her values, norms, social identity, current emotional states, exposure to social media, and so on. Each of these elements is dynamic, interacting with others, and affects different individuals in various ways. Therefore, considering systemic polarization as merely an aggregate of individual polarization levels is overly simplistic and does not accurately reflect the actual phenomenon. Systemic polarization and individual polarization can be two distinct phenomena requiring different measurement methods. This realization can also influence how interventions are designed and which interventions might have a greater impact on individuals or on collective polarization levels.

4. Towards cross-level interventions in polarization research

At the heart of polarization research are assumptions about its deleterious effect on various social and political outcomes. Consequently, quite a bit of research (and money) is devoted to understanding its causes and identify interventions. Interventions to reduce polarization aim to foster understanding, reduce prejudice, and promote dialogue between opposing groups, and largely focus on individual-level solutions. For instance, one prominent study showcased a number of strategies for reducing partisan animosity (Voelkel, Stagnaro, et al. 2024). One such strategy focuses on showcasing relatable, empathetic individuals with differing political views from the participant. Another effective strategy emphasizes shared cross-partisan identities using interventions highlighting that Democrats and Republicans share a common national identity and collectively represent an exhausted majority tired of political conflict.

While these interventions are often successful in lab settings and can change perceptions about the other side or strengthen real or imagined relations with the outparty (Broockman et al., 2022; Hartman et al., 2022; Dimant, 2024; Druckman et al., 2024), they typically do not address deeper issues related to democratic norms, group behaviors and political structures. For instance, while interventions that correct stereotypes of the other side are sometimes effective, they are easily undone in a competitive political information environment (Druckman, 2023), where stereotypes are reset. This example indicates that addressing affective polarization likely necessitates more complex institutional reforms rather than solely relying on behavioral interventions. It may be that interventions at the individual level could be more effective when reinforced by interventions at the institutional or collective level.

At the individual level, people who are, e.g., affectively polarized, tend to be more ideologically polarized and more likely to be exposed to anti-democratic rhetoric. As a result, they can be more susceptible to endorsing behaviors and policies that undermine democratic principles, such as supporting candidates who refuse to accept election results, engaging in political violence, or prioritizing partisan gains over democratic norms. Interventions targeting these attitudes aim to reinforce commitment to democratic values and discourage anti-democratic actions, and they are not necessarily the same interventions that reduce affective polarization (Voelkel et al. 2023).

One strategy that reduces support for undemocratic parties is correcting misperceptions and exaggerated stereotypes of the other side and highlighting the potentially drastic and violent consequences of democratic collapse. Similar to interventions targeting partisan animosity, these efforts also focus on individuals, aiming to change their opinions, views, or beliefs. However, not all interventions targeting partisan animosity were effective in reducing support for undemocratic parties. Some approaches, such as those focused on correcting individuals' misperceptions and emphasizing a common identity, had the opposite effect and actually increased support for undemocratic parties. The key point is that reducing partisan animosity and support for undemocratic practices require distinct interventions. Effective polarization research needs to address both emotional attitudes and commitment to democratic norms to create a more stable and cohesive political environment.

Interventions, therefore, operate on several levels: (1) the individual level, targeting beliefs, views, and perceptions; (2) the interpersonal level, affecting interactions between people and their groups; and (3) the system level, focusing on reforming political systems, social media influences, and public discourse norms. These levels are not mutually exclusive, and there may be other levels or sublevels (e.g., the system level includes interventions on groups, institutions, collectives, and random aggregates of people—each requiring a distinct kind of intervention). More importantly, these levels constantly interact, meaning interventions at one level can impact other levels. For example, an intervention that changes an individual's belief can affect their interactions with people in their in-groups and out-groups. If this individual is a group influencer, this change can affect the entire group's beliefs, potentially triggering a chain reaction of belief changes across the system. Conversely, an intervention to change polarizing rhetoric through changes in public discourse norms can shape dialogue norms in smaller groups. If these changes persist, such norms can become part of the group's social identity and eventually be internalized by group members.

The continuous interactions across different levels, elements, and divides are the common thread among the three sections of this paper. As we argued in previous sections, polarization is a concept deeply

intertwined with both individual and collective levels. Therefore, we suggest that the most effective interventions should include elements that operate on all levels. For example, an intervention that changes emotions at the individual level and also targets emotions at the group level operates across the individual-collective divide, addressing both the individual and the system levels simultaneously. Another cross-level intervention might combine incentives for changing discourse norms at the individual level while simultaneously motivating changes in public discourse norms. See Figure 2 for a visual representation of interventions at each level and across levels.

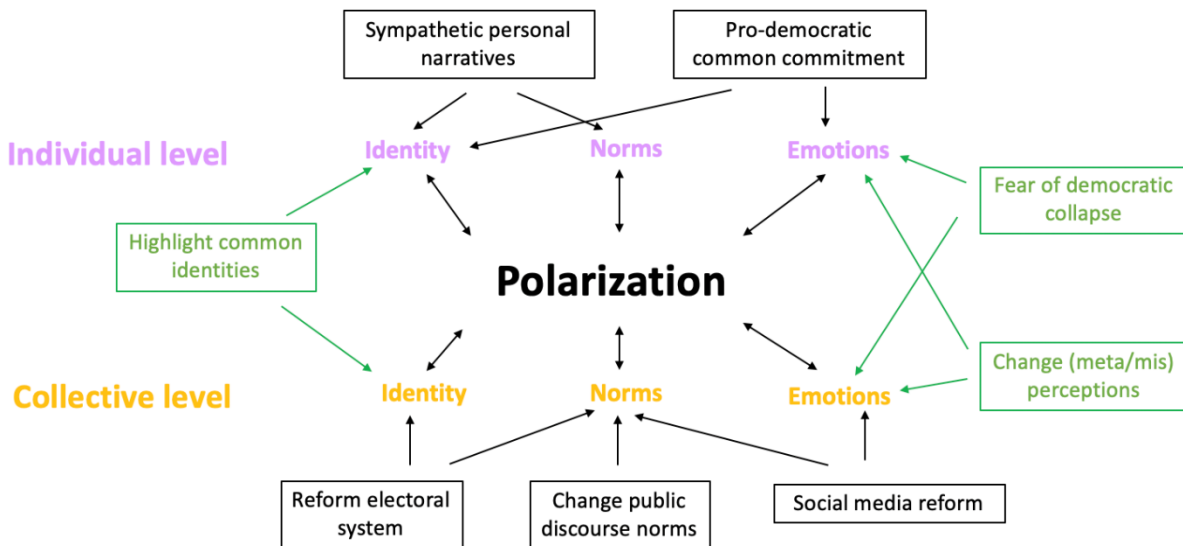


Figure 2. Interventions within and across levels. Polarization is represented here as a continuous process occupying both individual and collective levels (represented in pink and orange, respectively). Identity, norms, and emotions are three central elements affecting polarization, operating on both levels. Arrows indicate which intervention affects which element and level. Most interventions target either the individual level or the collective level (black boxes). We propose that interventions operating on both levels (green boxes) or directly impacting elements on both levels are more likely to succeed in reducing polarization. For example, fear of democratic collapse targets individual emotions but also affects shared values, ideas, and beliefs within a group. Another example is changing perceptions, involving various interventions aimed at correcting misperceptions and altering meta-perceptions. These interventions, when combined effectively, can impact both individual and group perceptions simultaneously.

The idea here is to use the individual-collective polarization scale to map possible interventions, and derive new intervention ideas from combining existing and new interventions on each level. This way, we can create cross-level interventions, that target both individual and collective levels at once, thereby simultaneously affecting both spectrums of polarization. For example, one cross-level approach involves community dialogues and media campaigns. These initiatives encourage critical thinking and empathy through storytelling on the individual level and facilitate local dialogue sessions among diverse groups. By partnering with media organizations, these dialogues can be broadcast to promote positive discourse across the collective level. Another cross-level intervention is creating educational programs that combine civic engagement with school curriculums. These programs incorporate media literacy and bias recognition modules on the individual level, and organize student-led projects requiring cross-political collaboration. Partnering with educational institutions can ensure these initiatives become integral parts of the curriculum, fostering long-term impact on the collective level as well.

Workplace diversity initiatives, public policy forums with deliberative polling, and social media platforms promoting civil discourse are other examples (Lau et al. 2023; Combs et al. 2023; Podgórska-Rykała 2024). On the individual level, these interventions provide training on unconscious bias, encourage collaboration on social responsibility projects, and integrate features to highlight diverse viewpoints and fact-check misinformation. By collaborating with corporations and tech companies, these initiatives can shape organizational culture and online discourse norms on the collective level, ultimately fostering a more inclusive and understanding society.

Clearly, such cross-level interventions are harder to design and test, as it might take a while before we can measure their impact across both levels. They might also be harder to implement, given the many interacting elements, some of which may be harder to control than others. Nonetheless, we believe this approach might be the most fruitful way forward, even if it requires designing more complex experiments. Polarization is a complex concept that leads to many disagreements among scientists regarding the appropriate definitions, measurement methods, and effective interventions. We believe this complexity and dissatisfaction are intrinsic to understanding complex social reality; the variety and heterogeneity of interacting elements and levels of operation mirror the genuine complexity found in social phenomena like polarization. Hence, there is no easy solution—if we aim to reduce polarization, it must be a communal, interdisciplinary effort incorporating conceptual analyses, theoretical overviews, and experimental interventions across multiple levels.

5. Concluding Remarks

Polarization has emerged as a significant factor influencing the fabric of democracy and societal cohesion around the world. This phenomenon is both influenced by and influences the interactions between individuals including their social identities, values, emotions, and beliefs, as well as larger collectives, including social groups, institutions, communities, and political parties. Understanding polarization requires a multi-level analysis that spans from conceptual frameworks to measurement techniques and the development of interventions. We emphasize the importance of considering the interactions across the individual-collective spectrum, which are essential for a comprehensive exploration of polarization at various levels of analysis.

As we navigate the nuances of polarization and its implications, our discussion extends to the potential pathways for addressing and mitigating its divisive effects on society. To better understand these effects, we must first understand the ways in which differences in opinion shape emotions, beliefs, and actions. Such differences can affect individual's private emotions and actions, but they can also affect emotions and actions at the group level. This distinction is often overlooked when measuring and defining polarization, and our goal is to bring the individual-collective dynamics to the front.

In this perceptive piece, we proposed understanding polarization as a concept that encompasses the interplay between the individual-collective and process-state divides, as well as the dynamics between the elements within those divides. As such, we raise several related questions on three levels: conceptual, methodological (measurement), and experimental (interventions). On a conceptual level, we ask whether polarization is a property of the system or the individual and highlight the need for addressing both dimensions and their interactions to get a detailed picture of the phenomenon. On a methodological level,

we ask how measuring individuals' degrees of polarization translates into collective degrees of polarization, whether polarization is directed at individuals, groups, or institutions, and what are the differences in measuring attitudes towards individuals versus groups. On an experimental level, we examine interventions across the individual-collective spectrum and suggest that cross-level interventions, which address polarization at both the individual and system levels simultaneously, hold the most promise for effectively mitigating polarization.

Looking ahead, the study of polarization is likely to include more interdisciplinary research, integrating insights from several disciplines into a more holistic approach. For instance, investigating how cognitive traits that predispose individuals to polarized beliefs interact with contextual factors that disseminate and reinforce polarized attitudes represents a promising avenue for integration that is currently underway ([van Baar and FeldmanHall 2022](#)). By merging insights from political science and advancements in neuroimaging techniques into these avenues, such endeavors can address persistent measurement challenges and elucidate the role of emotions in driving polarization. Our approach of describing polarization as shaped by different social elements while positioned on the individual-collective divide is another mean to this end from a conceptual perspective.

From a broader perspective, it's worth exploring how polarization is interconnected with various other social phenomena. Viewed through a critical lens, an overemphasis on the analysis of polarization can sometimes overshadow other significant societal phenomena, such as extremism, prejudice, or group bias. While studying polarization sheds light on the division and discrepancies between groups, it may not necessarily reveal the inherent biases within these groups or indicate whether they are becoming more extreme.

Extremism refers to ideologies, beliefs, or activities that deviate markedly from a society's accepted norms or dominant views. Much like polarization, extremism can vary significantly across different societies, cultures, and historical contexts. Key inquiries in the study of extremism may include determining the fundamental factors that cause individuals or collectives to adopt more radicalized stances or identifying effective methods for societies to deter and counteract extremism. Such questions explore facets of social conflict that, while related, are distinct from those addressed by polarization. Even though polarization garners significant academic focus, it should be considered one of the multiple interactive components within a broader system that are all vital to comprehensively understanding the intricate nature of social and political environments.

To conclude, we advocate for an approach that views polarization as a continuous interaction between individuals and collectives, which affects and is affected by both levels, and should be measured and intervened with across these divides. While doing so, we also wish to emphasize that polarization is not the only significant phenomenon to address; understanding how polarization interacts with other social phenomena is equally important. Such an understanding is vital for devising strategies that can mitigate political and social division and promote a more cohesive society. Doing so would enable both researchers and practitioners to better capture the richness of our societies and enable them to develop more effective solutions and policy implications.

Funding & Acknowledgements:

Kati Kish Bar-On was supported in part by the Institute for Humane Studies under Grant no. IHS017865. Yphtach Lelkes is a Fellow at Princeton Center for the Study of Democratic Politics.

References:

- Abramowitz, Alan I., and Steven Webster. 2016. "The Rise of Negative Partisanship and the Nationalization of U.S. Elections in the 21st Century." *Electoral Studies* 41 (March): 12–22. <https://doi.org/10.1016/j.electstud.2015.11.001>.
- Abramowitz, Alan I., and Kyle L. Saunders. 2008. "Is Polarization a Myth?" *The Journal of Politics* 70 (2): 542–55.
- Abrams, D., M. Wetherell, S. Cochrane, M. A. Hogg, and John C. Turner. 1990. "Knowing What to Think by Knowing Who You Are: Self-Categorization and the Nature of Norm Formation, Conformity and Group Polarization." *British Journal of Social Psychology* 29: 97–119.
- Achen, Christopher, and Larry Bartels. 2017. *Democracy for Realists: Why Elections Do Not Produce Responsive Government*. Princeton: Princeton University Press.
- Adams, James, Noam Gidron, and Will Horne. 2020. *American Affective Polarization in Comparative Perspective*. Elements in American Politics. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781108914123>.
- Axelrod, Robert. 1997. "The Dissemination of Culture: A Model with Local Convergence and Global Polarization." *Journal of Conflict Resolution* 41 (2): 203–26. <https://doi.org/10.1177/0022002797041002001>.
- Azzimonti, Marina, and Marcos Fernandes. 2023. "Social Media Networks, Fake News, and Polarization." *European Journal of Political Economy* 76 (January): 102256. <https://doi.org/10.1016/j.ejpoleco.2022.102256>.
- Baar, JM van, and O FeldmanHall. 2022. "The Polarized Mind in Context: Interdisciplinary Approaches to the Psychology of Political Polarization." *Am Psychol* 77 (3): 394–408.
- Bail, Christopher A., Lisa P. Argyle, Taylor W. Brown, John P. Bumpus, Haohan Chen, M. B. Fallin Hunzaker, Jaemin Lee, Marcus Mann, Friedolin Merhout, and Alexander Volfovsky. 2018. "Exposure to Opposing Views on Social Media Can Increase Political Polarization." *Proceedings of the National Academy of Sciences* 115 (37): 9216–21. <https://doi.org/10.1073/pnas.1804840115>.
- Bakker, Bert N., and Yphtach Lelkes. 2024. "Putting the Affect into Affective Polarisation." *Cognition and Emotion*, 1–19. <https://doi.org/10.1080/02699931.2024.2362366>
- Bakker, Bert N., Gijs Schumacher, Claire Gothreau, and Kevin Arceneaux. 2020. "Conservatives and Liberals Have Similar Physiological Responses to Threats." *Nature Human Behaviour* 4 (6): 613–21. <https://doi.org/10.1038/s41562-020-0823-z>.
- Barrera-Lemarchand, F., P. Balenzuela, B. Bahrami, O. Deroy, and J. Navajas. 2023. "The Wisdom of Extremized Crowds: Promoting Erroneous Divergent Opinions Increases Collective Accuracy." *Forthcoming PsyArXiv preprints*. <https://doi.org/10.31234/osf.io/wvfm3>.
- Bicchieri, Cristina. 2016. *Norms in the Wild: How to Diagnose, Measure, and Change Social Norms*. Oxford University Press.

Bougher, L. D. 2017. "The Correlates of Discord: Identity, Issue Alignment, and Political Hostility in Polarized America." *Political Behavior* 39 (3): 731–62.

Boxell, Levi, Matthew Gentzkow, and Jesse M. Shapiro. 2022. "Cross-Country Trends in Affective Polarization." *The Review of Economics and Statistics*, January, 1–60.

https://doi.org/10.1162/rest_a_01160.

Brady, David W., and Hahrie Han. 2007. "A Delayed Return to Historical Norms: Congressional Party Polarization after the Second World War." *British Journal of Political Science* 37 (3): 505–31.

<https://doi.org/10.1017/S0007123407000269>.

Bramson, Aaron, Patrick Grim, Daniel J. Singer, William J. Berger, Graham Sack, Steven Fisher, Carissa Flocken, and Bennett Holman. 2017. "Understanding Polarization: Meaning, Measures, and Model Evaluation." *Philosophy of Science* 84 (1).

Broockman, David E., Joshua L. Kalla, and Sean J. Westwood. 2022. "Does Affective Polarization Undermine Democratic Norms or Accountability? Maybe Not." *American Journal of Political Science*, August. <https://doi.org/10.1111/ajps.12719>.

Bullock, and Lenz. 2019. "Partisan Bias in Surveys." *Annual Review of Political Science (Palo Alto, Calif.)*. <https://johnbullock.org/papers/partisanBiasInSurveys.pdf>.

Callander, Steven, and Juan Carlos Carbajal. 2022. "Cause and Effect in Political Polarization: A Dynamic Analysis." *The Journal of Political Economy* 130 (4): 825–80.

Combs, Aidan, Graham Tierney, Brian Guay, Friedolin Merhout, Christopher A. Bail, D. Sunshine Hillygus, and Alexander Volfovsky. 2023. "Reducing Political Polarization in the United States with a Mobile Chat Platform." *Nature Human Behaviour* 7 (9): 1454–61. <https://doi.org/10.1038/s41562-023-01655-0>

DiMaggio, Paul, John Evans, and Bethany Bryson. 1996. "Have American's Social Attitudes Become More Polarized?" *The American Journal of Sociology* 102 (3): 690–755.

Dimant, E., 2023. Beyond average: A method for measuring the tightness, looseness, and polarization of social norms. *Economics Letters*, 233, p.111417.

Dimant, Eugen. 2024. "Hate Trumps Love: The Impact of Political Polarization on Social Preferences." *Management Science*. <https://doi.org/10.1287/mnsc.2023.4701>

Dimant, E., Gelfand, M.J., Hochleitner, A. and Sonderegger, S., 2024. Strategic behavior with tight, loose, and polarized norms. *Loose, and Polarized Norms. Management Science*.

Druckman, J. N. (2023). Correcting misperceptions of the other political party does not robustly reduce support for undemocratic practices or partisan violence. *Proceedings of the National Academy of Sciences*, 120(37), e2308938120.

Druckman, J.N., Kang, S., Chu, J., N. Stagnaro, M., Voelkel, J.G., Mernyk, J.S., Pink, S.L., Redekopp, C., Rand, D.G. and Willer, R., 2023. Correcting misperceptions of out-partisans decreases American legislators' support for undemocratic practices. *Proceedings of the National Academy of Sciences*, 120(23), p.e2301836120.

Druckman, James N., Samara Klar, Yanna Krupnikov, Matthew Levendusky, and John Barry Ryan. 2024. *Partisan Hostility and American Democracy: Explaining Political Divisions and When They Matter*. University of Chicago Press.

Enders, Adam M. 2021. "Issues versus Affect: How Do Elite and Mass Polarization Compare?" *The Journal of Politics* 83 (4): 1872–77. <https://doi.org/10.1086/715059>.

- Esteban, Joan-María, and Debraj Ray. 1994. "On the Measurement of Polarization." *Econometrica* 62 (4): 819–51. <https://doi.org/10.2307/2951734>.
- Fiorina, Morris P., Samuel A. Abrams, and Jeremy C. Pope. 2008. "Polarization in the American Public: Misconceptions and Misreadings." *The Journal of Politics* 70, no. 2: 556–60. <https://doi.org/10.1017/s002238160808050x>
- Fiorina, Morris P., and Samuel J. Abrams. 2008. "Political Polarization in the {A}merican Public." *Annual Review of Political Science* 11 (1): 563–88.
- Gelfand, Michele. 2018. *Rule Makers, Rule Breakers: How Tight and Loose Cultures Wire Our World*. New York: Scribner.
- Gidron, Noam, James Adams, and Will Horne. 2019. "Toward a Comparative Research Agenda on Affective Polarization in Mass Publics." *APSA Comparative Politics Newsletter* 29: 30–36.
- Goldenberg, Amit. 2023. "Regulating Collective Emotion." In *Handbook of Emotion Regulation*, edited by James J. Gross and B. Q. Ford. Guilford Press.
- Gross, James J. 2015. "Emotion Regulation: Current Status and Future Prospects." *Psychological Inquiry* 26 (1): 1–26. <https://doi.org/10.1080/1047840X.2014.940781>.
- Hale, J, J Hastings, R West, CE Lefevre, A Direito, LC Bohlen, C Godinho, et al. 2020. "An Ontology-Based Modelling System (OBMS) for Representing Behaviour Change Theories Applied to 76 Theories [Version 1; Peer Review: 2 Approved]." *Wellcome Open Research* 5 (177). <https://doi.org/10.12688/wellcomeopenres.16121.1>.
- Harteveld, Eelco, and Markus Wagner. 2023. "Does Affective Polarisation Increase Turnout? Evidence from Germany, The Netherlands and Spain." *West European Politics* 46 (4): 732–59. <https://doi.org/10.1080/01402382.2022.2087395>.
- Hartman, Rachel, Will Blakey, Jake Womick, Christopher A. Bail, Eli Finkel, Hahrie Han, John Sarrouf, et al. 2022. "Interventions to Reduce Partisan Animosity." <https://doi.org/10.31234/osf.io/ha2tf>.
- Hasson, Yossi, Maya Tamir, Kea S. Brahms, J. Christopher Cohrs, and Eran Halperin. 2018. "Are Liberals and Conservatives Equally Motivated to Feel Empathy Toward Others?" *Personality and Social Psychology Bulletin* 44 (10): 1449–59. <https://doi.org/10.1177/0146167218769867>.
- Hegselmann, Rainer, and Ulrich Krause. 2002. "Opinion Dynamics and Bounded Confidence: Models, Analysis and Simulation." *Journal of Artificial Societies and Social Simulation* 5 (3). <https://www.jasss.org/5/3/2.html>.
- Helbling, Marc, and Sebastian Jungkunz. 2020. "Social Divides in the Age of Globalization." *West European Politics* 43 (6): 1187–1210. <https://doi.org/10.1080/01402382.2019.1674578>.
- Henrich, Joseph. 2015. *The Secret of Our Success: How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smarter*. Princeton: Princeton University Press.
- Hochschild, Arlie Russell. 2016. *Strangers in Their Own Land: Anger and Mourning in the American Right*. New York: The New Press.
- Inbar, Yoel, David Pizarro, Ravi Iyer, and Jonathan Haidt. 2012. "Disgust Sensitivity, Political Conservatism, and Voting." *Social Psychological and Personality Science* 3 (5): 537–44. <https://doi.org/10.1177/1948550611429024>.
- Iyengar, Shanto, Yphtach Lelkes, M. S. Levendusky, N. Malhotra, and S. Westwood. 2019. "The Origins and Consequences of Affective Polarization in the United States." *Annual Review of Political Science* 22: 129–46.

Iyengar, Shanto, Gaurav Sood, and Yphtach Lelkes. 2012. "Affect, Not Ideology: A Social Identity Perspective on Polarization." *Public Opinion Quarterly* 76 (3): 405–31.

<https://doi.org/10.1093/pog/nfs038>.

Iyengar, Shanto, and Sean J. Westwood. 2015. "Fear and Loathing across Party Lines: New Evidence on Group Polarization." *American Journal of Political Science* 59 (3): 690–707.

<http://www.jstor.org/stable/24583091>

Khanna, Kabir, and Gaurav Sood. 2018. "Motivated Responding in Studies of Factual Learning." *Political Behavior* 40 (1): 79–101.

Kish Bar-On, Kati, and Ehud Lamm. 2023. "The Interplay of Social Identity and Norm Psychology in the Evolution of Human Groups." *Philosophical Transactions of the Royal Society B: Biological Sciences* 378:20210412.

<https://doi.org/10.1098/rstb.2021.0412>

Klar, Samara, Krupnikov, Yanna and John Barry Ryan. 2018. "Affective Polarization or Partisan Disdain? Untangling a Dislike for the Opposing Party from a Dislike of Partisanship", *Public Opinion Quarterly*, 82 (2): 379–390,

<https://doi.org/10.1093/poq/nfy014>

Klein, Ezra. 2020. *Why We're Polarized*. Avid Reader Press, Simon & Schuster.

Kubin, Emily, and Christian von Sikorski. 2021. "The Role of (Social) Media in Political Polarization: A Systematic Review." *Annals of the International Communication Association* 45 (3): 188–206.

<https://doi.org/10.1080/23808985.2021.1976070>.

Lau, Vienne W., Veronica L. Scott, Meg A. Warren, and Michelle C. Bligh. 2023. "Moving from Problems to Solutions: A Review of Gender Equality Interventions at Work Using an Ecological Systems Approach." *Journal of Organizational Behavior* 44 (2): 399–419.

<https://doi.org/10.1002/job.2654>

Lelkes, Yphtach. 2018. "Affective Polarization and Ideological Sorting: A Reciprocal, Albeit Weak, Relationship," *The Forum*, 16 (1): 67–79.

<https://doi.org/10.1515/for-2018-0005>.

Lelkes Yphtach and Sean J. Westwood. 2017. "The Limits of Partisan Prejudice," *The Journal of Politics* 79:2, 485-501

<https://doi.org/10.1086/688223>

Leonard, Naomi Ehrich, Keena Lipsitz, Anastasia Bizyaeva, Alessio Franci, and Yphtach Lelkes. 2021. "The Nonlinear Feedback Dynamics of Asymmetric Political Polarization." *Proceedings of the National Academy of Sciences of the United States of America* 118 (50).

<https://doi.org/10.1073/pnas.2102149118>

Levendusky, Matthew. 2009. *The Partisan Sort: How Liberals Became Democrats and Conservatives Became Republicans*. University of Chicago Press.

Levendusky, Matthew. 2018. "Americans, not partisans: Can priming American national identity reduce affective polarization?" *The Journal of Politics*, 80(1), 59-70.

Levin, Simon A., Helen V. Milner, and Charles Perrings. 2021. "The Dynamics of Political Polarization." *Proceedings of the National Academy of Sciences of the United States of America* 118 (50).

<https://doi.org/10.1073/pnas.2116950118>.

Lord, Charles, Lee Ross, and Mark Lepper. 1979. "Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence." *Journal of Personality and Social Psychology* 37 (11): 2098–2109.

Maas, Han L J van der, Jonas Dalege, and Lourens Waldorp. 2020. "The Polarization within and across Individuals: The Hierarchical Ising Opinion Model." *Journal of Complex Networks* 8 (2): cnaa010.

<https://doi.org/10.1093/comnet/cnaa010>.

- McCarty, Nolan. 2019. *Polarization: What Everyone Needs to Know*. New York: Oxford University Press.
- McLaughlin, Bryan. 2018. "Commitment to the Team." *Journal of Media Psychology* 30 (1): 41–51. <https://doi.org/10.1027/1864-1105/a000176>.
- Moscovici, S., and M. Zavalloni. 1969. "The Group as a Polarizer of Attitudes." *Journal of Personality and Social Psychology* 12 (2): 125–35.
- Mudde, Cas, and Cristóbal Rovira Kaltwasser. 2018. "Studying Populism in Comparative Perspective." *Comparative Political Studies* 51 (13): 1667–93.
- O'Connor, Cailin, and James Owen Weatherall. 2017. "Scientific Polarization." *European Journal for Philosophy of Science* 8 (3).
- Ortoleva, Pietro, and Erik Snowberg. 2015. "Overconfidence in Political Behavior." *American Economic Review* 105 (2): 504–35. <https://doi.org/10.1257/aer.20130921>.
- Pahl, R. E. 1984. *Divisions of Labour*. Oxford: Blackwell.
- Panizza, F., Dimant, E., Kimbrough, E.O. and Vostroknutov, A., 2023. Measuring Norm Pluralism and Tolerance. Working Paper.
- Panizza, F., Dimant, E., Kimbrough, E.O. and Vostroknutov, A., 2024. Measuring Norm Pluralism and Perceived Polarization in U.S. Politics. Working Paper.
- Permanyer, Iñaki. 2012. "The Conceptualization and Measurement of Social Polarization." *The Journal of Economic Inequality* 10 (1): 45–74. <https://doi.org/10.1007/s10888-010-9143-2>.
- Podgórska-Rykała, J. 2024. *Deliberative Democracy, Public Policy, and Local Government*. Public Administration and Public Policy. Taylor & Francis.
- Prinz, Jesse. 2021. "Emotion and Political Polarization." In *The Politics of Emotional Shockwaves*, edited by Ana Falcató and Sara Graça da Silva, 1–25. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-56021-8_1.
- Renström, Emma A., Hanna Bäck, and Royce Carroll. 2023. "Threats, Emotions, and Affective Polarization." *Political Psychology* 44 (6): 1337–66. <https://doi.org/10.1111/pops.12899>.
- Reynolds, Katherine J., Emina Subašić, and Karen Tindall. 2015. "The Problem of Behaviour Change: From Social Norms to an Ingroup Focus." *Social and Personality Psychology Compass* 9 (1): 45–56. <https://doi.org/10.1111/spc3.12155>
- Rogowski, Jon C., and Joseph L. Sutherland. 2016. "How Ideology Fuels Affective Polarization." *Political Behavior* 38 (2): 485–508. <https://doi.org/10.1007/s11109-015-9323-7>.
- Röllicke, Lena. 2023. "Polarisation, Identity and Affect - Conceptualising Affective Polarisation in Multi-Party Systems." *Electoral Studies* 85 (October): 102655. <https://doi.org/10.1016/j.electstud.2023.102655>.
- Scheve, Christian von. 2017. "Collective Emotions." In *The Wiley-Blackwell Encyclopedia of Social Theory*, 1–3. <https://doi.org/10.1002/9781118430873.est0056>.
- Simchon, A., Brady, W.J. and Van Bavel, J.J., 2022. Troll and divide: the language of online polarization. *PNAS Nexus*, 1(1), p.pgac019.
- Smith, Eliot R, and Diane M Mackie. 2016. "Group-Level Emotions." *Intergroup Relations* 11 (October):15–19. <https://doi.org/10.1016/j.copsyc.2016.04.005>
- Törnberg, Petter. 2022. "How Digital Media Drive Affective Polarization through Partisan Sorting." *Proceedings of the National Academy of Sciences of the United States of America* 119 (42): e2207159119.

Tucker, A. J., A. Guess, P. Barberá, C. Vaccari, A. Siegel, S. Sanovich, D. Stukal, and B. Nyhan. 2018. "Social Media, Political Polarization, and Political Disinformation: A Review of the Scientific Literature." Hewlett Foundation. <https://dx.doi.org/10.2139/ssrn.3144139>.

Turner-Zwinkels, Felicity M., Jochem van Noord, Rebekka Kesberg, Efrain García-Sánchez, Mark J. Brandt, Toon Kuppens, Matthew J. Easterbrook, et al. 2023. "Affective Polarization and Political Belief Systems: The Role of Political Identity and the Content and Structure of Political Beliefs." *Personality and Social Psychology Bulletin*, July, 01461672231183935. <https://doi.org/10.1177/01461672231183935>.

Van Bavel, J.J. and Pereira, A., 2018. The partisan brain: An identity-based model of political belief. *Trends in cognitive sciences*, 22(3), pp.213-224.

Versteegen, Peter Luca. 2024. "We Love, They Hate: Emotions in Affective Polarization and How Partisans May Use Them." *Political Psychology* n/a (n/a). <https://doi.org/10.1111/pops.12955>.

Vignoles, Vivian L., Zahira Jaser, Frankiebo Taylor, and Evangelos Ntontis. 2021. "Harnessing Shared Identities to Mobilize Resilient Responses to the COVID-19 Pandemic." *Political Psychology* 42 (5): 817–26. <https://doi.org/10.1111/pops.12726>

Voelkel, Jan G., James Chu, Michael N. Stagnaro, Joseph S. Mernyk, Chrystal Redekopp, Sophia L. Pink, James N. Druckman, David G. Rand, and Robb Willer. 2023. "Interventions Reducing Affective Polarization Do Not Necessarily Improve Anti-Democratic Attitudes." *Nature Human Behaviour* 7 (1): 55–64. <https://doi.org/10.1038/s41562-022-01466-9>

Voelkel, Jan G., Michael N. Stagnaro, James Chu, Sophia L. Pink, Joseph S. Mernyk, Chrystal Redekopp, Isaias Ghezae, et al. 2024. "Megastudy Identifying Effective Treatments to Strengthen Americans' Democratic Attitudes." *Forthcoming*.

Wagner, Markus. 2024. "Affective Polarization in Europe." *European Political Science Review*, 1–15. <https://doi.org/10.1017/S1755773923000383>.

Wu, James Shyan-Tau, Christoph Hauert, Claire Kremen, and Jiaying Zhao. 2022. "A Framework on Polarization, Cognitive Inflexibility, and Rigid Cognitive Specialization." *Frontiers in Psychology* 13. <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.776891>.

Yang, J. Z., H. Chu, and L. Kahlor. 2019. "Fearful Conservatives, Angry Liberals: Information Processing Related to the 2016 Presidential Election and Climate Change." *Journalism & Mass Communication Quarterly* 96: 742–66.

Zaller, J. 1992. *The Nature and Origins of Mass Opinion*. Cambridge Studies in Political Psychology Series. Cambridge University Press. <https://books.google.com/books?id=83yNzu6toisC>.