1 Mass Polarization in Comparative Politics: Concepts and Challenges

Political polarization has long been a key concept in comparative politics. Scholars have highlighted its connection to a wide range of important political phenomena, such as democracy (Linz, 1978), representation (Bornschier, 2019), party system dynamics (Sartori, 1976), and economic crisis (Hobolt & Tilley, 2016). My focus here is mass polarization – the division of public opinion and political society into tightly knit, highly differentiated groups of partisans or ideological adherents.

Mass polarization affects some of the most critical aspects of political life. It is associated with lower government spending (Lindqvist & Östling, 2010), it can lead to increased support for extreme parties (Ezrow et al., 2014), and it may even contribute to political instability and repression in developing areas (Bratton & van deWalle, 1997). The potential drivers and mitigators of mass polarization are no less consequential. It appears to be exacerbated by economic inequality and disproportionate representation in legislative institutions (Matakos et al., 2016; Pontusson & Rueda, 2008), but may be ameliorated by increasing the descriptive representation of historically underrepresented groups (Adams et al., 2023).

This real-world import has sparked a rapid proliferation of research using a comparative perspective to understand the causes and consequences of mass polarization. Gidron et al.'s (2020) recent effort to characterize mass affective polarization around the world immediately garnered much scholarly interest. Their study of affective polarization across two decades and twenty Western publics showed how it varies across country context and correlates with economic and institutional variables, a line of inquiry they continued to advance in subsequent years (e.g. Adams et al., 2023; Gidron et al., 2023; Horne et al., 2023). Many other scholars have built on this work and offered their own accounts of comparative polarization (see, among many others, Algara & Zur, 2023; Reiljan et al., 2024; Wagner, 2021).

Although this research agenda has advanced empirically grounded explanations of where polarization comes from and how it affects polities, it has also been beset by challenges that constrain the inferences scholars can draw. Appropriate cross-national survey data are scarce, analyses of what little data do exist often fail to marry theory to practice, and measurement in multiparty systems is frequently problematic. Measurement concerns and lack of spatiotemporal variation undermine scholars' ability to answer substantive questions and draw generalizable conclusions.

This Element charts a path to overcome these challenges. I present the Polarization in Comparative Attitudes Project (PolarCAP), which provides a common standard of analysis for researchers by clearly defining and measuring polarization and estimating smooth panels of mass polarization across time and space. I use the resulting data to provide both descriptive and explanatory accounts of mass polarization in comparative politics.

1.1 A Group-Based Conceptualization of Polarization

Measures developed with insufficient attention to the concepts they are designed to tap run the risk of producing misleading evidence. Before I can tackle the problems surrounding the measurement of mass polarization, it is important to be clear about what concept I aim to estimate. Unfortunately, there is no one definition of polarization around which scholars have rallied, and this disagreement on theoretical concept likely contributes to disagreement on when and where polarization is occurring (Hetherington, 2009).

I provide a minimal definition that posits polarization as a property of group relations. Polarization is a phenomenon that happens both between and within groups, emerging when group members disagree with members of other groups and agree with members of their own. Mehlhaff (2024) shows how this understanding of polarization translates into two conceptual features: distance from opponents (intergroup heterogeneity) and concentration within groups (intragroup homogeneity). Theories of polarization frequently reference both features, if only implicitly (DiMaggio et al., 1996; Esteban & Ray, 1994; Fortunato & Stevenson, 2021; McCoy et al., 2018; Traber et al., 2023).

Disagreement or distance between groups – intergroup heterogeneity – is one critical feature of polarization. For instance, as parties' ideal points gradually approach opposite ends of a policy space, that party system becomes more polarized (Sartori, 1976). Compromise becomes exceedingly difficult when partisans' median issue preferences are far apart, not only because partisans are more inclined to dislike their opponents (Iyengar et al., 2012; Reiljan, 2020), but because their preferences are so different that at least one group would view any middle ground as an unacceptable capitulation (Persily, 2015). One consequence of an unwillingness to work together is legislative gridlock and ineffective government (Binder, 1999), which might itself contribute to further resentment and conflict among citizens who identify with different parties or belong to different socioeconomic strata.[1] When parties are farther apart

[1] Sigelman and Yough (1978) discuss the theoretical importance of socioeconomic linkages in political polarization.

ideologically, they are also more likely to contribute to declining comity by airing negative campaign advertisements or coarsening the language with which they discuss politics (Ansolabehere & Iyengar, 1995; Mason, 2018).

Intergroup heterogeneity is often the main conceptual feature with which scholars of polarization engage. However, the degree to which groups are tightly concentrated – intragroup homogeneity – is also important. At a basic level, intragroup homogeneity can make groups more distinct; as the ideal points of party members cluster more tightly together, each party becomes more internally homogeneous, parties share less in common with each other, and the party system becomes more polarized. Crucially, polarization can increase in this manner even in the *absence* of increasing intergroup heterogeneity. Party sorting is one process through which this happens; individuals do not become more extreme but the population nevertheless polarizes due to individuals sorting themselves into parties with positions similar to their own (Levendusky, 2009). Conversely, parties may themselves be internally fractured (Groenendyk et al., 2020). It is important to account for such divisions within parties (low intragroup homogeneity) because they decrease the extent to which parties can act as cohesive units and provide an opportunity for individuals to defect to another party.

Even more important than the mechanical connection between intragroup homogeneity and polarization is the theoretical importance of this feature for understanding group conflict. Individuals tend to accurately perceive increases in the homogeneity of their in-group (Park & Judd, 1990). Greater in-group homogeneity, in turn, strengthens group identity and can lead to greater intergroup conflict, including among networks of political partisans (Huddy, 2001; Parsons, 2015). Similarly, individuals typically overestimate the homogeneity of out-groups, these assessments become even more exaggerated as the out-group becomes more homogeneous (Guinote & Fiske, 2003), and the result is often heightened bias against the out-group (Tajfel, 1982; Wilder, 1978). For example, when partisans misperceive other parties as being mostly comprised of negatively valanced constituent groups, they tend to see those out-partisans as more extreme, view them negatively, and express stronger allegiance to their own party (Ahler & Sood, 2018). In sum, group perceptions shape intergroup relations (Xiao et al., 2016).

The prominent debate on whether polarization exists in the American mass public illustrates the importance of explicitly theorizing and incorporating both features into theories and measures of polarization. In the early twenty-first century, the United States experienced increases in both intergroup heterogeneity and intragroup homogeneity. Indeed, Fiorina (2005) conceded the parties had become farther apart, but dismissed this change as unimportant for polarization

because the increase in distance between party means mostly resulted from party sorting, not increasing extremity.

In their critique of Fiorina (2005), Abramowitz and Saunders (2008) theorized polarization in terms of distance between parties (intergroup heterogeneity). Yet their most compelling evidence of polarization actually revealed increasing intragroup homogeneity. Specifically, they found Republicans were increasingly likely to adopt conservative positions on a wide range of issues, while Democrats were increasingly likely to take liberal positions on those same issues. This increase in what Converse (1964) labeled "issue constraint" reflects changing opinion patterns *within* parties, not between them. With the United States becoming qualitatively more polarized over the past twenty-five years, it is noteworthy that the foundational evidence from this debate better reflects the importance of intragroup homogeneity, even as the dialogue focused on the distance between parties. Incorporating both features allows scholars to paint a more complete portrait of American polarization, depicting both the degree of separation between parties and the degree of similarity within them.

Polarization can manifest in a variety of ways, from the party system (Dalton, 2008), to legislative institutions (Singer, 2016), and even the political geography of citizens' environments (Nall, 2018). I am concerned with ideological and affective polarization in the mass public, the definitions and measures of which follow from the group-based concept I describe previously. An ideologically polarized political society is characterized by two or more distinct groups that cluster tightly around their ideal points and share little in common with each other ideologically. These groups take the form of political parties in this case, but one could also apply this concept to groups defined on the basis of race, income, or other delimiters. Similarly, affective polarization is characterized by citizens grouping together based on their political party or coalition, with these individuals holding similar, highly favorable attitudes toward their own partisan group and similar, highly unfavorable attitudes toward other partisan groups.

1.2 From Concept to Empirics

The most commonly used (and most abundant) sources of data capturing citizens' political ideology and party affect are public opinion surveys. In fact, surveys in different countries and in different time periods use similar items quite often; soliciting self-placement on the left-right scale, for example, has been a mainstay on public opinion surveys for nearly forty years.

I use two types of survey items. To capture political ideology, I use left-right self-placement (Iversen and Soskice, 2015; Jensen & Thomsen, 2013; Lelkes, 2016).[2] Although multi-item batteries of policy positions might be preferable for measuring ideology, constraints on data availability and computational resources make left-right self-placements a practical alternative. These items reflect citizens' positions on a wide variety of issues (Zechmeister & Corral, 2013) and analyses of party manifestos suggest that the unidimensional structure of ideology implicit in left-right self-placement closely approximates party competition in most democracies (McDonald et al., 2007).

To capture party affect, I use partisan feeling thermometers, a popular survey item among scholars studying affective polarization in comparative contexts (Reiljan, 2020; Wagner, 2021; Ward & Tavits, 2019).[3] Gidron et al. (2022) validate feeling thermometers as a measure of party affect. Specifically, they show feeling thermometers capture sentiment toward party supporters and correlate with other measures of affective polarization, such as social distance and discrimination in economic games.

Because left-right self-placement and feeling thermometer items are asked consistently across survey programs and time periods, they offer an intriguing opportunity to investigate mass polarization across space and time. As a first step, I collate data from a wide range of nationally representative public opinion surveys that ask left-right self-placement or party feeling thermometer items. This effort yields approximately 3.5 million individual observations across thirty-five different survey programs. Tables 1 and 2 display the survey programs, how many country-years each contributes, and the range of dates covered by each.

Although this collection likely represents the largest aggregation of such public opinion data to date, its structure makes it difficult to use. Each survey is a snapshot of public opinion at the time the survey was conducted. Simply calculating an estimate of polarization in each country-year would produce observations scattered across time and space, leaving large gaps in the time series and only providing information on some countries at a handful of time points.

The data fragmentation can be seen graphically in Figure 1. It plots each year for which survey data is available in four exemplar countries, to which I return in Section 3: Mexico, South Africa, Spain, and the United States. Open

[2] Some surveys ask about closely related concepts, such as "liberal" and "conservative." I include these types of ideological placements as well.

[3] I exclude items asking about feelings toward political leaders, as these may tap into a different attitude (Reiljan et al., 2024).

Table 1 Survey programs and coverage (political ideology)

Survey Program	Country-Years	Year Range
AmericasBarometer	112	2004–2019
Australian Election Study	7	1987–2016
Parliamentary Election Belarus[4]	2	1995–2002
Canadian Election Study	2	1988–1993
Comparative National Election Project	24	1992–2018
Croatian National Election Study	5	1990–2003
Comparative Study of Electoral Systems	176	1996–2018
Party Preferences Czech Republic	1	2000
Eurobarometer	726	1973–2019
Central and Eastern Eurobarometer[5]	56	1990–2004
European Values Study	59	1981–2019
Hungarian Election Study	1	1994
Icelandic National Election Study	4	1987–2016
Israel National Election Study	9	1981–2016
Latinobarómetro	238	1995–2018
Statistics Norway Election Survey	2	1989–2017
New Zealand Election Study	5	1990–2017
Pew Global Attitudes	19	2002–2018
Election Study Serbia[6]	3	1990–2002
Slovenian Public Opinion Survey	1	1997
Statistics Sweden Election Study	3	1988–1994
Swiss Election Study	8	1971–2019
American National Election Studies	12	1972–2002
General Social Survey	1	2014
World Values Survey	177	1981–2016

circles indicate years for which data on political ideology are available and closed circles indicate years for which data on both ideology and party affect are available.[7]

Some cases, such as Spain, have excellent coverage, with ideological data available for every year beginning in 1985. In other cases, data are sparse.

[4] Includes *Democratic Attitudes in Belarus*.
[5] Includes *Consolidation of Democracy in Central and Eastern Europe and Candidate Countries Eurobarometer*.
[6] Includes *Political and Social Attitudes in Serbia*.
[7] There are no country-years for which only party affect data is available.

Table 2 Survey programs and coverage (party affect)

Survey Program	Country-Years	Year Range
Australian Election Study	2	1993–2016
Canadian Election Study	3	1988–2000
Comparative National Election Project	25	1992–2018
Croatian National Election Study	2	2000–2003
Comparative Study of Electoral Systems	178	1996–2018
Danish Election Study	3	1994–2011
Politbarometer	37	1977–2018
Hungarian Election Study	1	1994
Icelandic National Election Study	5	1987–2017
Israel National Election Study	7	1988–2019
Dutch Parliamentary Election Study	3	1986–2012
Statistics Norway Election Survey	2	1989–2017
New Zealand Election Study	5	1990–2017
Polish National Election Study	1	2000
Current Problems of Slovakia	1	1999
Slovenian Public Opinion Survey	1	1997
Statistics Sweden Election Study	4	1988–2010
Swiss Election Study	2	1975–1995
British Election Study	3	1992–2010
American National Election Studies	14	1978–2016

South Africa has only twelve total years of ideological data available over the half-century under investigation. Party affect data is even less consistent. Indeed, party affect data is never available for all four cases in the same year. Inconsistent data availability has consequences for the types of substantive conclusions one can draw about mass polarization. Rather than a fragmented time series, scholars need country-year *panels* of aggregate opinion, with smooth time series estimates in a large number of countries across a broad swath of time.

In addition, cross-national survey research imposes an additional set of problems: Item wording and response options often differ slightly from year to year or from country to country. Even when they are identical, they may be interpreted differently depending on context (Ariely & Davidov, 2012; Stegmueller, 2011). Different surveys in different years sometimes use a different number of response categories to the same item. Different survey

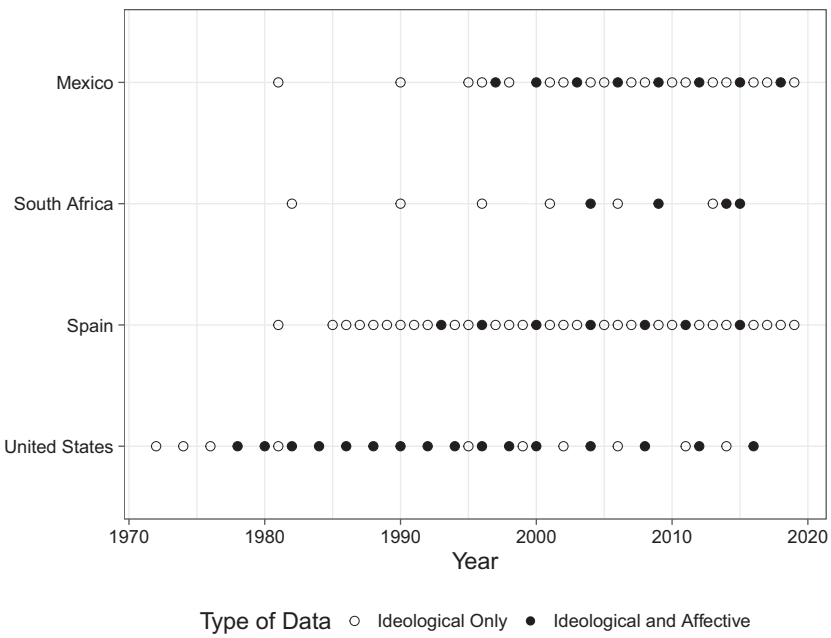

Figure 1 Data sparsity in four exemplar countries

vendors use different sampling procedures. To produce country-year panels of polarization estimates, I must correct for these non-stochastic sources of variation. I construct a model to do so in Section 2.

First, however, I need to describe how I prepare the raw survey responses for analysis. To illustrate these data preparation procedures and how the output of the following measurement model translates raw data into polarization estimates, I use the United States in 2016 – the final presidential election year covered by my data collection – as a running example throughout this section and the next. I choose the United States from among the exemplar countries in Figure 1 because its two-party system facilitates a simpler, more visually straightforward explanation, but the same intuition applies to all cases.

First, following Boxell et al. (2024), I apply an affine transformation to each survey's responses to ensure they all have support on the same interval – $[0, 10]$ for ideology and $[0, 100]$ for party affect.[8] Second, I calculate the

[8] This requires me to assume cardinality in the response options, an assumption routinely employed by scholars calculating statistics such as mean or standard deviation from these types of data. I can partially relax this assumption later by constructing a latent variable model that operates on categories instead of values.

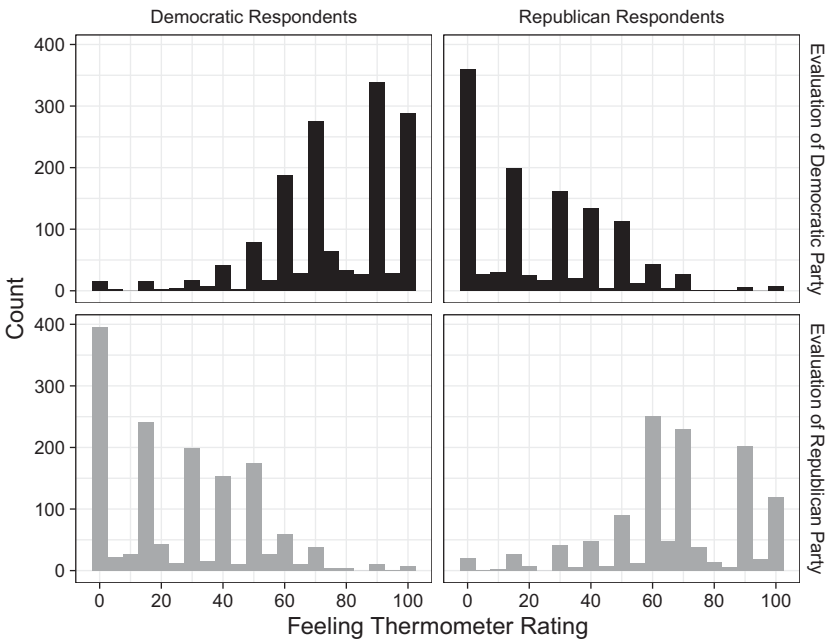

Figure 2 US running example: Weighted feeling thermometer response counts, disaggregated by party and target of evaluation

number of respondents offering each response option, weighted to be nationally representative using weights provided by the survey program.[9]

Figure 2 displays histograms of these weighted response counts for the feeling thermometer item in the United States, broken down by both the respondents' party and the party they are evaluating.[10] The upper-left facet therefore shows Democrats' evaluations of the Democratic Party while the lower-left facet shows their evaluations of the Republican Party. The facets on the right show analogous responses for Republicans. These data reflect what one might expect from Americans' feelings toward the parties: Democrats feel warmly toward the Democratic Party and coldly toward the Republican Party, indicated by the left- and right-skewed distributions in the upper- and lower-left facets, respectively. The opposite is true for Republicans.

Unlike many other scholars measuring affective polarization (e.g. Adams et al., 2023; Gidron et al., 2023; Reiljan et al., 2024), however, I am not interested in these dyadic assessments, where party members evaluate each party in

[9] The unweighted distribution appears nearly identical to the weighted distribution in this case, so I do not show it here.

[10] I focus on only Democratic and Republican respondents to simplify the visualization, but the final data contains all respondents regardless of party identification.