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The quantity and quality of affective polarization in comparative perspective
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Abstract:	Existent conceptualizations and measurement instruments of affective polarization in comparative perspective fundamentally conceive it as the distance between in-group and out-group affect. By doing so, research typically measures the "quantity" of affective polarization. This paper argues that another important property of affective polarization relates to its "quality", i.e., the extent to which affective polarization stems predominantly from in-party affect or out-party dislike. We first discuss the rationale underlying the quality of affective polarization. Second, we provide a measurement strategy for the quality of affective polarization in multi-party systems and apply it in a large-N analysis of post-electoral survey data from the Comparative Study of Electoral Systems (CSES), featuring 161 elections from 46 polities between 1996-2021. Third, we describe and compare the quality of affective polarization across countries. Finally, we explore the macro-level correlates of both the quality and quantity of affective polarization by means of multivariate regression analysis.
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While polarization has been for long understood as the policy-based or ideological distances between political parties along the political spectrum (Dalton 2008; 2011; Sartori 1976), recent research has shed light into a new type of polarization grounded on affect stemming from partisan or group identities (Iyengar et al. 2012; 2019). Seminal studies describing patterns of affective polarization in the United States, have subsequently moved to examining its causes (Levendusky 2009; Mason 2018), and both its political (Druckman et al. 2021; McCoy et al. 2018; Somer and McCoy 2018) and non-political consequences (Lelkes 2016; McConnell et al. 2018). Comparative studies have been instrumental in putting the American case – often perceived as an extreme example of affective polarization – into perspective (Gidron et al. 2020; Harteveld 2021; Reiljan 2020; Wagner 2021). While this research has shown that affective polarization has grown unparalleled in the United States (Boxell et al. 2022; Garzia et al. 2023), it also demonstrated that contemporary "affective polarization in the United States is not unduly intense compared with other Western publics" (Gidron et al. 2020, 7).

The comparative literature tends to operationalize affective polarization as the absolute distance between levels of in-group and out-group affect, using party feeling thermometer scores. This study argues that these comparative approaches capture solely the *quantity* of affective polarization and that often an equally relevant property lies with the *quality* of affective polarization, that is, the extent to which it stems predominantly from in-party affect or out-party dislike.

By exclusively capturing the length of affective distances between in- and out-parties (i.e., the *quantity* of affective polarization), extant measures remain oblivious to nature of the affect underlying such distance (i.e., its *quality*). While polarization levels may be high/low, the extent to which such polarization is characterized by a disproportionate degree of affect /disaffect may entail distinct socio-political implications. In this paper, we bring forward the rationale and a possible operationalization strategy for the quality of affective polarization in

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multi-party systems and contrast it with pre-existent measures of affective polarization using data from the Comparative Study of Electoral Systems, featuring 161 elections in 46 democracies between 1996-2021.

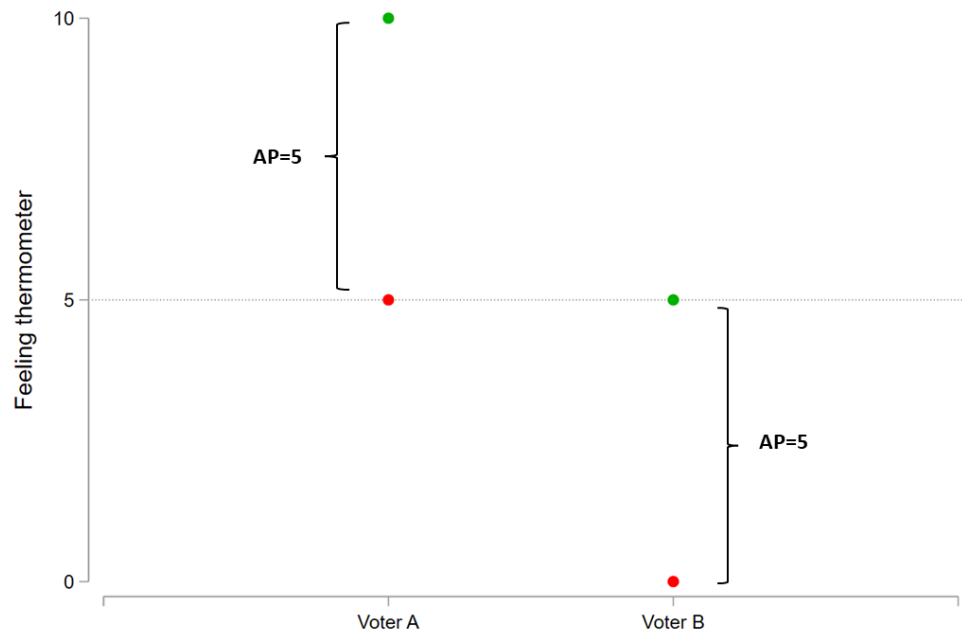**Measuring affective polarization through feeling thermometers**

In their foundational article, Iyengar, Sood and Lelkes (2012) advance an operationalization strategy combining social distance measures and feeling thermometer scores of political objects. In the literature that followed, while social distance items have been mainly used to study the social manifestations of affective polarization, feeling thermometers have served as the primary instrument to capture the political dimension of affective polarization in mass publics (Gidron et al. 2020; Iyengar et al. 2019; Mason 2018). Using these thermometers, "affective polarization is then computed as the difference between the score given to the party of the respondent and the score given to the opposing party, which we also refer to as the out party (Iyengar et al. 2019, 131)".

Comparativists have aimed at staying true to this approach, their fundamental innovation residing on the ability to incorporate multiple out-party evaluations into the out-group component (Reiljan 2020; Wagner 2021). Regardless of their more specific operationalization strategies, these measures invariably also aim at tapping on the distance between absolute levels of in-group affect and out-group affect. But what forces are driving this gap between in- and out-party affect? Is AP mostly driven by stronger affect toward the in-party affect or is it disproportionately driven by out-group disdain?

Consider the following example at the individual level: two fictitious individuals who rate one in-party and one out-party on a 0-10 feeling thermometer scale (see Figure 1). Voter A assigns a score of 10 to their in-party and 5 to the out-party; Voter B assigns a score of 5 to

their in-party and 0 to the out-party. By the token of the previously discussed *quantity* measures, both these voters are identical in their affective polarization, for it is calculated as the distance between in-group and out-group affect. Yet, we argue, their polarity differs fundamentally, insofar as the former is positively driven while the latter is negatively driven. Voter A is characterized by strong affect toward their in-party and relative indifference towards the out-party; instead, Voter B is characterized by mild in-party feelings and strong out-party disdain.

Figure 1. Quantity of affective polarization: an example

Motivated by the realization that affective polarization in the United States is primarily driven by increasing out-party contempt, as in-party affect remains relatively unchanged throughout time (Iyengar et al. 2012; Abramowitz and Webster 2018; Finkel et al. 2020), scholars have begun developing strategies to capture the relative weight of in-party and out-party affect. This has been more systematically attempted by Finkel and colleagues, through their measures of "in-party love" and "out-party hate". These measures estimate the strength of in- and out-party affect not in absolute terms, but as relative distances to the neutral point on the feeling

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thermometer scale. In this paper, we propose to develop a measure that captures these variations to understand the relative importance of in- and out-party feelings in shaping polarization in multi-party contexts.

Data, operationalization and descriptive analysis

To contrast levels of *quantity* and *quality* of affective polarization across polities, we rely on data from the Comparative Study of Electoral Systems Integrated Module Dataset (covering the years 1996-2016) and CSES Module 5 (2016-2021). We have restricted our analysis to polities scoring below 3 on the Freedom House's rating of freedom, i.e., those systems classified as "Free". Our final sample includes a total of 161 elections from 46 democracies. The full list of countries, elections, and parties included in the analysis is available in Table A1 of the Supplementary Materials.

The CSES surveys include a 0–10 feeling thermometer asking respondents to rate the parties in their country, where zero denotes maximum dislike and 10 denotes maximum liking. These are used to compute our measures of quantity and quality of affective polarization. Because we are primarily interested in describing patterns across countries, our unit of analysis situates at the election-level.[1]

To measure quantity, we use Wagner's (2021) *mean distance from the most liked party* measure. This measure calculates the mean difference between the thermometer score given to the most liked party and each other party competing in a given party system. It correlates at a very high level with all other comparative measures of affective polarization proposed by

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[1] However, much like quantity, the quality of affective polarization can also be measured at the individual-level.

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Wagner (correlation with *weighted mean distance from the most liked party*=0.90; *spread of scores*=0.91; *weighted spread of scores*=0.90), and also at a good level with Reiljan's (2020) Affective Polarization Index (0.42). The resulting measure ranges from 0: Minimum distance/polarization (all parties receive the same score on the feeling thermometer by all survey respondents) and 10: Maximum distance/polarization (the most liked party is rated with a 10 and all other parties with a 0 by all survey respondents) – these scores are then averaged at the election-level.

Our measure of quality is largely based on a transformation of Finkel and colleagues' (2020) measures of in-party love and out-party hate (see above). The general intuition underlying our measure of the quality of affective polarization is, therefore, not original; we propose to tailor this composite measure to multi-party systems and explore it in comparative perspective. These measures are calculated by, in a first step, positioning in-party and out-party affect with reference to the neutral point of the feeling thermometer scale (5). We first calculate the strength of "in-party love" relative to the neutral point of the feeling thermometer (most liked party's thermometer score – 5) and the strength of "out-party hate" (5 – mean thermometer score of all other parties).

Figure 2 shows the country averages of in-party love and out-party hate stemming from our empirical analysis, which unveils a significant degree of variance across countries. For example, while in the Netherlands in-party love (2.96) is markedly higher than out-party hate (.27) in relative terms, in Greece out-party hate (2.51) prevails over in-party love (2.05).[2]

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[2] As these measures are but a simple transformation of in-/out-party affect centered on the mid-point of the feeling thermometer, this contrast naturally stems from the different patterns of mean in-party (NL: 7.96; GR: 7.05) and out-party (NL: 4.73; GR: 2.49) like on both countries.

Figure 2. In-party love and out-party hate: country averages
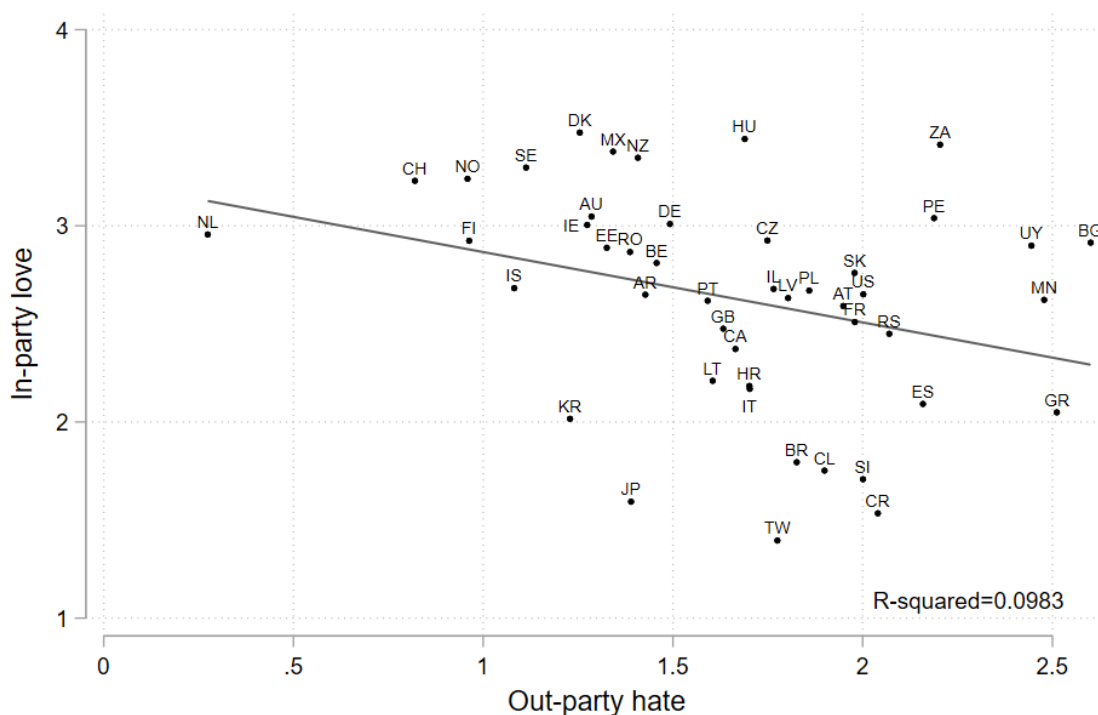
In a second step, to achieve our measure of quality, we simply calculate the differential between in-party love and out-party hate. Ranging from -10 to +10, above-zero values on this variable reflect greater in-group love than out-group hate, while below-zero values reflect greater out-group hate than in-group love.

The distribution of our measure of quality of affective polarization reveals considerable variance across countries, ranging from negative values on a handful of countries, to values above two in European pluralistic democracies and Scandinavian countries (Figure 3). However, the country averages that we have used to simplify data presentation sometimes mask significant variance occurring *within* countries over the different elections featured in CSES. To illustrate the changing distribution of quality across time in the different countries, we have

computed another average taking only the elections held after 2010.[3] Focusing on the elections occurred after 2010, we observe meaningful improvements of quality in the Netherlands, Switzerland, Germany, Canada, Peru and Uruguay, but the prevailing pattern is of degradation of the quality of affective polarization in most countries. This is most evident in countries like Bulgaria and Brazil, which have moved to negative values, but the deterioration of quality is also particularly high in Chile, Poland, Romania, Greece, and Slovenia.

Figure 3. The quality of affective polarization: country averages since 2010 and for the entire sample
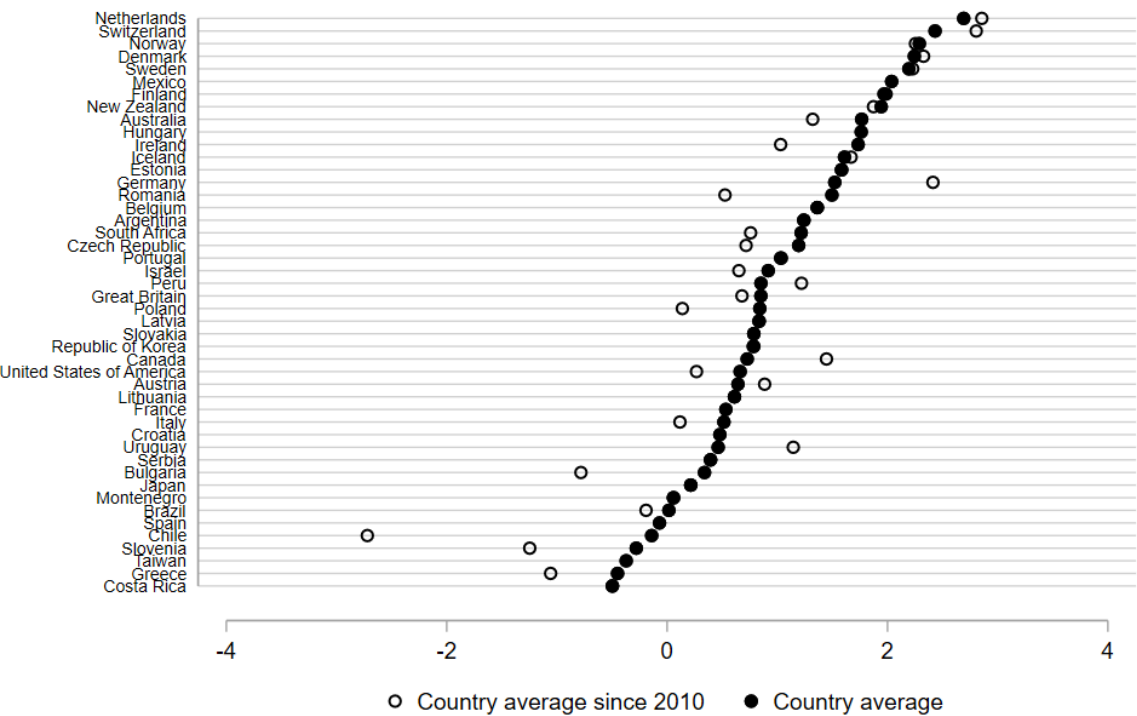
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The macro-level correlates of quality and quantity

The Pearson correlation between election-level measures of quantity and quality indicates a strong independence between both variables (.11, see Figure A1 in the Supplementary Materials; see Table A2 for correlation with other measures of quantity). Still, we put the suggestion that these are independent constructs to a stronger empirical test by modelling the macro-level correlates of quantity and quality of affective polarization, and investigating to what extent they overlap. To be clear, our models have purely descriptive purposes, as it is not our intention to provide explanatory models of quantity and quality but vouching for the independence of these two proposed dimensions while providing a descriptive account of their macro-level correlates.

The definition of our modelling strategy follows standard macro-level analyses of affective polarization in comparative perspective (Gidron et al. 2020; Reiljan 2020; Reiljan et al. 2023), conflating elements pertaining to regime input (party identification and ideological polarization), regime output (government effectiveness), and institutions (presidentialism and effective number of electoral parties).

The models account for aggregate-levels of partisanship through a CSES survey item that asks the respondents whether they are close to one political party, as compared to others. The questionnaire also includes a follow-up question to identify partisan "leaners" (Petrocik 2009; Reiljan 2020). We count as partisans only those who answered affirmatively already to the first PID question, thus excluding the leaners. This provides us with a more stringent measure of partisanship and avoids dropping a number of cases where the follow-up question was not asked in the survey. We expect, in line with previous research, that high levels of partisanship relate to higher levels of quantity. Similarly, partisanship should correlate positively with quality since higher in-party affect is conducive to higher levels of quality.

The models also include a measure of perceived ideological polarization, using the party polarization index developed by Dalton (2008). The index ranges from 0 (minimum polarization) to 10 (maximum polarization). According to substantial evidence pointing to a relationship between ideological and affective polarization (Gidron et al. 2020; Rogowski and Sutherland 2016), we expect a positive relationship to emerge, at least in relation to quantity.

The quality of the regime output can also affect levels of affective polarization. For example, Gidron, Adams and Horne (2020), relate better economic performance to lower levels of affective polarization. Similarly, other studies have demonstrated that lower government performance can have spillover perceptions to the whole regime, in the form of lower satisfaction and trust (Dahlberg and Holmberg 2014). Therefore, to capture regime political output, we use the Government Effectiveness indicator from the World Bank's Worldwide Governance Indicators (WGI) dataset. The Government Effectiveness indicator "reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies". This index is a very broad measure for an entire government's performance, and is thus well suited for the broad, cross-national nature of this study. The index originally ranges from -2.5 (weakest performance) to 2.5.

To account for differences in institutional settings we have distinguished between Presidential [France (2007), Mexico (2012), Peru (2011, 2016), Taiwan (1996), Turkey (2018), USA (2008, 2012, 2016), Uruguay (2009)] and non-Presidential systems, while to capture party system fragmentation we rely on the Effective Number of Electoral Parties (ENEP), as included in CSES.

Finally, we control for the year of election (centered on the date of the first election: 1996) to account for the possibility of change over time.

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We examine the relationship between predictors and the quantity and quality of affective polarization in turn using OLS regressions. The unit of analysis situates at the election-level. The number of elections included from different countries varies from one to seven. This allows us to capture some trends over time. However, while aggregate-levels of partisanship and the Dalton polarization index show comparable levels of within- and between-country variance, most of the variance regarding the remaining independent variables is found between countries, rather than within countries (see Table A3 in Appendix). Thus, it seems that some of the observational relationships we detect are partly driven by cross-national rather than within-country variations. Moreover, due to the existence of multiple elections within the same country in our sample, we cannot assume independence between observations; therefore, we cluster-robust standard errors at the country-level. We also replicate the analysis using country average scores (one country=one case), and, further, restrict the sample to countries featuring more than one election, running the models with only the two most recent elections to eliminate the problem of uneven country samples (see Tables A4 and A5).

The results support the idea that the quantity and quality of affective polarization are independent constructs that relate differently with a number of regime output, regime input and institutional characteristics. The positive relationship between aggregate rates of party identification and the quantity of affective polarization is congruent with previous empirical evidence. Since party attachments are an important element for the development of in-party affect, and higher levels of the latter are a necessary condition for high levels of quality, a positive correlation was also anticipated regarding quality.

Table 1. The macro-level correlates of quantity and quality of affective polarization

	Quantity	Quality
Party Identification	0.31**	0.24**
	(0.49)	(0.66)
Dalton Polarization Index	0.15*	0.03
	(0.04)	(0.07)
Government effectiveness	-0.34**	0.40***
	(0.12)	(0.16)
Presidential System	-0.22	-0.04
	(0.24)	(0.31)
ENEP	-0.16*	0.10
	(0.03)	(0.05)
Year	0.03	-0.18**
	(0.01)	(0.01)
Constant	4.34***	-0.17
	(0.38)	(0.57)
Observations	161	161
Countries	46	46
R-squared	0.25	0.29

Beta regression coefficients. Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Our results also corroborate the findings of previous analyses relating ideological polarization and (the quantity of) affective polarization. As parties' ideological positions diverge, citizens evaluative judgements of parties diverge further as well (Rogowski and Sutherland 2016). However, if the intensity of change in affective opinions is similar for in- and out-parties, i.e., if the affective penalty for out-parties is equal in magnitude to the affective bonus for in-parties, as the literature seems to suggest, this would carry no consequences in terms of our quality measure because the changes of both components would cancel-out. This could account for the absence of a relationship in our models.

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The levels of government effectiveness have an inverse relationship with the two constructs. Higher government effectiveness is negatively correlated with the quantity of affective polarization, in line with the indications from previous studies. In the sense that higher government effectiveness arguably conduces to more satisfaction with the political supply, it is also more likely to improve (though differentially) perceptions of in- and out-parties, therefore contributing to a higher quality of affective polarization, as confirmed through our results. For a one-unit increase in the 5-point government effectiveness index, the quality of affective polarization is estimated to increase .4 points, on average.

The negative relationship between more party system fragmentation and affective polarization is only present in the model for quantity. We know from previous research that more populated party systems tend to exhibit lower levels of affective polarization (Gidron et al. 2020; Reiljan 2020). The need to form coalitions in more consensual systems tends to reduce inter-party hostility in the public by enhancing out-party evaluations (Horne et al. 2023). Yet, as argued regarding the effect of ideological polarization, if the mechanism accounting for the improvement of out-party evaluations is compensated by a similar moderation of in-party affect (a proposition not tested in that study), their effects would balance even – this could help to explain our null findings.

Finally, in line with previous longitudinal studies (Boxell et al. 2022; Garzia et al. 2023), we do not detect significant changes over time regarding levels of quantity. However, as anticipated in Figure 3, there is indeed a sizeable change towards a decline in the quality of affective polarization over time. The model estimates an average 1.8 decrease in the quality of affective polarization for every decade since 1996, or 4.5 over the 25 years of elections covered. Altogether, more than a tendency towards increased affective polarization – understood as quantity –, there seems to emerge a clearer pattern towards a generalized decline in the quality of affective polarization in contemporary democracies.

Discussion and conclusions

This paper proposed to reconceptualize affective polarization not only as the sheer difference between in- and out-party affect but, in parallel, taking into consideration the relative strength of each of these components in citizens' affective considerations. The results show meaningful variance in levels of quality across the countries analyzed, as well as evidence of a strong independence between the two constructs. They further reveal that, unlike quantity, the quality of affective polarization has been generally deteriorating in contemporary democracies. We believe that this novel perspective can represent a useful framework to empirically study affective polarization in comparative perspective.

While polarization is generally perceived as detrimental to democratic functioning, scholars have highlighted that a certain degree of polarization can be instrumental or even beneficial to political systems. For example, a sharper differentiation between political alternatives can provide clearer heuristics for voters to infer their political choices. Beyond the hallmark example of the American Political Science Association Report from 1950 – expressing concerns that American political parties did not sufficiently distinguish between themselves –, the necessity to ensure heterogeneous, pluralistic worldviews that reflect the diversity of political preferences, avoiding a predominance of consensus-oriented politics, has been frequently stressed by critical democratic theorists (Mouffe 2000; 2005; Stavrakakis 2018). In that sense, a given degree of polarization may be instrumental to provide citizens with clearer choices on the different political competitors (McCoy and Somer 2018).

The findings from our paper speak to this debate, by showing that high levels of affective polarization, purely understood as quantity, do not necessarily reflect a public opinion fundamentally driven by animosity towards political opponents. Instead, high polarization can be the product of strong in-party preferences that can, nonetheless, coexist with relatively neutral stances toward out-parties. At the same, the finding that the quality of affective

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polarization has decreased in most Western democracies, suggests that the nature of affective polarization has become more negatively-driven in recent decades.

This study represents, in our view, a point of departure for a broad research agenda with an emphasis on both the quantity and quality of affective polarization, their reciprocal interrelationships at both the individual and the aggregate level, and their likely differing effects on political parties, voters, elections, and democracy in comparative perspective.

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Supplementary Materials

Table A1. List of countries and elections included

Country	Election year	Country	Election year
Argentina	2015	Germany	1998
Australia	1996	Germany	2002
Australia	2004	Germany	2002
Australia	2007	Germany	2005
Australia	2013	Germany	2009
Australia	2019	Germany	2013
Austria	2008	Germany	2017
Austria	2013	Great Britain	1997
Austria	2017	Great Britain	2005
Belgium	2019	Great Britain	2015
Belgium	2019	Great Britain	2017
Brazil	2002	Greece	2009
Brazil	2006	Greece	2012
Brazil	2010	Greece	2015
Brazil	2014	Hungary	1998
Brazil	2018	Hungary	2002
Bulgaria	2001	Iceland	1999
Bulgaria	2014	Iceland	2003
Canada	1997	Iceland	2007
Canada	2004	Iceland	2009
Canada	2008	Iceland	2013
Canada	2011	Iceland	2016
Canada	2015	Iceland	2017
Canada	2019	Ireland	2002
Chile	2005	Ireland	2007
Chile	2009	Ireland	2011
Chile	2017	Ireland	2016
Costa Rica	2018	Israel	1996
Croatia	2007	Israel	2003
Czech Republic	1996	Israel	2006
Czech Republic	2002	Israel	2013
Czech Republic	2006	Israel	2020
Czech Republic	2010	Italy	2006
Czech Republic	2013	Italy	2018
Denmark	1998	Japan	2017
Denmark	2001	Latvia	2010
Denmark	2007	Latvia	2011
Denmark	2019	Latvia	2014
Estonia	2011	Lithuania	2016
Finland	2003	Mexico	2000
Finland	2007	Mexico	2003
Finland	2011	Mexico	2006
Finland	2015	Mexico	2009
Finland	2019	Montenegro	2012
France	2002	Netherlands	1998
France	2007	Netherlands	2002

Netherlands	2006	South Africa	2014
Netherlands	2010	Spain	1996
Netherlands	2017	Spain	2004
New Zealand	1996	Spain	2008
New Zealand	2002	Sweden	1998
New Zealand	2008	Sweden	2002
New Zealand	2011	Sweden	2006
New Zealand	2014	Sweden	2014
New Zealand	2017	Sweden	2018
New Zealand	2020	Switzerland	1999
Norway	1997	Switzerland	2003
Norway	2001	Switzerland	2007
Norway	2005	Switzerland	2011
Norway	2009	Taiwan	2008
Norway	2013	United States of America	2004
Norway	2017	United States of America	2008
Peru	2001	United States of America	2012
Peru	2006	United States of America	2016
Peru	2011	United States of America	2020
Peru	2016	Uruguay	2009
Poland	1997	Uruguay	2019
Poland	2001		
Poland	2005		
Poland	2007		
Poland	2011		
Portugal	2002		
Portugal	2005		
Portugal	2009		
Portugal	2015		
Portugal	2019		
Republic of Korea	2000		
Republic of Korea	2004		
Republic of Korea	2008		
Republic of Korea	2012		
Republic of Korea	2016		
Romania	1996		
Romania	2004		
Romania	2009		
Romania	2012		
Serbia	2012		
Slovakia	2010		
Slovakia	2016		
Slovakia	2020		
Slovenia	1996		
Slovenia	2004		
Slovenia	2008		
Slovenia	2011		

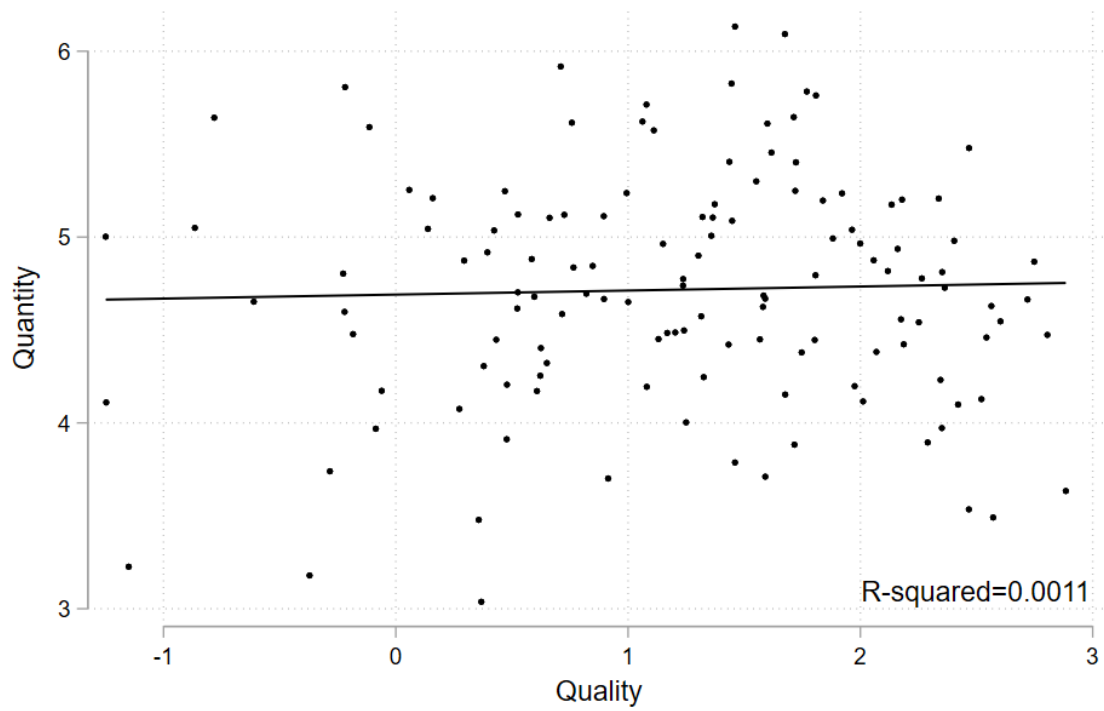**Figure A1**. Quantity and quality of affective polarization

Table A2. Correlation between quality and multiple measures of quantity

	Quality
Distance from most liked party (unweighted)	0.11
Distance from most liked party (weighted)	0.11
Spread of scores (unweighted)	0.30
Spread of scores (weighted)	0.23
Affective Polarization Index (Reiljan, 2020)	-0.31

Table A3. Intraclass correlation analysis

Variable	Quantity	Quality	PID (0-1)	DPI (0-10)	Gov. effectiveness	Eff. N of parties
Within country variance	0.16	0.47	0.010	0.74	0.025	1.49
Between country variance	0.28	0.51	0.012	0.62	0.48	2.77
Intraclass correlation	0.64	0.52	0.56	0.46	0.95	0.65

Table A4. The macro-level correlates of quantity and quality of affective polarization with country average values (OLS regression)

	Quantity	Quality
Party Identification	0.48***	0.24
	(0.67)	(0.94)
Dalton Polarization Index	0.26**	0.11
	(0.07)	(0.10)
Government effectiveness	-0.47***	0.38**
	(0.12)	(0.17)
Presidential System	-0.25*	-0.07
	(0.22)	(0.30)
ENEP	-0.04	0.15
	(0.04)	(0.06)
Year	-0.06	-0.25*
	(0.02)	(0.03)
Constant	3.96***	0.10
	(0.49)	(0.69)
N of countries	46	46
R-squared	0.40	0.37

Notes: Beta regression coefficients. Standard errors in parentheses. 1 country=1 case.
*** p<0.01, ** p<0.05, * p<0.1

Table A5. The macro-level correlates of quantity and quality of affective polarization with a sample restricted to two latest elections per country

	Quantity	Quality
Party Identification	0.43***	0.24*
	(0.54)	(0.98)
Dalton Polarization Index	0.13	-0.08
	(0.07)	(0.09)
Government effectiveness	-0.33**	0.46***
	(0.14)	(0.20)
Presidential System	-0.25	-0.06
	(0.27)	(0.43)
ENEP	-0.05	0.11
	(0.03)	(0.06)
Year	-0.00	-0.15
	(0.02)	(0.03)
Constant	4.06***	0.14
	(0.47)	(0.69)
N of countries	46	46
N of elections	83	83
R-squared	0.27	0.28

Notes: The 9 countries that were represented in the original sample with just 1 election are excluded from these models. Beta regression coefficients. Cluster-corrected robust standard errors in parentheses (Cluster=Country). *** $p<0.01$, ** $p<0.05$, * $p<0.1$