Deliberative Distortions?  Homogenization, Polarization, and Domination

in Small Group Discussions*

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**Abstract**

Deliberation is widely believed to enhance democracy by helping to refine the "public will," moving its participants' policy attitudes closer to their "full-consideration" policy attitudes—those they would hypothetically hold with unlimited information, to which they gave unlimited reflection. Yet there have also been claims that the social dynamics involved generally "homogenize" attitudes (decreasing their variance), "polarize" them (moving their means closer to the nearer extreme), or engender "domination" (moving their overall means toward those of the attitudes held by the socially advantaged). These are attitude changes that may often be *away* from the participants' full-consideration attitudes—and may thus distort rather than refine the public will. This paper uses 2,601 group-issue pairs in 21 Deliberative Polls to examine these claims. Reassuringly, the results show no routine or strong homogenization, polarization, or domination. What little pattern there is suggests some faint homogenization, but also some faint *moderation* (as opposed to polarization) and *opposition* (as opposed to domination)—as, we argue, is to be expected when the outside-world forces shaping pre-deliberation attitudes are slightly more centrifugal than centripetal. We take pains to lay out a theoretical basis for these interpretations and to probe our results, highlighting, among other things, deliberation's role in undoing outside-world effects on pre-deliberation attitudes and the observed homogenization's, polarization's, and domination's dependence on deliberative design.

Deliberation, in the sense of elevated discussion (roughly, an open-minded weighing of the arguments and evidence for and against competing alternatives), is generally seen as enhancing democracy (Fishkin 1991, Bohman and Rehg 1997, Elster 1998, Dryzek 2002)—perhaps most centrally, by refining the "public will" that democracy translates into policy choices. The participants acquire a better sense of what policies they *should* favor, in light of their own values and interests, moving their policy attitudes toward those they would hold with the benefit of unlimited information and thought.[1] This effect stems from deliberation's defining properties, those making it more than just any discussion.

But discussions also have non-deliberative effects, products of their social dynamics. These may plausibly lead a deliberating group's participants to: (1) converge on the same attitude (what we shall term *homogenization*), (2) adopt more extreme attitudes on whichever side of the issue the group started on (commonly termed *polarization*), or (3) adopt attitudes closer to those of their more socially advantaged (male, better-educated, more affluent) co-deliberators (to be termed, more hesitantly, *domination*). These are all varieties of group-level attitude change— as distinct from their sources and consequences, a point particularly worth stressing for "domination," which in other, nearby usage (e.g., Squires 2008) denotes underlying dialogic inequalities. Here it simply means attitude change toward the attitudes of the advantaged.

A widely held, if not always fully articulated concern about these particular attitude changes is that they may be mostly *away* from the attitudes the participants would hold with the benefit of unlimited information and thought.[2] They are, in that case, our title's "distortions." Discussions routinely producing them would be warping rather than refining the public will. But, as the title's punctuation suggests, this leaves some questions. To what extent do these putative distortions actually prevail? And to what extent is it the deliberation in the discussion

that produces them—to what extent are they *deliberative* distortions?

Here we tackle these questions with data from 21 Deliberative Polls (DPs), on various issues, in various contexts, encompassing 2,601 group-issue pairs. The core empirical analysis addresses the first question directly and affords inferences addressing the second. For these purposes, size (the dataset's) matters. Any one group, discussing any one issue, in any one context, may or may not exhibit homogenization, polarization, or domination, no matter what the discussion is like. It is the distributions across groups, issues, and contexts that are revealing. We preface this analysis by laying out the underlying concepts and theory, and follow it by considering nuances, possible objections, and implications for deliberative design.

## The Conceptual Terrain

To be maximally clear, let us first sketch some key concepts.

### Deliberation, Policy Attitudes, and Associated Cognition

*Deliberation*. What lifts *deliberation* above mere discussion is its being (1) substantive, (2) inclusive, (3) responsive, and (4) open-minded. That is: (1) the participants exchange relevant arguments and information. (2) The arguments and information are wide-ranging in nature and policy implications—not all of one kind, not all on one side. (3) The participants react to each other's arguments and information. And (4) they seriously and even-handedly (re)consider, in light of the discussion, what their policy attitudes should be. In short, deliberation requires that its participants engage in a serious, open-minded, even-handed weighing-of-the-merits.[3] It does *not* require consensus-seeking or conscious, collective decision-making (cf. Gutmann and Thompson, 1996, 2004, Cohen 1997). It may or may not arrive at a consensus. It may but need not affect subsequent decision-making by other bodies (as many Deliberative Polls have done). It may even—optionally—involve conscious, collective decision-making, although that may

alter the discussion's effects, in ways we consider below.

Realistically, "deliberation" is not a discrete property—something that does or does not occur—but the high end of a continuum (Fishkin 1991). Some discussions are highly deliberative, others hardly at all. The unattainable top of the range is something like Habermas's (1990) "ideal speech situation": a thought experiment in which every argument is made and countered, and in which everyone weighs all the arguments and counter-arguments, free of all coercion. The bottom is vacuity: nobody says anything of substance. In these terms, the great majority of naturally occurring discussions fall much nearer the continuum's bottom than its top. By and large, there is little focus on seriously weighing the merits, and the participants have little knowledge to share (Luskin 1987, Bennett et al. 2000, Kinder and Kalmoe 2018), are demographically similar and attitudinally like-minded (Bennett et al. 2000, McPherson, Smith-Lovin, and Cook 2001, Butters and Hare 2020), circumnavigate whatever few areas of disagreement exist (Bennett et al. 2000, Gerber et al. 2102, Cowan and Baldassarri 2018), and discount whatever little counter-attitudinal information may nevertheless poke through (Lodge and Taber 2013). This is a far cry from "deliberation" (Mansbridge 1999).

It would therefore be a mistake to regard studies of naturally occurring discussions (as in, for example, Huckfeldt and Sprague 1995, Beck et al. 2002, Mutz 2006, or Searing et al. 2007) as saying much about deliberation. For that, we need *deliberative designs*: discussions organized to be more much deliberative than the vast majority of those in everyday life. Examples include Consensus Conferences and Citizens' Juries (thumbnailed by Ozanne et al. 2009), as well as Deliberative Polls. In varying ways, and with varying success, these get their participants to talk more about policy issues, to learn and think more about them, and to do so in a more earnest, open-minded way.

*Policy Attitudes*. We take *policy attitudes* to be evaluations of policy options: how much one favors or opposes $X$ or favors or opposes $X$ over $Y$.[4] A policy attitude is thus "positional"— expressible as a point on a numerical continuum (taken here to run from 0 to 1, with .5 representing neutrality). We denote the $i$th individual's time-$t$ attitude on the $j$th issue by $A_{ijt}$, where $t = 1$, 2 (pre- versus post-deliberation).

*Policy-Attitude-Associated Cognition*. Assorted *cognitions* (perceptions, beliefs, perspectives) may underpin $A_{ijt}$. Collectively these may be more or less *complex* (numerous and cognitively interconnected), more or less *factually accurate*, and more or less *balanced* (congenial, in equal or representative proportions, to opposing sides). Note that these cognitive variables—call them $C_{ijt}$, $F_{ijt}$, and $B_{ijt}$—are conceptually distinct from the attitudes they support. The time-$t$ attitude is just $A_{ijt}$, no matter the $C_{ijt}$, $F_{ijt}$, or $B_{ijt}$ behind it. Individuals 1 and 2 may have the same attitude ($A_{1jt} = A_{2jt}$), even if, for example, $C_{1jt} > C_{2jt}$, making 1's attitude better "developed" or "crystallized" (further from what Converse (1970) called a "non-attitude"). Similarly, the time-1 to time-2 attitude change is just $A_{ij2} - A_{ij1}$, however much or little $C_{ijt}$, $F_{ijt}$, or $B_{ijt}$ may have changed.

*Full-consideration attitudes*. The attitudes people have are not necessarily those they *would* have with the benefit of unlimited information and reflection. Denote the $i$th individual's *full-consideration attitude* on the $j$th issue as $A_{ij}^{*}$. Axiomatically, we take this to be the attitude most closely aligned with his or her values and interests. $A_{ij}^{*}$ is thus close kin to Lau and Redlawsk's (1997) "correct votes," Mansbridge's (1983) "enlightened preferences," and the "full-information" votes and policy attitudes simulated by Bartels (1996), Delli Carpini and Keeter (1996), and Althaus (2003), among many others. Now, we never *know* $A_{ij}^{*}$. Even estimating it can be tricky (Luskin 2003). But here we need it only as a conceptual touchstone, for which we

need only posit its existence.

*Appropriateness.* In similar vein, we may define an attitude's *appropriateness* (for the individual holding it) as its proximity to its holder's full-consideration attitude: $\alpha_{ijt} \equiv 1 - \left| A_{ijt} - A_{ij}^* \right|$. Thus $\alpha_{ijt} = 1$ when $A_{ijt} = A_{ij}^*$ and $= 0$ when $A_{ijt} = 1$ and $A_{ij}^* = 0$, or vice versa.

## Homogenization, Polarization, and Domination

Our focal variables are all species of group-level attitude change. It sometimes makes sense to treat them as dichotomies, simply distinguishing cases in which they occur from those in which they do not. More informatively, however, they can be treated as continua centered at 0. The names express the worried-about sides (taken to be numerically positive), but the other sides (taken to be numerically negative) also exist: a group's attitudes may exhibit *homogenization* or *variegation* (decreasing or increasing variance); *polarization* or *moderation* (movement toward or away from the nearer extreme), and *domination* or *opposition* (movement toward or away from the attitudes of the group's socially advantaged members).

To formalize these variables, let $A_{ijt}$'s time-*t* mean within the *g*th group be $\overline{A}_{gjt}$; its time-*t* standard deviation within the *g*th group be $s_{gjt}$; and, assuming some mutually exclusive, exhaustive division into advantaged and disadvantaged, its time-*t* mean for the *g*th group's advantaged and disadvantaged members be $\overline{A}_{gjt}^a$ and $\overline{A}_{gjt}^d$. In these terms:

The *homogenization* of the *g*th group's attitudes on the *j*th issue is

(1)  $H_{gj} = s_{gj1} - s_{gj2},$[5]

which $> 0$ for homogenization, $< 0$ for variegation, and $= 0$ for neither. Figure 1 illustrates, representing the within-group variation by more or less elongated ellipses. Regardless of what happens to the mean (compare Panels A1a and A2a with Panels A1b and A2b), a decreasing

variance (as in Panels A1a and A2a) is homogenization, an increasing one (as in Panels A1b and A2b) variegation. $H_{gj}$ is at its most positive (.5) when the participants are evenly split between the polar attitudes (half at 0, half at 1) before deliberating but all have exactly the same attitude (whatever it may be) after doing so—changing, i.e., from perfect dissensus ($s_{gj1} = .5$) to perfect consensus ($s_{gj2} = 0$). It is at its most negative (–.5) for the opposite change, from perfect consensus to perfect dissensus. The binary version is $H_{gj}^{b} = 1$ if $H_{gj} > 0$ and $= 0$ if $H_{gj} \leq 0$. Redundantly, though perhaps usefully for later exposition, the complementary binary variable for variegation can be defined as $V_{gj}^{b} = 1$ if $H_{gj} < 0$ and $= 0$ if $H_{gj} \geq 0$.[6]

The *polarization* of the $g$th group's attitudes on the $j$th issue is

$$(2) \qquad P_{gj} = (\bar{A}_{gj2} - \bar{A}_{gj1})S_{gj1},$$

where $S_{gj1}$ indicates the $g$th group's time-1 side on the $j$th issue: $S_{gj1} = 1$ for $\bar{A}_{gj1} > .5$ and $= -1$ for $\bar{A}_{gj1} < .5$. The multiplication by $S_{gj1}$ ensures that $P_{gj} > 0$ for polarization, $< 0$ for moderation, and $= 0$ for neither (no mean attitude change).[7] Panels B3a and B4a show $\bar{A}_{gj1}$ moving toward the nearer extreme (polarization); Panels B3b, B4b, and B5b show it moving in the opposite direction, toward or beyond the midpoint (moderation).[8] $P_{gj}$ is at its most positive (just barely under .5) when the mean is either just barely above .5 before deliberation and exactly 1 after or just barely below .5 before deliberation and exactly 0 after. It is at its most negative (just barely above –1) when the mean is just fractionally toward the midpoint from the nearer pole (just barely below 1 or above 0) before deliberating and at the opposite pole (0 or 1) after.[9] The binary version is $P_{gj}^{b} = 1$ if $P_{gj} > 0$ and $= 0$ if $P_{gj} \leq 0$. Its complement, for moderation, is $M_{gj}^{b} = 1$ if $P_{gj} < 0$ and $= 0$ if $P_{gj} \geq 0$.

The *domination* of the $g$th group's attitudes on the $j$th issue (with respect to a given dimension of advantage) is

(3) $\qquad D_{gj} = (\bar{A}_{gj2} - \bar{A}_{gj1})R_{gj1},$

where $R_{gj1}$ indicates the ordinal relation between $\bar{A}_{gj1}$ and $\bar{A}_{gj1}^{a}$: $R_{gj1} = 1$ for $\bar{A}_{gj1}^{a} > \bar{A}_{gj1}$ and $= -1$

for $\bar{A}_{gj1}^{a} < \bar{A}_{gj1}$. Thus $D_{gj} > 0$ for domination; $< 0$ for opposition; and $= 0$ for neither (no mean atti-

tude change).[10] In Figure 1, C6a, C7a, and C8a show $\bar{A}_{gj1}$ moving toward or beyond $\bar{A}_{gj1}^{a}$ (domi-

nation), while C6b and C7b show it moving in the opposite direction, away from $\bar{A}_{gj1}^{a}$ (opposi-

tion). $D_{gj}$ is at its most positive (just barely $< 1$) when the disadvantaged start at 1 or 0, the ad-

vantaged start just barely toward the midpoint from that (as therefore does the whole group), and

everyone, whether advantaged or disadvantaged, moves all the way to the opposite pole (0 or 1),

not only toward but as far as possible beyond $\bar{A}_{gj1}^{a}$, and, symmetrically, at its most negative (just

barely $> -1$) when the *advantaged* start at 1 or 0, the *disadvantaged* start just barely toward the

midpoint from that, as therefore does the whole group), and everyone moves all the way to the

opposite pole (0 or 1), as far as possible away from $\bar{A}_{gj1}^{a}$.[11] The binary version is $D_{gj}^{b} = 1$ if $D_{gj} >$

$0$ and $= 0$ if $D_{gj} \leq 0$. Its complement, for opposition, is $O_{gj}^{b} = 1$ if $D_{gj} < 0$ and $= 0$ if $D_{gj} \geq 0$.[12]

We shall examine three dimensions of advantage—gender, education, and income—both

individually and all three combined.[13] For gender, a matter simply of socio-demographic group

membership, the threshold of advantage (maleness) is relatively clear. For education and in-

come, matters of having more or less of a numerical or ordinal property, it is less clear. But divi-

sion at each DP's sample median makes sense, for several reasons. First, the sample median var-

ies from sample to sample, tacitly recognizing that what is highly educated or high-income varies

by time and place. Social advantage is relative. Second, the sample median, unlike the small-group median, lets the proportions of advantaged versus disadvantaged vary from group to group. Third, the median, compared to other sample-dependent cut-points, minimizes the proportion of small groups for which the number of either disadvantaged or advantaged members scrapes zero. Fourth, the median is a good guess when we do not know where to draw the line. If the actual proportion of the sample that is disadvantaged has a symmetric (Bayesian) probability distribution centered at .5 (the uniform distribution being a special case), the minimum mean-squared-error guess is .5, corresponding to division at the median.

## Theory, Expectations, and Inferences

In broad strokes, our central proposition is that homogenization, polarization, and domination rest and therefore shed light on the deliberative quality of the discussion. It will help in developing the why's and how's to note that the population means of $H_{gj}$, $P_{gj}$, and $D_{gj}$ (averaging across all possible group-issue pairs, a sense of "population" about which we say a bit more below) are $E(H_{gj})$, $E(P_{gj})$, $E(D_{gj})$, where $E(.)$ denotes mathematical expectation. Positive values indicate the extent to which, on average, homogenization exceeds variegation, polarization exceeds moderation, and domination exceeds opposition; negative values, the reverse. Similarly, the relative frequencies of homogenization, polarization, and domination are $E(H_{gj}^b)$, $E(P_{gj}^b)$, and $E(D_{gj}^b)$, and those of variegation, moderation, and opposition $E(V_{gj}^b) = 1 - E(H_{gj}^b)$, $E(M_{gj}^b) = 1 - E(P_{gj}^b)$, and $E(O_{gj}^b) = 1 - E(D_{gj}^b)$. It will also help, at points, to take $\left| \bar{A}_{gjt} - \bar{A}_{gj}^* \right|$ and $\left| s_{gjt} - s_{gj}^* \right|$ —the distances between a group's sample-mean attitude ($\bar{A}_{gjt}$) and its sample-mean full-consideration attitude ($\bar{A}_{gj}^*$) and between the sample standard deviations of its members' $j$th-issue attitudes ($s_{gjt}$) and of their full-consideration attitudes ($s_{gj}^*$)—as simple, tractable reflections of group-level

"appropriateness. The smaller these distances, the more appropriate the group's attitudes.

## Social Dynamics versus Weighing the Merits

We see two broad mechanisms by which a discussion may change policy attitudes:

*Social Dynamics* (*SD*). The first lies in the discussion's social interactions, the relevant features of which we shall call its social dynamics (*SD*). People commonly seek approval and sidestep disagreement. That should shrink the initial within-group standard deviation $s_{gj1}$ (Huckfeldt and Sprague 1995; Huckfeldt et al. 2004; Cialdini and Goldstein 2004; Mutz 2006; Sunstein 2002, 2009; Gerber et al. 2012; Sunstein and Hastie 2014; Suhay 2015) and pull the initial group mean attitude $\bar{A}_{gj1}$ toward the nearer extreme (Zuber et al. 1992; Sunstein 2002, 2009; Wojcieszak 2011, Sunstein and Hastie 2014, Suhay 2015). In addition, some participants, often concentrated among the socially disadvantaged, will normally be less articulate, less assertive, or less heeded than others. That should move $\bar{A}_{gj1}$ toward $\bar{A}_{gj1}^{a}$ (Fraser 1993, Sanders 1997, Young 2000, Karpowitz et al. 2012, Karpowitz and Mendelberg 2014). Hence *SD* should produce homogenization, polarization, and domination—not always strongly, nor in every instance, but on average and more often than not. More formally, we should expect $E(H_{gj})$, $E(P_{gj})$, $E(D_{gj})$ all $\gg$ 0, and $E(H_{gj}^{b})$, $E(P_{gj}^{b})$, and $E(D_{gj}^{b})$ all $\gg$ .5 and, *ipso facto*, $\gg E(V_{gj}^{b})$, $E(M_{gj}^{b})$, and $E(O_{gj}^{b})$.

*Weighing the merits* (*WM*). The second mechanism is the participants' open-minded, even-handed, and earnest weighing-of-the-merits (the arguments and evidence), as they see them—the deliberation in the discussion, call it *WM*. This where Habermas's (1990, 1996) "unforced force of the better argument" resides. In *WM*, participants can be expected to absorb non-trivial quantities of new information, higher-than-everyday proportions of which are accurate and counter-attitudinal, thus increasing $C_{ij1}$, $F_{ij1}$, and $B_{ij1}$ (as the results in Luskin et al. 2002, Barabas

2004, Hansen 2004, and Farrar et al. 2010 suggest). That in turn should allow them to see more

clearly how given policies may serve or thwart their values and interests (which they may also

come to see more clearly), thus moving $A_{ijt}$ closer to $A_{ij}^{*}$ [14] and, at the group level, reducing the

distances $\left| \bar{A}_{gjt} - \bar{A}_{gj}^{*} \right|$ and $\left| s_{gjt} - s_{gj}^{*} \right|$. There is no obvious reason to expect these changes to consti-

tute homogenization, polarization, or domination—or their opposites—although …

## A Closer Look at *WM*'s Effects

We can actually reason out some rough expectations about the WM-induced homogeni-

zation/variegation, polarization/moderation, and domination/opposition by taking account of the

pre-existing homogenization/variegation, polarization/moderation, and domination/opposition

(call them $H_{gj}^{O}$, $P_{gj}^{O}$, and $D_{gj}^{O}$) of the outside-world attitudes with which the discussion begins.

These latter can most sensibly be defined as differences between the initial $s_{gj1}$ and $\bar{A}_{gj1}$ and the

full-consideration $s_{gj}^{*}$ and $\bar{A}_{gj}^{*}$ (in contrast to $H_{gj}$, $P_{gj}$, and $D_{gj}$, which are differences between the

initial $s_{gj1}$ and $\bar{A}_{gj1}$ and the post-discussion $s_{gj2}$ and $\bar{A}_{gj2}$).[15]

Figure 2 illustrates the pre-existing $H_{gj}^{O}$, $P_{gj}^{O}$, and $D_{gj}^{O}$ alongside the corresponding *WM*-

induced $H_{gj}$, $P_{gj}$, and $D_{gj}$. To avoid redundant mirror-image cases, we assume, without loss of

generality, that $\bar{A}_{gj1} > .5$, making 1 the nearer extreme. The lower, solid arrows depict the *WM*-

induced attitude changes, moving $s_{gjt}$ and $\bar{A}_{gjt}$ toward $s_{gj}^{*}$ and $\bar{A}_{gj}^{*}$, and the upper, dashed ones the

prior effects of outside-world forces, pulling the initial $s_{gj1}$ and $\bar{A}_{gj1}$ above the full-consideration

$s_{gj}^{*}$ and $\bar{A}_{gj}^{*}$ in Scenario A and below them in Scenario B. Scenario A consists of pre-existing

variegation ($s_{gj1} > s_{gj}^{*}$), polarization ($\bar{A}_{gj}^{*} < \bar{A}_{gj1}$), and domination ($\bar{A}_{gj}^{*} < \bar{A}_{gj1}$, $\bar{A}_{gj1}^{a}$ or $\bar{A}_{gj}^{*} < \bar{A}_{gj1}^{a}$

$< \bar{A}_{gj1}$, given $\bar{A}_{gj}^{*} < \bar{A}_{gj1}$), Scenario B of pre-existing homogenization ($s_{gj1} < s_{gj}^{*}$), moderation

($\bar{A}_{gj1} < \bar{A}_{gj}^{*}$), and opposition ($\bar{A}_{gj1} < \bar{A}_{gj}^{*} < \bar{A}_{gj1}^{a}$, given $\bar{A}_{gj1} < \bar{A}_{gj}^{*}$).[16] We return to the two possi-

bilities for pre-existing domination, in Figure 2's rows 3a and 3b, presently.

Scenarios A and B are alternative legacies of the forces shaping outside-world attitudes.

Some of those forces—notably, communications-siloing (residential and other sorting, homoph-

ily, selective media consumption) and social inequalities—are *centrifugal*, pulling the initial atti-

tudes away from .5, toward both the nearer extreme and the mean attitude of the advantaged

($\bar{A}_{gj1}^{a}$), and thus also (since the nearer extreme is 0 for some but 1 for others) increasing their var-

iance. Other forces—principally, inattention, ignorance, and irreflection—are *centripetal*, keep-

ing the initial attitudes close to .5 and thus also restraining their variance. These latter may be

less plainly visible to those of us avidly tracking political debates but greatly affect the attitudes

of the less politically engaged—and, on low-salience issues, many of the more politically en-

gaged as well. The centrifugal forces make for Scenario A, the centripetal ones for Scenario B.[17]

What Figure 2 makes clear is that *WM* can be expected to "correct" what the outside

world has done—producing homogenization, moderation, and opposition that reduce or reverse

the pre-existing variegation, polarization, and domination in Scenario A and variegation, polari-

zation, and domination that reduce or reverse the pre-existing homogenization, moderation, and

opposition in Scenario B. As drawn, the arrows (shorter from $s_{gj1}$ to $s_{gj2}$ and from $\bar{A}_{gj1}$ to $\bar{A}_{gj2}$

than from $s_{gj}^{*}$ to $s_{gj1}$ and from $\bar{A}_{gj}^{*}$ to $\bar{A}_{gj1}$) depict reductions, which seem likelier than reversals

(its being hard for a few days of discussion to completely negate the accumulated effects of a

lifetime of prior circumstances and experiences). The reduction or reversal may be slightly

smaller for Scenario A's pre-existing domination, which can yield *WM*-induced opposition in 3a

but *WM*-induced domination in 3b, than for Scenario A's pre-existing variegation or polarization (or anything in Scenario B). But the centrifugal forces pulling $\overline{A}_{gj1}$ above $\overline{A}_{gj}^*$ should also pull the better-educated and better-off, who tend to be more exposed to the information and messaging involved, still further above it ($\overline{A}_{gj1} < \overline{A}_{gj1}^a$), making 3a much more common than 3b.

The lesson for the frequencies of *WM*-induced homogenization/variegation, polarization/moderation, and domination/opposition is that they ultimately depend on the balance between centrifugal and centripetal forces. Absent much reason to see either as greatly stronger than the other, the safest guess, and our expectation, is that they are about equally strong. In this case, *WM* should produce homogenization, polarization, and domination about half the time and variegation, moderation, and opposition about half the time: $E(H_{gj}^b) \cong E(V_{gj}^b) \cong E(P_{gj}^b) \cong$

$E(M_{gj}^b) \cong E(D_{gj}^b) \cong E(O_{gj}^b) \cong .5$. To the extent that these proportions depart from .5, however, we might expect to see slightly more homogenization than variegation but slightly less polarization and domination than moderation and opposition. These are increasingly tribal days (Achen and Bartels 2016), in which the balance of outside-world forces may be tipping slightly toward the centrifugal. Still, we underscore the "slightly." Inattention, ignorance, and irreflection remain forever widespread and potent, and should keep $E(H_{gj}^b)$, $E(P_{gj}^b)$, and $E(D_{gj}^b)$ (and $E(V_{gj}^b)$,

$E(M_{gj}^b)$, and $E(O_{gj}^b)$) all quite near .5.

**Theoretical Asides**

Two side notes, important in different ways to our post-analysis reflections below, need sounding.

*Motivated Reasoning.* The first is that both *WM* and *SD* entail varieties of "motivated reasoning," a term often simplistically reduced to ways of ignoring, discounting, or reasoning

around counter-attitudinal information. This too-narrow sense is apt enough when the motivations are strictly or mainly "defensive." In that case, discussion should produce little attitude change. But defensive motivations may be less pervasive than previously thought (Hart et al. 2009, Druckman 2012, Hahn and Harris 2014, Leeper and Slothuus 2014, Arceneaux and Vander Wielen 2017, Mar and Gastil 2019, Druckman and McGrath 2019), and are hardly the only motivations in play (Kunda 1990), not even the only "directional" ones (Hart et al. 2009). In discussions, social approval motivations (to please or favorably impress others) are important to *SD*, and accuracy motivations (to "process information in an objective, open-minded fashion …," Hart et al. 2009, p.558) important to *WM*. Both can be expected to change attitudes—the former in directions tending to yield homogenization, polarization, and domination, the latter toward full-consideration attitudes.

*Contextual Factors*. The second note concerns the conditions under which the discussion occurs. A discussion involving a serious weighing-of-the-merits is deliberative, but the deliberation may be more or less "effective"—more or less helpful to its participants in considering what their attitudes should be—depending on who is "in the room" and (not unrelatedly) the information readily available to them. The more demographically and attitudinally heterogeneous the discussants, and the more plentiful, balanced, and accurate the information, the harder it is for the discussion and its participants to misconstrue, slight, or ignore relevant information and arguments (see Mercier and Landemore 2012, Tuller et al. 2015). These variables, too, not just greater weighing-of-the-merits, are part of what separates successful deliberative designs from everyday discussions, in which homophily and sorting make the discussants homogeneous, and the information is generally confined to whatever the discussants bring with them, which is, for most of them, in most discussions, sparse, imbalanced and/or inaccurate.[18]

**In Sum**

A discussion's effects on homogenization, polarization, and domination should depend on how deliberative it is—on how much it revolves around *WM*. Everyday discussions, involving much *SD* and little *WM*, can be expected to yield decidedly more homogenization than variegation, polarization than moderation, and domination than opposition. The deliberative discussions spawned by successful deliberative designs should not. If anything, they may produce some slight homogenization, but also, if so, some slight *moderation* and *opposition*.

These widely different expectations allow the observed distributions of $H_{gj}$, $P_{gj}$, and $D_{gj}$ and $H_{gj}^b$, $P_{gj}^b$, and $D_{gj}^b$ form a rough diagnostic. if the sample means $\bar{H}$, $\bar{P}$, $\bar{D}$ (estimating $E(H_{gj})$, $E(P_{gj})$, and $E(D_{gj})$) are well above 0, or the sample frequencies $\bar{H}^b$, $\bar{P}^b$, and $\bar{D}^b$ (estimating $E(H_{gj}^b)$, $E(P_{gj}^b)$, and $E(D_{gj}^b)$) well above .5, the discussion is probably not very deliberative, involving little beyond *SD*. If instead $\bar{H}$, $\bar{P}$, and $\bar{D}$ are all close to 0, and $\bar{H}^b$, $\bar{P}^b$, and $\bar{D}^b$ all close to .5, the discussion is probably quite deliberative, involving a healthy dose of *WM*.

## Data

We take our data from Deliberative Polling, a well-known deliberative design (described, e.g., in Luskin, Fishkin, and Jowell 2002). Its signal features include randomly sampled participants randomly assigned to small groups; honoraria to help recruit hard-to-get participants, including those unenticed by the prospect of discussing the policy issue; balanced, factually accurate briefing materials provided in advance; lightly moderated small-group discussions alternating with plenary question-and-and-answer sessions with panels of policy experts; and anonymous questionnaires to gauge policy attitudes and other relevant variables both before and after deliberation. The 21 DPs forming our data are summarized in Table 1. Five were in Britain, eleven in the U.S., two in the E.U., and one each in China, Australia, and Bulgaria. Sixteen were

face-to-face, five online. The topics spanned policy issues from foreign policy to health care. In all, the data encompass 372 small groups (containing, all told, 5,736 participants), 139 policy issues (counting each policy attitude index as tapping a somewhat different issue), and 2,601 group-issue pairs.[19] Appendix A describes the indices and their ingredients in greater detail.

In the fullest accounting, we are sampling time-indexed person-populations (e.g., Great Britain in 1994, which is in our sample, or Paraguay in 2011, which is not), then both the individuals within those time-indexed person-populations and the policy issues facing them (e.g., crime in Bulgaria in 2007, which is in our sample, and climate change in the U.S. in 2009, which is not). The samples of individuals are almost always random draws. The samples of time-indexed person-populations and policy issues are not. Yet we hope they are large and varied enough to afford some hard-to-quantify but nonzero sense that the results are unlikely to be peculiar to just a few places, times, or issues. Although most of the DPs here were in Anglo-American democracies and conducted face-to-face, $\bar{H}$, $\bar{P}$, and $\bar{D}$ are only trivially different for the group-issue pairs from other countries and in online mode, as can be seen in Appendix B.

## Results

So how much homogenization, polarization, and domination does there appear to be? The short answer is, very little. Figure 3 shows the distributions of the group-issue-level $H_{gj}$, $P_{gj}$, and $D_{gj}$ across group-issue pairs. All are packed tightly and symmetrically around near-zero means. Some group-issue pairs exhibit homogenization, some variegation; some exhibit polarization, some moderation; some exhibit domination, some opposition. But often and on average very little.

Table 2 homes in on the means ($\bar{H}$, $\bar{P}$, $\bar{D}$) and relative frequencies ($\bar{H}^b$, $\bar{P}^b$, and $\bar{D}^b$). The top row shows $\bar{H}$, $\bar{P}$, $\bar{D}$, $\bar{H}^b$, $\bar{P}^b$, and $\bar{D}^b$, the lower rows the Huber-White estimates of

the standard errors (White 1980),[20] and two-tailed *p*-values for the null hypotheses that $E(H_{gj}) = E(P_{gj}) = E(D_{gj}) = 0$ and $E(H_{gj}^{b}) = E(V_{gj}^{b}) = E(P_{gj}^{b}) = E(M_{gj}^{b}) = E(D_{gj}^{b}) = E(O_{gj}^{b}) = .5$—that in the population of all possible group-issue pairs the mean levels of homogenization, polarization, and domination are 0 and that each occurs only as often as its opposite (as would be expected from *WM*, assuming centrifugal and centripetal forces to be equally strong).[21] The alternative hypotheses are that $E(H_{gj})$, $E(P_{gj})$, $E(D_{gj})$ all $> 0$ and that $E(H_{gj}^{b}) > .5 > E(V_{gj}^{b})$, $E(P_{gj}^{b}) > .5 > E(M_{gj}^{b})$, and $E(D_{gj}^{b}) > .5 > E(O_{gj}^{b})$—that the mean levels of homogenization, polarization, and domination are all positive and that each occurs more often than its opposite.

In their stronger versions ($\bar{H}$, $\bar{P}$, and $\bar{D} \gg 0$ and $\bar{H}^{b}$, $\bar{P}^{b}$, and $\bar{D}^{b} \gg .5$), these alternatives are what would be expected from a discussion involving mostly *SD*. But Table 2 shows nothing of the sort. True, six of the table's 10 estimates are "statistically significant" ($p < .05$). In these cases, we can be quite sure that, in the population from which we are sampling, there is *some* homogenization or variegation (depending on the signs of $\bar{H}$ and $\bar{H}^{b} - .5$), *some* polarization or moderation (depending on the signs of $\bar{P}$ and $\bar{P}^{b} - .5$), and *some* domination or opposition (depending on the signs of $\bar{D}$ and $\bar{D}^{b} - .5$). But how much? At a glance, $\bar{H}^{b}$, $\bar{P}^{b}$, and $\bar{D}^{b}$ are close to .5, $\bar{H}$, $\bar{P}$, and $\bar{D}$ close to 0.

A closer look reinforces that impression. Take homogenization. $\bar{H}^{b} = .595$, distinctly above but still quite close to .5 (less than 20% of the way to 1). This is far from "routine." On average, moreover, it is weak. To see this, imagine a group of 20 participants, with 4 group members having an initial attitude at .6 and 2 each at every other integer multiple of .1 from .2 to 1. This initial distribution has a mean of .6 and a middling standard deviation of .245, close to halfway between $s_{gjt}$'s maximum of .5 and minimum of 0. Now let one of the participants

initially at .2 move to .3 and one of those initially at 1 move to .9—in each case, .1 closer to the mean. This is not much homogenization: the distribution is almost completely unaltered. The mean remains .6, while the standard deviation shrinks from .245 to .230. This unimposing scenario thus yields $H_{gj} = .015$, but the observed $\bar{H} = .013$ is still lower.

Next take polarization. $\bar{P}^b =$ only .454, meaning that slightly *fewer* than half the group-issue pairs polarize (more than half moderate), and $\bar{P} = -.022$, meaning that, on average, their mean attitudes move slightly *toward*, not away from, the midpoint, likewise representing moderation. To contextualize this $\bar{P}$, take again a group of 20 with an initial mean attitude $\bar{A}_{gj1}$ of .6. If just 5 of 20 members decrease their scores, from whatever starting-points, by just .1 apiece (a scenario involving a bit more attitude change than that yielding $\bar{H} = .013$, but still not much), $\bar{P} = -.025$. The observed magnitude ($\bar{P} = -.022$) is still smaller.

Finally, domination. Across our four dimensions of advantage, $\bar{D}^b$ runs only from .447 to .485. No matter what the dimension, *fewer* than 50% of the group-issue pairs move toward the initial mean attitude of the advantaged (meaning that more than 50% move *away* from it). This is (weak) opposition, not domination. The $\bar{D}$'s tell much the same tale. $\bar{D} = .008$ for gender, $= -.013$ for education, $< .0005$ for income, and $= -.015$ for three-fold advantage. Take yet again a group of 20 members. Let $\bar{A}_{gj1} = .6$ and $\bar{A}^a_{gj1} = .8$. If just three of 20 participants decrease their scores by just .1 apiece, $D_{gj} = -.015$. If just two do so, $D_{gj} = -.10$. These scenarios do not involve much attitude change, but their $D_{gj}$'s bracket the negative $\bar{D}$'s for education and three-fold advantage. The positive $\bar{D}$'s for gender are still smaller. There is more opposition than domination, but not much of either.

The principal lesson is clear. The homogenization, polarization, and domination here are much too modest to suggest attitude changes stemming heavily from *SD* but are consistent with

attitude changes stemming heavily from *WM*. A further suggestion, too faint and uncertain to be a "lesson," lies in the signs of $\bar{H}$, $\bar{P}$, and $\bar{D}$ and of $\bar{H}^b$'s, $\bar{P}^b$'s, and $\bar{D}^b$'s departures from .5. These show some slight homogenization, moderation, and opposition, a combination suggesting that the deliberation may be redressing outside-world variegation, polarization, and domination.

## Elaborations and Reflections

By way of follow-up, it may help to say a bit more about what "domination," the most polyglot of our terms, does and does not mean; to elaborate on and probe our findings regarding it; to consider motivated reasoning's implications for our rough diagnostic; and to suggest some of the likeliest reasons for which our results differ from some others.

### $D_{gj}$ and the Meaning of Domination

"Domination," here, is simply attitude change—specifically, the group's mean attitude change toward the initial mean attitudes of its advantaged members, distilled in $D_{gj}$. It is not it-self a matter of dialogic inequalities or other asymmetries in the discussion's social interactions, although they presumably affect it. Equivalently, $D_{gj}$ is also the weighted mean of $\bar{A}^d_{gj1}$'s move-ment toward $\bar{A}^a_{gj1}$ and $\bar{A}^a_{gj1}$'s movement toward $\bar{A}^d_{gj1}$:

(4) $$D_{gj} = d_g M^d_{gj} + (1 - d_g) M^a_{gj},$$

where $M^d_{gj} = (\bar{A}^d_{gj2} - \bar{A}^d_{gj1})$, $M^a_{gj} = (\bar{A}^a_{gj2} - \bar{A}^a_{gj1})$, and $d_g \neq 0$ is the proportion of the $g$th group who are disadvantaged. Note that both $M^d_{gj} > 0$ and $M^a_{gj} > 0$ represent movement toward the advantaged or, equivalently, away from the advantaged (assuming, without loss of generality, that $\bar{A}_{gj1} > .5$ and $\bar{A}^d_{gj1} < \bar{A}^a_{gj1}$, implying $\bar{A}^d_{gj1} < \bar{A}_{gj1}$).

But this is not the only possible way of looking at domination qua attitude change, and it

may thus be clarifying to contrast $D_{gj}$ with a couple of alternatives. One is the unweighted mean:

$$D'_{gj} = \tfrac{1}{2}(M^d_{gj} + M^a_{gj}),$$

the special case of $D_{gj}$ for which $d_g = \tfrac{1}{2}$ for all $g$. Removing $D_{gj}$'s dependence on $d_g$ does more

to contrast $M^d_{gj}$ and $M^a_{gj}$. $D'_{gj}$ shares $D_{gj}$'s sign when $\bar{A}^d_{gj1}$ and $\bar{A}^a_{gj1}$ move in the same direction

but can have the opposite sign when they move in opposite directions ($M^d_{gj} > 0$ and $M^a_{gj} < 0$ or

vice versa). If, for example, $M^d_{gj} = .4$ and $M^a_{gj} = -.2$, $D_{gj}$ can be negative when the disadvan-

taged are sufficiently few in relation to the advantaged ($D_{gj} = -.08$ for $d_g = .2$), but $D'_{gj}$ is always

positive (in this case, $D'_{gj} = .1$), because the disadvantaged are moving further toward the advan-

taged than the advantaged toward the disadvantaged.

A second alternative, doing still more to contrast $M^d_{gj}$ and $M^a_{gj}$, is:

$$D''_{gj} = \tfrac{1}{2}(\left| M^d_{gj} \right| - \left| M^a_{gj} \right|)Q_{gj},$$

where $Q_{gj} = 1$ for $M^d_{gj} > 0$ and $= -1$ for $M^d_{gj} < 0$. $D''_{gj} > 0$ when the disadvantaged move further

toward the advantaged than the advantaged move in that same direction, and $< 0$ when the disad-

vantaged move further *away* from the advantaged than the advantaged move in *that* same direc-

tion. For example, if $M^d_{gj} = .2$, and $M^a_{gj} = .4$, $D_{gj}$ and $D'_{gj}$ ($= .3$) both $> 0$, because the disad-

vantaged, the advantaged, and ergo the whole group are moving toward the advantaged, but $D''_{gj}$

$= -.1$, because the disadvantaged are moving less in that direction than the advantaged, whereas

if $M^d_{gj} = -.2$, and $M^a_{gj} = -.4$, both $D_{gj}$ and $D'_{gj}$ ($= -.3$) $< 0$, because the disadvantaged, the ad-

vantaged, and ergo the whole group are moving away from the advantaged, but $D''_{gj} = .1$,

because the disadvantaged are moving less in that direction than the advantaged. Appendix C

supplies a fuller account.

These alternatives would make sense for more sociometric notions of "domination," com-

paring subgroup A's influence on subgroup B with B's influence on A. But what we are study-

ing here—what is most relevant to deliberative democracy—is the bottom-line effects on the

whole group's attitudes. And, for that, $D_{gj}$ (like $H_{gj}$ and $P_{gj}$) is the best fit—and would be,

whether we call it "domination" or something else. (Juliet was right about names.)

**Parsing $D_{gj}$**

It is nevertheless interesting to separate $M_{gj}^d$'s and $M_{gj}^a$'s contributions to $D_{gj}$. Given Eq.

(4), $D_{gj} > 0$ may stem from $M_{gj}^d > 0$, $M_{gj}^a > 0$, or both; $D_{gj} < 0$ from $M_{gj}^d < 0$, $M_{gj}^a < 0$, or both.

The separate means and relative frequencies, in Table 3, evince two interesting patterns. First,

the disadvantaged and advantaged move toward each other, each drawing the other's attitudes in

their direction ($\bar{M}^d > 0$, $\bar{M}^a < 0$). Second, the advantaged move slightly further toward the dis-

advantaged than vice versa (on all three dimensions, though not quite as far on the three com-

bined), consistent with the slightly negative $\bar{D}$'s.

**$D_{gj}$'s Dependence on $d_g$**

A more extrapolatory question is how far our results might differ for other dimensions of

advantage. Let the whole-sample proportion who are disadvantaged be $d$ (which, given random

assignment, should be close to the unweighted mean of the of $d_g$.) For the individual advantages

we examine here, $d \cong .5$—inherently for gender and by virtue of division at the whole-sample

median for education and income. As we have argued, these operational thresholds make sense

for these advantages. Our results for them are what they are. But what of other advantages, for

which *d* might be much higher or lower? For home ownership in the U.S., $d < .5$; for having attended private school in the U.S., $d > .5$. Let us therefore consider what $\bar{D}$ might have been if *d* had been markedly higher or lower.

A simple approach is to estimate a bivariate, linear equation for $D_{gj}$ as a function of $d_g$. The OLS-estimated slope is small and insignificant, and the $R^2 < .001$, which is already telling. The estimates imply, moreover, that, for $d_g = .2$, $\bar{D} = .012$ for gender, $-.013$ for education, $-.007$ for income, and $-.014$ for all three, while, for $d_g = .8$, $\bar{D} = .002$ for gender, $-.005$ for education, $.013$ for income, and $.003$ for all three.[22] That is, $\bar{D}$ would still show a bit more opposition than domination but not much of either if the disadvantaged were only 20% of each group and slightly more domination than opposition, but next-to-none of either if the disadvantaged were an 80% of each group. In fine, $\bar{D}$ does not appear to depend much on $d_g$.

**Motivated Reasoning Redux**

Could the near-zero homogenization, polarization, and domination in our *DP*s be a mere artefact of motivated reasoning? In everyday discussions, defensive and social approval motivations may limit attitude change, thus reducing $H_{gj}$, $P_{gj}$, and $D_{gj}$ and (assuming no correlation between signs and reduction in magnitude) $\bar{H}$, $\bar{P}$, and $\bar{D}$. But this is hardly a convincing explanation for our near-zero $\bar{H}$, $\bar{P}$, and $\bar{D}$. *DP*s are not everyday discussions. Their briefing materials and expert panels afford more information and make uncongenial information harder to ignore. They explicitly cultivate *WM*, promoting even-handed evaluations, a sense of accountability for one's views, and civic-mindedness, all of which should strengthen accuracy motivations (Bolsen et al. 2014, Lerner and Tetlock 1999, Kam 2007). They also involve direct interactions with more heterogeneous others, strengthening *WM*'s ability to change attitudes (Mercier and Landemore 2012, Tuller et al. 2015), specifically toward their full-consideration counterparts.

In fact, *DP*s do produce considerable attitude change (as in, e.g., Luskin et al. 2002).[23] In our present data, the mean absolute net change, $Mean(|Mean(A_{ij2} - A_{ij1})|)$, = .092, and the mean gross change, $Mean(Mean(|A_{ij2} - A_{ij1}|))$, = .203.[24] To appreciate these numbers, consider a five-point scale, from "strongly disagree" to "strongly agree," linearly projected onto the [0, 1] interval as 0, .25, .5, .75, and 1. Let 20% of the sample move from neutrality to agreement, another 20% from neutrality to strong agreement, and 24%, in the opposite direction, from disagreement to strong disagreement. This is quite a lot of movement (64% of the sample changing response, 20% by two response categories), quite preponderantly in one direction: two-thirds again as many people moving toward stronger agreement than toward stronger disagreement, and, on average, by two-thirds again as much. Yet the mean absolute net change is .090, slightly less than what we see, and the mean gross change is .210, only slightly more than what see. The reason that $\bar{H}$, $\bar{P}$, and $\bar{D}$ hug 0 is *not* that the participants are simply clinging to their time-1 attitudes.

**Deliberative Polling versus Other Deliberative Designs**

Other deliberative designs do sometimes yield routine and strong homogenization, polarization, and domination. Although there is not yet much systematic evidence on specific design features' effects (notably excepting Karpowitz et al. 2012), several features characteristic of *DP*s but rare among other designs do figure to promote *WM*, inhibit *SD*, and thus reduce homogenization, polarization, domination. Three, in particular, leap out:

(1) The task being set. Are the participants asked to reach a conscious, collective decision? To reach a consensus? Or simply to talk, listen, learn, and think about the issues? When the goal is consensus, homogenization is a demand characteristic. It is hardly surprising or informative when a design seeking consensus approaches it (consistent with research on compliance and conformity, as in, e.g., Cialdini and Goldstein 2004; Carlson and Settle 2016). Striving

to reach a conscious, collective decision, too, may create incentives to indulge emerging pluralities. Voilà, homogenization. More subtly, the pressure to agree may also hinder *WM* and allow *SD* freer rein, thus facilitating polarization and domination as well.[25] Designs asking the participants only to decide what they individually think entail no such task-based impetus toward homogenization, polarization, or domination.

(2) The encouragement versus discouragement of interim, public expressions of bottom-line attitudes ("I prefer Policy X"), as opposed to tributary beliefs about likely consequences or valuations thereof ("Policy X would produce more/less of Y, which would be a good/bad thing because …"). For example, many designs require or encourage publicly tallied votes or shows-of-hands.[26] This can be regarded as a subtler version of (1), and it, too, may be a shove toward homogenization, polarization, and domination (consistent with Brauer et al. 2004, Levy and Sakaiya 2020).

(3) The methods by which the participants are sampled, then assigned to groups. The ideal is random sampling, followed by random assignment, making every group a small random sample. Many designs attempt neither. Even designs that (claim to) practice random sampling may not actually come very close. Even those that do come fairly close do so to varying degree. Not everyone who is randomly selected can be reached or interviewed, and not everyone interviewed attends the event. Men, the young, the less well educated, the socially marginal are particularly underrepresented. So, still more relevantly, are the least interested in and knowledgeable about the topic. The magnitudes of these biases depend on details like the number of callbacks, the insistence with anyone besides the designated respondent is excluded, the existence and size of an honorarium, the venue's being away from home, etc. Random assignment can vary in attainment. Participants sometimes have their own ideas about what group to join.

The randomness of the sampling and assignment matter because random samples should, on average, across hypothetically iterated sampling, be just as demographically and attitudinally heterogenous as the population from which they are drawn. And the more heterogeneous the groups, the wider-ranging and more balanced the information their members exchanged should be—which, as previously argued, should curtail homogenization, polarization, and domination (see Levendusky 2016 and Strandberg et al. 2017).

In all these respects, DPs stand out. They do not task their participants with reaching any conscious, collective decision,[27] nor urge them toward (or away from) consensus; they sternly discourage interim public expressions of bottom-line opinion, including votes and shows of hands; and they employ high-quality random sampling,[28] followed by thoroughly random assignment, or the closest possible approximations thereof. The recruitment is well-organized and persistent, the participants are offered honoraria, and their travel and lodging are paid-for. Small wonder, in this light, that DPs tend to produce much less homogenization, polarization and domination than many other deliberative designs.

## Closing Remarks

Part of this study's value lies in its data. Scattered analyses of individual DPs and other deliberative events have reported broadly similar results regarding homogenization and polarization (Luskin, Fishkin, and Jowell 2002; Fishkin et al. 2010, Fishkin et al. 2011, Grönlund et al. 2015). In finer grain, Siu (2009) finds that the disadvantaged and advantaged speak about equal numbers of words and for about equal lengths of time, consistent with little domination. But a more convincing test requires a larger number of groups, deliberating on a larger number and wider variety of policy issues, in a larger number and wider variety of contexts. Here we have examined 21 DPs, in multiple countries and at different times, encompassing 372 small groups,

139 policy issues, and 2,601 group-issue pairs.

The results show only irregular and feeble homogenization, polarization, and domination. The means are close to 0, the relative frequencies close to .5. This is *not* simply because the participants' attitudes do not change very much, as might be expected from heavily defensive motivated reasoning. They do change, appreciably, just not in ways regularly constituting homogenization, polarization, or domination. This faintness of pattern suggests a relatively deliberative discussion, involving considerable weighing-of-the-merits, rather than just the social dynamics that would yield routine and strong homogenization, polarization, and domination.

The deliberative quality of the discussion—what makes a discussion a deliberation—matters because of its *effects* (cf. Lindell et al. 2017). Among other things, it should increase the participants' understanding of the issues, respect for others holding different views, and feelings of political efficacy. Still more critically for democracy, and more centrally for this paper, it should move the participants' policy attitudes toward their full-consideration attitudes, refining—not distorting—the public will.

Our results do show slightly more homogenization than variegation, but also slightly more moderation than polarization and opposition than domination: a dash of one of our three worried-about attitude changes but dashes of the opposites of the other two. These inequalities are faint (hence not to be taken too seriously) but contingently plausible (hence not to be swept completely out of mind). They are what we should expect when the centrifugal forces in outside-world communications-siloing and social inequalities slightly outweigh the centripetal ones in outside-world inattention, ignorance, and irreflection. As such, they represent deliberative *corrections* to *outside-world* distortions. We should not ever expect the distortions or therefore the corrections to be overwhelming. It is hard to imagine that the outside world's centrifugal and

centripetal forces, both perennially strong, can ever be too out-of-balance. But the faint homogenization, moderation, and opposition we currently see could grow somewhat stronger, should our outside-world politics continue to wax more centrifugal (perish the thought).

This line of reasoning recalls the chasm between deliberation and everyday discussion. Many of the claims that deliberation inevitably produces homogenization, polarization, and domination rest on observations of everyday discussions or results from deliberative designs insufficiently different from them. Indeed, the prevalence and magnitude of homogenization, polarization, and domination suggests itself as a criterion for evaluating deliberative designs. A discussion in which they preponderate and are strong may not be much of a deliberation.

Among the further, beckoning questions are these. What accounts for the variation across groups and issues? Fuller-fledged explanatory models may provide some answers. What about combinations of these phenomena? For example, are polarization and domination (both changes in the mean) more problematic when accompanied by homogenization (shrinking variance)? What about the effects of specific elements of deliberative design? How far do the differences between DPs and other designs stem their being consensus-neutral versus consensus-seeking, on their involving more rigorous random sampling and random assignment, etc.? Experimentally varying such features may permit some estimation. So may analyses of still more-meta meta-datasets, encompassing results from multiple designs (not just multiple DPs), varying in such features. But these present results should at least allay the concerns that deliberation intrinsically yields homogenization, polarization, and domination. In deliberative designs sufficiently capturing the deliberative ideal—sufficiently unlike everyday discussions—it does not.

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[1]We focus on "attitudes," but our arguments also apply, with minor tweaks, to "preferences."

[2]Construed as agreement on *a course of action*, the homogenization resulting from compromise may be seen as *desirable* (as per Cohen 1989, Gutmann and Thompson 1996, and Habermas 1996). It may minimize post-decision grievance and strife. But the underlying *policy attitudes*—our present concern—need not have converged to achieve compromise. Indeed, the notion of *compromise* presumes that they have not.

[3]A discussion's deliberativeness is thus an aggregative property—a function of its participants' mentation and communication. Solitary deliberation is a degenerate case, in which the group size is 1, and the "dialogue" internal.

[4]Consistent with prevailing definitions and usage (see Bohner and Dickel 2011, Albarracin and Shavitt 2018). Usage has long been in this spirit, sensibly unidimensional. Definitions, which often used to confound "attitude" with cognition and/or behavior, have belatedly caught up.

[5]This preserves the original unit of measurement. The difference or ratio of the variances $s^2_{gj1}$ and $s^2_{gj2}$ would yield much the same results.

[6]The redundancy is that $V^b_{gj} = 1 - H^b_{gj}$, except in the rare cases in which $H_{gj} = 0$. The same, in terms defined below, can be said of $M^b_{gj}$ and $O^b_{gj}$ vis-à-vis $P^b_{gj}$ and $D^b_{gj}$.

[7]$P_{gj}$ is undefined for $\bar{A}_{gj1} =$ exactly .5, in which case the group's mean attitude cannot move

toward or way from the nearer extreme, since neither extreme is nearer than the other.

[8]Moderation, therefore, need not mean decreasing extremity. A group that polarizes becomes more extreme, but so may one that moderates (as when $\bar{A}_{gj1} = .6$, and $\bar{A}_{gj2} = .1$).

[9]$P_{gj}$ can be larger in magnitude at its most negative than at its most positive because its positive values gauge movement on the "short side of the field." $\bar{A}_{gj1}$ cannot move as far toward the nearer pole. This asymmetry does not tilt the results toward moderation, however. It is no easier to get a $P_{gj}$ of $-.3$ than one of $+.3$, and we virtually never actually see $P_{gj} < -.5$.

[10]$D_{gj}$ is undefined for $\bar{A}_{gj1}^{a}$ exactly $= \bar{A}_{gj1}$ (implying that both also exactly $= \bar{A}_{gj1}^{d}$), in which case $\bar{A}_{gj1}$ cannot move toward $\bar{A}_{gj1}$. It is already there.

[11]Domination, therefore, need not mean decreasing distance from $\bar{A}_{gj1}^{a}$. A group exhibiting opposition increases its distance from $\bar{A}_{gj1}^{a}$, but so may one exhibiting domination (as when $\bar{A}_{gj1}^{a} = .6$, $\bar{A}_{gj1} = .7$, and $\bar{A}_{gj2} = .3$).

[12]As these formalizations make clear, $H_{gj}$, $P_{gj}$, and $D_{gj}$ (and $H_{gj}^{b}$, $P_{gj}^{b}$, and $D_{gj}^{b}$) are conceptually distinct. $P_{gj}$ and $D_{gj}$ are both mean attitude change, though with different points of reference (the nearer extreme versus $\bar{A}_{gj1}^{a}$). In magnitude, both are $\left| \bar{A}_{gj2} - \bar{A}_{gj1} \right|$, but their signs are as apt to be opposite as the same. $H_{gj}$ is a change not in the mean attitude but in the within-group standard deviation. Sunstein (2002) and Sunstein and Hastie (2014) regard homogenization and polarization as intimately related, finding, in their data, that they largely co-occur. Some positive correlation does seem likely, but not on account of any built-in overlap. Rather, $H_{gj}$ may causally affect $P_{gj}$, or the two may be "spuriously" correlated, each resting on the same or correlated other

variables. In our *DP* data (described below), the $H_{gj}$-$P_{gj}$ correlation is only a modest .358, and the $H_{gj}$-$D_{gj}$ and $D_{gj}$-$P_{gj}$ correlations range only from $-.062$ to .105, averaging only .012.

[13]In this last case, $\bar{A}_{gj1}^{a}$ is the mean initial attitude of those who are male, better-educated, *and* higher-income.

[14]With some exceptions. When $A_{ij1}$ is already close to $A_{ij}^{*}$ ( $\alpha_{ij1}$ close to 1), *WM* may leave the attitude unchanged ($A_{ij2} = A_{ij1}$, $\alpha_{ij2} = \alpha_{ij1}$), just better grounded.

[15]More precisely, $H_{gj}^{O} = s_{gj}^{*} - s_{gj1}$, $P_{gj}^{O} = (\bar{A}_{gj1} - \bar{A}_{gj}^{*}) S_{gj}^{0}$, and $D_{gj}^{O} = (\bar{A}_{gj1} - \bar{A}_{gj}^{*}) R_{gj}$, where $S_{gj}^{0} = 1$ for $\bar{A}_{gj}^{*} > .5$ and $= -1$ for $\bar{A}_{gj}^{*} < .5$, and $R_{gj}^{0} = 1$ for $\bar{A}_{gj1}^{a} > \bar{A}_{gj}^{*}$ and $= -1$ for $\bar{A}_{gj1}^{a} < \bar{A}_{gj}^{*}$. $H_{gj}^{O}$, $P_{gj}^{O}$, and $D_{gj}^{O}$ are pre-existing homogenization, polarization, and domination when $> 0$ and pre-existing variegation, moderation; and $D_{gj}^{O}$ opposition when $< 0$.

[16]The inequalities are strict because we exclude $s_{gj1} = s_{gj}^{*}$, $\bar{A}_{gj1} = .5$, and $\bar{A}_{gj1} = \bar{A}_{gj1}^{a}$ as both vanishingly rare and leaving the movements of $s_{gj1}$ toward $s_{gj}^{*}$ and $\bar{A}_{gj1}$ toward .5 and $\bar{A}_{gj1}^{a}$ undefined (in these cases, $s_{gj1}$ cannot get any closer to $s_{gj}^{*}$, nor $\bar{A}_{gj1}$ any closer to .5 or $\bar{A}_{gj1}^{a}$).

[17]The centrifugal-centripetal distinction resembles Leeper's (2014) between "slanted information environments" and "low-importance attitudes."

[18]Opposing imbalances in individual-level information could cancel out, but since the discussants tend to be homogenous, the group-level information tends to be imbalanced as well.

[19]Not 372*139 = 51,708, since each index is confined to just one DP and its small groups.

[20]A given group may homogenize, polarize, or exhibit domination similarly across issues, making the group-issue pairs constituting the observations on $H_{gj}$, $P_{gj}$, and $D_{gj}$ dependent. The Huber-White estimates cluster by policy index within each DP (as in White 1980).

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[21]The *p*-value is a stretch for $H_{gj}$, a difference of standard deviations, rather than of means.

[22]For the three combined, for which the actual *d* (the whole-sample proportion who are *either* female *or* of below-median education *or* of below-median income) is already a shade over .8, we may also try $d_g = .95$. But that still yields $\bar{D}$ = only .008.

[23]As, in some cases, do other deliberative designs (as in, e.g., Barabas 2004; Gastil, Black, and Moscovitz 2008; and Himmelroos and Christensen 2014).

[24]In both cases, the inner mean is over *i*, and the outer one over *j*, then *g*.

[25]Collective decision-making may also promote polarization by increasing risk-acceptance (Sunstein and Hastie 2015). Or by increasing homogenization, if the movement toward the group mean is concentrated among group members with weaker, less firmly anchored initial attitudes, presumably including those between .5 and $\bar{A}_{gj1}$ and those held by the disadvantaged.

[26]Some DPs have had midway measurements, but only via confidential questionnaires. The participants have no way of knowing the results.

[27]A number of DPs have had policy consequences, affecting subsequent decision-making by other bodies. But the DPs themselves entailed no conscious, collective decision-making.

[28]The survey houses have included the National Opinion Research center (NORC) at the University of Chicago; the Survey Research Center (SRC) at UC-Berkeley; Social and Community Planning Research (SCPR), now the National Centre for Social Research (NCSR) in the U.K.; Polimetrix/YouGov; and Knowledge Networks.
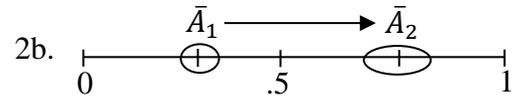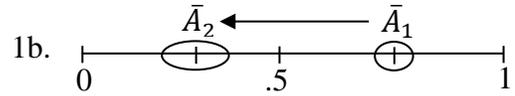
# Figure 1: Illustrating the Definitions
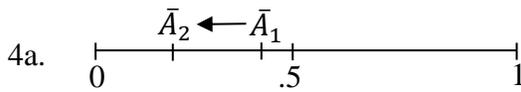
## A. Homogenization/Variegation

**H > 0 (Homogenization)**

1a.

$\bar{A}_2 \longleftarrow \bar{A}_1$

0    .5    1

2a.

$\bar{A}_1 \longrightarrow \bar{A}_2$

0    .5    1

**H < 0 (Variegation)**

1b.

$\bar{A}_2 \longleftarrow \bar{A}_1$
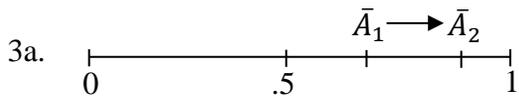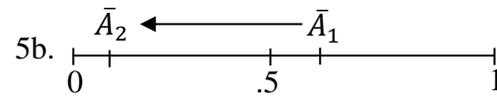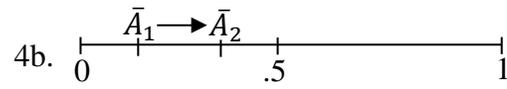
0    .5    1

2b.

$\bar{A}_1 \longrightarrow \bar{A}_2$
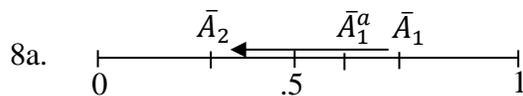
0    .5    1
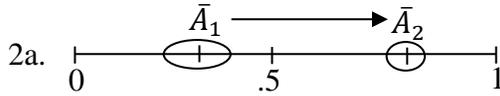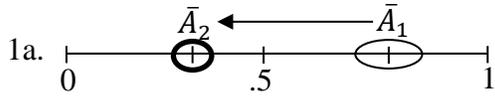
## B. Polarization/Moderation

**P > 0 (Polarization)**

3a.

$\bar{A}_1 \longrightarrow \bar{A}_2$

0    .5    1

4a.

$\bar{A}_2 \longleftarrow \bar{A}_1$

0    .5    1

**P < 0 (Moderation)**

3b.

$\bar{A}_2 \longleftarrow \bar{A}_1$

0    .5    1

4b.

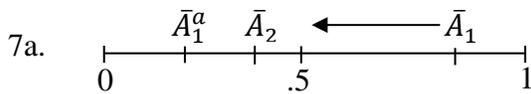$\bar{A}_1 \longrightarrow \bar{A}_2$
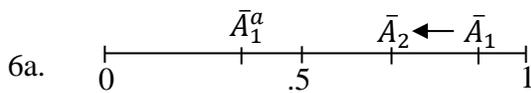
0    .5    1

5b.

$\bar{A}_2 \longleftarrow \bar{A}_1$

0    .5    1
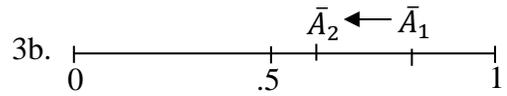
## C. Domination/Repulsion

**D > 0 (Domination)**

6a.

$\bar{A}_1^a$    $\bar{A}_2 \longleftarrow \bar{A}_1$

0    .5    1

7a.

$\bar{A}_1^a$    $\bar{A}_2$    $\longleftarrow \bar{A}_1$

0    .5    1

8a.

$\bar{A}_2 \longleftarrow$    $\bar{A}_1^a$    $\bar{A}_1$

0    .5    1

**D < 0 (Opposition)**

6b.

$\bar{A}_1^a$    $\bar{A}_1 \longrightarrow \bar{A}_2$

0    .5    1

7b.

$\bar{A}_2 \longleftarrow \bar{A}_1$    $\bar{A}_1^a$

0    .5    1
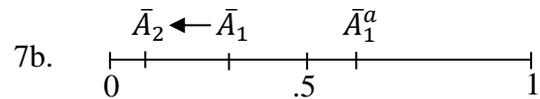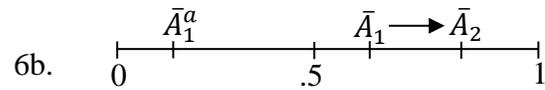
**Figure 2:** $H^O_{gj}$, $P^O_{gj}$, and $D^O_{gj}$ and the Corresponding $H_{gj}$, $P_{gj}$, and $D_{gj}$



**Scenario A**

$s^* < s_1$

**Scenario B**

$s_1 < s^*$

1. $H^O_{gj}$ and $H_{gj}$

$A^* < A_1$   $A_1 < A^*$

2. $P^O_{gj}$, and $P_{gj}$

3. $D^O_{gj}$ and $D_{gj}$

$A^* < A_1 < A^a_1$ or $A^* < A^a_1 < A_1$   $A_1 < A^* < A^a_1$

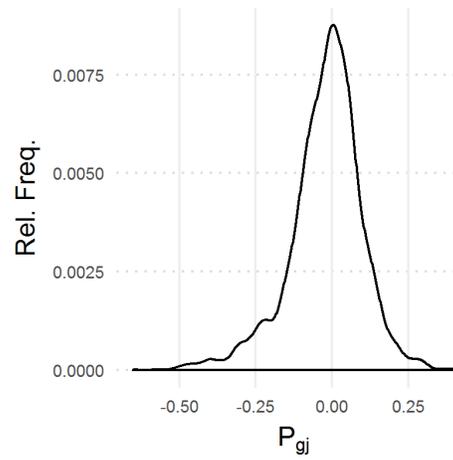3a. $A^* < A_1 < A^a_1$

3b. $A^* < A^a_1 < A_1$
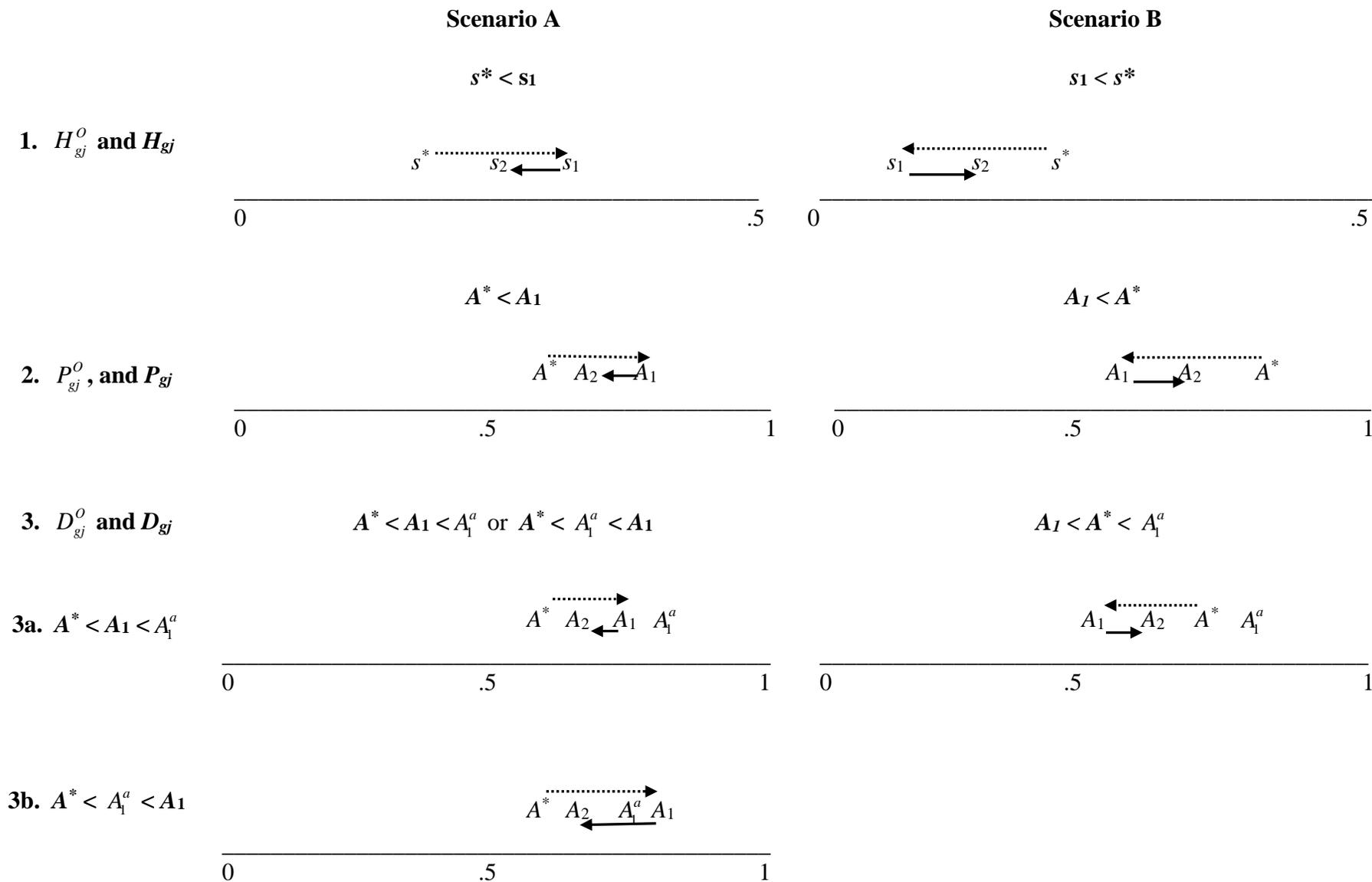
**Note:** $A_1$, $A_2$, $A^*$, $A^a_1$, $s_1$, $s_2$, and $s^*$ are short for the text's $\bar{A}_{gj1}$, $\bar{A}_{gj2}$ $\bar{A}^*_{gj}$, $\bar{A}^a_{gj1}$, $s_{gj1}$, $s_{gj2}$, and $s^*_{gj}$. We assume, without loss of generality, that $\bar{A}_{gj1}$ > .5.

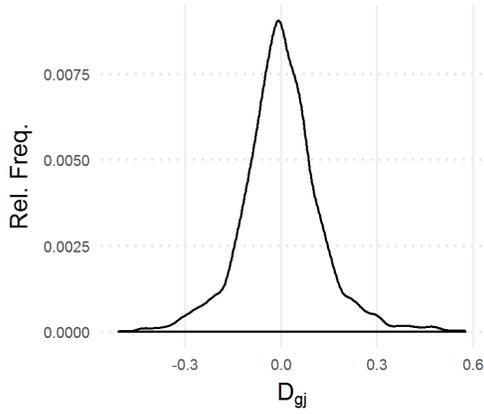**Figure 3: Distributions of Group-Issue Pairs on $H_{gj}$, $P_{gj}$, and $D_{gj}$**
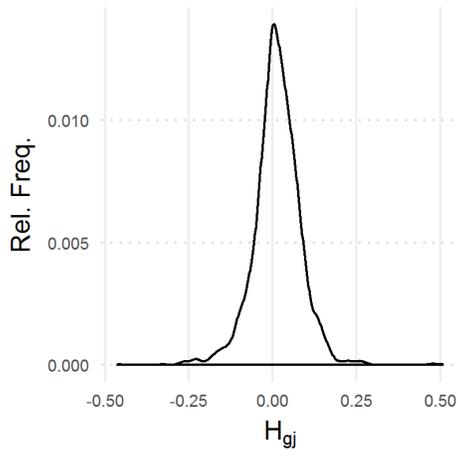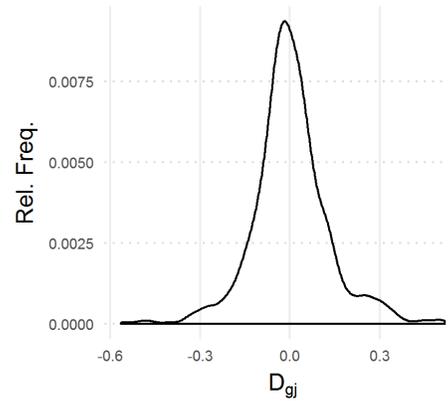
**Table 1**
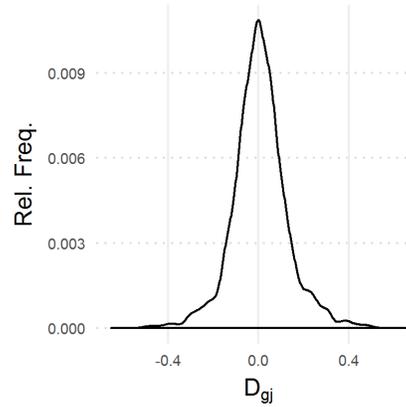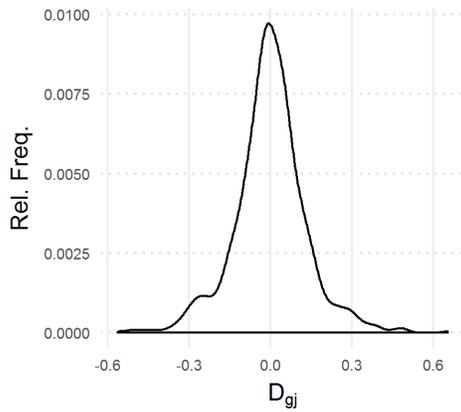**DPs Analyzed**

| Broad Topic(s) | n | Country/ Countries | City/ Region | Year | Mode | Policy Indices | Groups |
|---|---|---|---|---|---|---|---|
| Britain's Role in the EU | 238 | U.K. | | 1995 | F2F | 4 | 16 |
| National Health System | 230 | U.K. | | 1998 | F2F | 11 | 15 |
| British Monarchy | 258 | U.K. | | 1996 | F2F | 4 | 15 |
| UK General Election | 275 | U.K. | | 1997 | F2F | 4 | 15 |
| Making Australia a Republic | 347 | Australia | | 1999 | F2F | 5 | 24 |
| Crime | 299 | U.K. | | 1994 | F2F | 5 | 20 |
| EU Expansion, Pension Reform, Foreign Policy | 344 | E.U.* | | 2007 | F2F | 7 | 18 |
| Meeting future electricity needs | 216 | U.S. | CP&L Service Area[†] | 1996 | F2F | 7 | 16 |
| Prioritizing public works projects | 233 | China | Zeguo Township | 2005 | F2F | 9 | 16 |
| Crime | 278 | Bulgaria | | 2007 | F2F | 5 | 17 |
| Climate Change, Immigration | 348 | E.U.* | | 2009 | F2F | 2 | 25 |
| Future of Airport, Revenue-Sharing | 132 | U.S. | New Haven, CT | 2004 | F2F | 3 | 16 |
| Foreign policy | 340 | U.S. | | 2003 | F2F | 9 | 24 |
| Foreign Policy | 245 | U.S. | | 2003 | OL | 9 | 15 |
| US General Election | 246 | U.S. | | 2004 | OL | 6 | 15 |
| US Presidential Primaries | 434 | U.S. | | 2004 | OL | 3 | 16 |
| Housing Policy | 239 | U.S. | San Mateo, CA | 2008 | F2F | 7 | 26 |
| Health Care, Education | 454 | U.S. | | 2005 | OL | 11 | 30 |
| Meeting future electricity needs | 230 | U.S. | WTU Service Area[†] | 1996 | F2F | 7 | 14 |
| Crime, the family, foreign policy | 466 | U.S. | | 1996 | OL | 9 | 30 |
| Meeting future electricity needs | 232 | U.S. | SEP Service area[†] | 1996 | F2F | 7 | 14 |
| Total | 6084 | | | | | 134 | 397 |

*All (then 27) Member-States.

[†]WTU = West Texas Utilities, CP&L = Central Power & Light, SEP = Southwestern Electric Power.

## Table 2

### Homogenization, Polarization, and Domination:  Occurrence and (Signed) Magnitude

| | Homogenization | | Polarization | | Domination | | | | | | | |
| | | | | | Gender | | Education | | Income | | All 3 | |
| | $H_{gj}$ | $H_{gj}^{b}$ | $P_{gj}$ | $P_{gj}^{b}$ | $D_{gj}$ | $D_{gj}^{b}$ | $D_{gj}$ | $D_{gj}^{b}$ | $D_{gj}$ | $D_{gj}^{b}$ | $D_{gj}$ | $D_{gj}^{b}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | .013 | .595 | -.022 | .454 | .008 | .464 | -.013 | .447 | .000 | .485 | -.015 | .466 |
| s.e | .003 | .017 | .010 | .027 | .004 | .011 | .005 | .012 | .005 | .017 | .007 | .020 |
| *p* | .000 | .000 | .032 | .088 | .031 | .002 | .008 | .000 | .951 | .425 | .029 | .102 |

Note:  In the "Mean" row, the entries for $H_{gj}$, $P_{gj}$, and $D_{gj}$ are the means of those variables ($\bar{H}$, $\bar{P}$, and $\bar{D}$).  Those for $H_{gj}^{b}$, $P_{gj}^{b}$, and $D_{gj}^{b}$ ($\bar{H}^{b}$, $\bar{P}^{b}$, and $\bar{D}^{b}$) are the relative frequencies with which $H_{gj} > 0$, $P_{gj} > 0$, and $D_{gj} > 0$.

## Table 3
## Parsing Domination

### A. Domination by Gender

| | $\bar{D}$ | $\bar{M}^d$ | $\bar{M}^a$ | $\bar{D}^b$ | $\bar{M}^{db}$ | $\bar{M}^{ab}$ |
|---|---|---|---|---|---|---|
| **Mean*** | .008 | .027 | −.033 | .464 | .495 | .440 |
| **s.e.** | .004 | .003 | .006 | .011 | .009 | .015 |
| **p** | .031 | .000 | .000 | .002 | .560 | .000 |

### B. Domination by Education

| | $\bar{D}$ | $\bar{M}^d$ | $\bar{M}^a$ | $\bar{D}^b$ | $\bar{M}^{db}$ | $\bar{M}^{ab}$ |
|---|---|---|---|---|---|---|
| **Mean*** | −.013 | .023 | −.057 | .447 | .523 | .412 |
| **s.e.** | .005 | .005 | .006 | .012 | .015 | .012 |
| **p** | .008 | .000 | .000 | .000 | .018 | .000 |

### C. Domination by Income

| | $\bar{D}$ | $\bar{M}^d$ | $\bar{M}^a$ | $\bar{D}^b$ | $\bar{M}^{db}$ | $\bar{M}^{ab}$ |
|---|---|---|---|---|---|---|
| **Mean*** | .000 | .036 | −.043 | .485 | .521 | .465 |
| **s.e.** | .005 | .007 | .006 | .017 | .017 | .016 |
| **p** | .951 | .000 | .000 | .425 | .203 | .033 |

### D. Domination by All Three

| | $\bar{D}$ | $\bar{M}^d$ | $\bar{M}^a$ | $\bar{D}^b$ | $\bar{M}^{db}$ | $\bar{M}^{ab}$ |
|---|---|---|---|---|---|---|
| **Mean*** | -.015 | .066 | −.031 | .466 | .495 | .455 |
| **s.e.** | .007 | .011 | .007 | .020 | .022 | .019 |
| **p** | .029 | .000 | .000 | .102 | .824 | .019 |

NOTE: $\bar{D}$ is the mean domination ($D_{gj}$), $\bar{M}^d$ the mean movement of the disadvantaged ($M_{gj}^d$) toward the initial mean attitude of the advantaged, and $\bar{M}^a$ the mean movement of the advantaged ($M_{gj}^a$) in that same direction. $\bar{D}^b$, $\bar{M}^{db}$, and $\bar{M}^{ab}$ are the relative frequencies with which $D_{gj} > 0$, $M_{gj}^d > 0$, and $M_{gj}^a > 0$. $\bar{D}$ does not necessarily = $\frac{1}{2}(\bar{M}^d + \bar{M}^a)$, because $d_g$ varies across groups and is likely correlated with $M_{gj}^d$ and $M_{gj}^a$.