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Crowd Cohesion and Protest Outcomes

Abstract: Amidst an unprecedented swell in global protest, scholars and activists wrestle with the question of why protests succeed or fail. I explore a new answer: more cohesive crowds, where protesters agree on their demands, are more likely to win concessions than less cohesive crowds. Drawing on psychology and linguistics, I theorize that cohesive demands are more comprehensible and thus persuasive. I test this theory with a multi-method approach. First, I use cross-national data from 97 protests to estimate the relationship between crowd cohesion and subsequent concessions, applying natural language processing to measure cohesion in participants' self-reported motivations. Second, a survey experiment tests the causal effects of crowd cohesion and assesses comprehensibility of demands as the mechanism driving concessions. Third, case studies of two British protests demonstrate the theory in real-world settings. My findings suggest that activists can improve their odds of success by coordinating around a common goal.

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1 Introduction

The turn of the twenty-first century ushered in "an age of global mass protests" unlike any the world had seen before (Brannen, Haig and Schmidt 2020). From the Arab Spring, to the Occupy Movement, to furor over police brutality in city streets across the United States, protest frequency rose by an annual average of 11.5 percent between 2009 and 2019 (Brannen, Haig and Schmidt 2020, 1). This spike eclipsed previous waves of protest, including the turbulent 1960s. Many of the protests grabbing headlines during this ongoing wave involved thousands of participants, sometimes braving tear gas or worse to voice their grievances and lobby decision makers[1] for concessions ranging from elections to pensions. When does such activism pay off? Under what conditions do protesting crowds win concessions as opposed to coming up empty handed?

Building on existing answers emphasizing protest tactics, crowd size, and other variables (e.g., Brancati 2016; Chenoweth and Stephan 2012; Gamson 1975), this article explores an under-studied influence on protest success: the cohesion of the crowd. When scholars refer to "anti-austerity demonstrations" (della Porta 2015), "democracy protests" (Brancati 2016), or "bread riots" (McFarland 1985), they imply that participants unite around a common objective. But there is an "illusion of unity" (Turner and Killian 1987). In reality, a group of activists is a "bundle of narratives" (Fine 1995, 128): protesters have mixed motives and ways of framing their participation, even in the same throng (Wahlström, Wennerhag and Rootes 2013). In a survey taken at the 2017 Women's March in Washington, D.C., 53 percent of protesters named women's rights as their top motivation, but four other issues were named by more than 20 percent of respondents: general equality (41.5 percent), reproductive rights (23.4 percent), the environment (22.5 percent), and social welfare (21.7 percent) (Fisher, Dow and Ray 2017, 2).

[1]Depending on the context, decision makers could be democratic or autocratic executives, lawmakers, or voters in referenda. The scope conditions of this paper encompass anyone in a position to grant protesters concessions.

Sociologists and psychologists contend that more cohesive groups, whose members largely agree on an objective, are more effective than less cohesive groups (Durkheim 1879/1951; Gamson 1975; Hechter 1987; Zaccaro and Lowe 1988). I extend these prior insights to the study of protest outcomes, hypothesizing that crowds of protesters with more cohesive demands are more likely to win concessions in line with what they nominally want. Drawing on research from psychology and linguistics, I theorize that this is because cohesive messages are more comprehensible, and thus more persuasive. Heretofore, political scientists have focused on decision makers' *strategic* reasons for granting concessions or not: electoral accountability, legal constraints, economic capacity, and so forth (e.g., DeNardo 1985, 39). I argue, on a more basic level, that the process of deciding whether to grant concessions is not just strategic; it is also *cognitive*. Decision makers cannot accede to demands that they cannot understand.

I test the relationship between crowd cohesion and concessions in three interlocking steps. First, I analyze surveys enumerated during 97 protests in Europe and the Americas, which I incorporated into an original dataset containing an indicator of whether protesters subsequently won a concession. For each event, I used word2vec (a technique for natural language processing) to measure cohesion among individual protesters' self-reported reasons for participating. Results uncover a positive net relationship between crowd cohesion and the probability of a concession. Next, I use a novel survey experiment from South Africa to address endogeneity, rule out competing explanations for concessions, and assess the postulated causal mechanisms. Third, I illustrate my theory with qualitative case studies of two British protests that are similar except with respect to the cohesion of protester demands. Combined, my findings point to a causal effect of crowd cohesion via the pathway of demand comprehensibility. Beyond theoretical value, the empirical results offer practical guidance for protest organizers: coordinating a message among activists could enhance the odds of winning a substantial policy concession.

This article makes at least three important contributions. First, it expands our knowledge about state capacity, because state capacity subsumes the ability of incumbents to answer popu-

lar demands that are sometimes expressed through protest (Brambor, Goenaga and Lindvall 2020; Fukuyama 2013). Previous research stressed the importance of information *legibility* for state capacity (e.g., Lee and Zhang 2017; Scott 1998), but I will explain why we should also consider information *comprehensibility* in the form of cohesive protester demands. In the process, I apply psychological theories of comprehension and persuasion to studying protest. While these theories have particular resonance with the literature on state capacity, the cognitive mechanism of comprehension (i.e., the processing of information to extract meaning) applies to any political decision maker, whether a state elite writing a law or an ordinary voter deciding how to weigh in on a ballot measure (McNamara and Magliano 2009, 238).

Second, I demonstrate a framework for political scientists to think about protests: as texts that convey meanings through signs, slogans, attire, and other aspects of the "linguistic landscape" (Kasanga 2014). Framed as a text, a protest lends itself to analysis using tools from computational linguistics. Although interpretive research has long recognized the semantics and semiotics of contentious politics (e.g., Kasanga 2014; Kim and Jang 2020; Lou and Jaworski 2016), I operationalize this notion of protest-as-text by employing word2vec as an innovative way to measure the cohesion of rank-and-file protesters, improving on conventional measures that capture the demands only of protest leaders and spokespeople (Burstain, Einwohner and Hollander 1995, 282).

Third, I compare protester motivations across multiple protests, as opposed to within a single protest as is common in the literature (e.g., Beissinger 2013; McClendon 2014). I thereby bridge micro and macro studies of protest by leveraging both individual-level and event-level data to investigate how the mixture of motivations in a crowd shapes protest outcomes.

2 Theory: Cohesion, Comprehension, and Persuasion

2.1 Group Cohesion and Success

I theorize that cohesion improves protesters' chances of success. By "success," I mean protesters winning concessions in line with their nominal demands. Success is a blanket concept covering various outcomes such as concrete policy reforms, public sympathy toward protesters or their causes, the longevity of groups organizing protests, and more (Gamson 2015, 383). Each of these outcomes requires its own set of explanations. Following other scholars (Cai 2010; Chenoweth and Stephan 2012; Gamson 2015), I focus on a specific question that frequently concerns people who initiate and join protests: Did protesters gain the concessions they sought? The specific concessions in question vary from protest to protest. They might include raising the minimum wage, capping carbon emissions, or legalizing gay marriage.

Like protest success, cohesion is a nebulous phenomenon (Friedkin 2004). Scholars construe it inconsistently as social bonding, attachment to a group, and shared purpose (Casey-Campbell and Martens 2009). I define cohesion as *agreement on a goal*, applying a definition from the literature on party cohesion (Hazan 2003; Sinclair 2003). Similar to what political theorist Sally Scholz (2008) terms "political solidarity," protesters are cohesive when they aspire to a common vision of social change. Adopting this working definition allows me to contribute to broader conversations in political science about the conditions under which groups of political actors are most likely to achieve their mission. My study on the cohesion of protesters complements research on the cohesion of party members (e.g., Hazan 2003; Sinclair 2003) and members of advocacy organizations (e.g., Junk 2019; Mueller 2021).

Durkheim (1879/1951, 159) famously claimed that "a religious society cannot exist without a collective *credo* and the more extensive the *credo* the more unified and strong is the society." Subsequent theorists reiterated the importance of cohesion for group strength (Hechter 1987; Scholz

2008). Substantiating those theories, Gamson (1975, 46) studied 53 activist groups and found, in exploratory bivariate analyses, that 59 percent of single-issue groups won new advantages in line with their demands, whereas none of the multi-issue groups did. In the same vein, laboratory experiments suggest that "shared commitment to the task of the group" enhances group performance (Zaccaro and Lowe 1988).

However, the sum of empirical evidence is mixed on whether cohesion yields success (Mullen and Copper 1994; van Knippenberg and Schippers 2007). Another limitation of the existing literature is that research on cohesion in corporate teams (Kozlowski and Chao 2012), rebel groups (Bakke, Cunningham and Seymour 2012), or lobbying coalitions (Junk 2019) tells us little about the effects of cohesion in protesting crowds, where participants do not, for the most part, repeatedly interact with each other once the crowd disperses. Furthermore, the literature is vague on exactly *how* cohesion influences group success.

2.2 Protest as Text

Why would protesters who agree on a central demand be more likely to effect change than protesters who pursue a hodgepodge of concessions? Assuming there is usually *some* amount of diversity in the priorities of a crowd (Fisher, Dow and Ray 2017), what makes a certain set of demands more persuasive to a target (such as a government incumbent) than another set of demands? *I argue that crowd cohesion conditions the likelihood of concessions by making protesters' demands more comprehensible.* A protest is a text, insofar as it conveys a set of meanings—via phrases written on signs, slogans shouted through megaphones, and an array of subtler messages in the "semiotic landscape" of music, dress, and facial expressions (Lou and Jaworski 2016). Text includes public discourse, not just printed words (McNamara and Magliano 2009, 302). Protest, in particular, impacts the policy process by cueing decision makers to the broad preferences of citizens (Gillion 2012; Fassiotto and Soule 2017, 26). As texts, protests convey demands that a target is liable to misread if protesters send confusing signals.

This reflects a more pervasive challenge confronting state leaders, who are a subset of decision makers that might grant concessions to protesters. Incumbents are constantly seeking meaning from texts. In order to govern effectively, they need to know about citizens and their activities: tax collectors must be able to monitor people's income and wealth, locations, and identities (Lee and Zhang 2017; Scott 1998); policy makers must keep track of people who are eligible to receive public support (Brambor, Goenaga and Lindvall 2020); security forces must know the whereabouts and strength of incipient rebel groups (Lewis 2020, 16). In the parlance of this literature, good governance requires local practices to be "legible."

"In the ideal," protester demands "are clearly articulated such that a state responds based on complete and perfect information about the protesters, their intentions, and their capabilities" (Klein and Regan 2018, 490). But ideal conditions seldom prevail. Protests are irregular, informal, and unpredictable by nature; they are also collective and at times uncoordinated, making individual messages blur together in "the multitude" (Negri and Hardt 2004). Incumbents cannot readily standardize a way for protesters to declare their personal demands like citizens declaring their incomes on tax forms or birth years on census surveys. The targets of protests inevitably grapple with deciphering noisy signals about what protesters want. If "state capacity" refers partly to the state's ability to deliver goods and services and carry out policies that matter to people (Brambor, Goenaga and Lindvall 2020; Fukuyama 2013), then explaining state capacity necessitates studying when incumbents can correctly read the demands of protesters.

2.3 Comprehensibility and Persuasion

One shortcoming of political science on information legibility is that it conflates *legibility* with *comprehensibility* (e.g., Lee and Zhang 2017, 118). Psychologists, in contrast, tend to consider legibility and comprehensibility as distinct, albeit related, concepts. Something that is legible can be perceived (like when one recognizes the image of a cigarette on a sign), whereas something that is comprehensible can be understood (like when one interprets a sign to mean "no smoking")

(Dorris and Davis 2003; Ringseis and Caird 1995; Wogalter et al. 2006). To comprehend is to extract meaning from a written text, an image, or spoken discourse. Comprehension, in turn, enables persuasion (Kaakinen et al. 2011).

Comprehension is "the backbone of cognition" (McNamara and Magliano 2009, 298), affecting how actors make decisions: physicians prescribe treatments by comprehending a patient's symptoms and life history; jurors cast judgments based on how they comprehend a series of events in a legal case; diplomats intervene in foreign affairs using their "cognitive map" of a region (Pennington and Hastie 1988, 521). Comprehension is a process common not just to elites, like presidents and legislators, but also to non-elites, like voters in a plebiscite and protest bystanders. While experienced and inexperienced decision makers do differ along a few cognitive dimensions such as accepting risk and playing iterated games, these differences emerge mainly in complex strategic scenarios—managing international crises, negotiating treaties, sustaining governing coalitions. For most traits that cognitive psychologists have examined, including how people extract essential meanings from text, "there is simply no evidence—one way or another—that experienced and inexperienced samples behave differently" (Hafner-Burton, Hughes and Victor 2013, 370).[2] Political scientists must address comprehension, above and beyond legibility, if they want to explain why all kinds of decision makers heed protesters' demands, or not.

That is because persuasion hinges on comprehension. According to the Elaboration Likelihood Model (Petty and Wgener 1999), the power of a message to persuade a listener to think or act in a certain way depends on how the listener processes the information they receive. Information processing occurs through either a "central route" or a "peripheral route." The *central route* characterizes situations where a listener thoughtfully scrutinizes the arguments they read or hear. A president evaluating a briefing from senior advisors, or a voter reading a guide about a ballot

[2]Elites may be able to comprehend the meaning of protests more *efficiently* than everyday voters (Hafner-Burton, Hughes and Victor 2013, 372), but the elementary challenge of comprehending applies to all groups.

measure, would employ the central processing route.

More relevant to this article is the *peripheral route* of information processing, which describes situations where a listener evaluates arguments without much thought and instead relies on simple heuristics, such as how credible they perceive the message source to be. Rather than carefully analyzing individual protesters' claims, a decision maker responding to a riot in the streets quickly judges whether the protesters seem friendly or hostile and then uses information shortcuts, like slogans and signs, to infer what the major demands are. Journalists similarly deploy peripheral processing to interpret the theme of a protest as "environmentalist," "feminist," "pro-democracy," "anti-austerity," or otherwise. Most research on protest outcomes emphasizes a target's willingness and institutional capacity to grant protesters' demands; regime type can therefore seem like the decisive factor in protesters getting what they want (e.g., Beaulieu 2014; Bosi, Giugni and Uba 2016; Brancati 2016; DeNardo 1985). Though regime type undoubtedly influences concessions, the literature overlooks a more basic reason why decision makers in any regime might grant concessions or not: whether they can understand protesters' demands in the first place. In other words, the process of deciding how to react to a protest is not exclusively strategic; it is also cognitive.

What makes one protest more comprehensible than another? Psychologists pinpoint some heuristics as easier to understand than others. Namely, *cohesive* messages with an unambiguous theme are more credible-sounding, less frustrating to interpret, and ultimately more persuasive than messages that are not cohesive (Kaakinen et al. 2011, 202). A cohesive message contains a high level of overlap between pieces of discourse (i.e., sentences in an essay or slogans in a protesting crowd). Breaks in the discourse are called "cohesion gaps," which force the reader or listener to draw on their own contextual knowledge to fill in the blanks. This is more cognitively demanding than processing a cohesive text, and may be impossible if the reader or listener lacks critical background knowledge (McNamara and Magliano 2009, 312). Protests, which are often unexpected and chaotic, are quintessential low-information environments for a target.

Empirical tests of the Elaboration Likelihood Model support a link between cohesion and per-

suasion. Kaakinen et al. (2011) randomly assigned Finnish subjects to read one of two versions of a text advocating for Finland to join NATO. The high-cohesion version featured clear topic sentences at the start of paragraphs elaborating the argument. The low-cohesion version was identical except that the topic sentences were moved from the start of paragraphs to the middle of paragraphs. Post-treatment surveys revealed that subjects in the high-cohesion group became more favorable toward Finland's NATO membership than their counterparts in the low-cohesion group. In another experiment, Britton and Gülgöz (1991) found that subjects could better grasp an author's intentions after reading a text that had been "repaired" so that that one sentence contained an idea mentioned in a previous sentence.

Returning to the context of protest, demands would be cohesive (and theoretically more persuasive) if individual protesters echoed each other's demands—for example, if most protesters in the crowd were shouting for police reform instead of some shouting for police reform while others called for different concessions like environmental regulation or women's rights. Scholars have tended to analyze only the loudest demands in a crowd (expressed through formal manifestos, public speeches, and media interviews), because conspicuous demands of spokespeople and organization leaders are simpler to measure than the sentiments of rank-and-file participants (Burstain, Einwohner and Hollander 1995, 282). But this ignores heterogeneity among protesters and the tendency for "core" activists to misrepresent the preferences of the masses (Ketelaars, Walgrave and Wouters 2017; Steinert-Threlkeld 2017).

To recap, existing literature suggests that cohesive groups are more likely to meet their goals than less cohesive groups, but it leaves unresolved how that happens or whether the supposed benefits of cohesion extend to protesting crowds. I theorized that cohesion helps protesters win concessions through semantic and cognitive channels: hearing a cohesive set of demands helps targets overcome the fundamental problem of comprehending what protesters want. The next sections present three empirical approaches to test this theory: a cross-national analysis, an experiment, and case studies.

3 Cross-National Analysis

3.1 Measuring Crowd Cohesion with Natural Language Processing

Measuring the cohesion of protesters is not straightforward. Scholars have made little progress in this area over the nearly half century since Gamson (1975, 44) lamented, "There is a fundamental ambiguity in the concept of 'issue' that makes it difficult to address the question of whether groups with multi-issue demands are more or less successful than those with a single demand." It is doubly difficult to gauge the cohesion of ephemeral crowds of protesters, as opposed to more durable social movement organizations. Most protests are spontaneous, at least to outside observers who are not privy to organizing behind the scenes. This normally prevents researchers from sending enumerators to the scene of a protest, forcing them to rely on surveys of intent to participate (e.g., Inman and Andrews 2011; Klandermans 2002), self-reports of past participation (e.g., Mueller 2018), or archived lists of protesters who were arrested, killed, or injured (e.g., Rudé 1964/2005). Such data are susceptible to selection bias, reporting bias, and social desirability bias.

I thus turn to an unusual dataset that emerged from a collaborative research project, "Caught in the Act of Protest: Contextualizing Contestation" (CCC). The project began in 2010 with a consortium of research teams working in six European countries. At the time of writing this article, the consortium was gradually expanding within Europe and to Central and South America. Table 1 lists the countries included in my analysis, and the number of protests observed in each. The CCC project's overarching goal was to gather fine-grained data on who protests and why, from within the mobilizing context. The researchers identified demonstrations involving different organizations, issues, and actors. Coders assigned names to events that were broadly descriptive (e.g., "Climate Change," "No to Austerity"), but did not indicate the composition of the crowds in attendance. As a result, it is possible that only some attendees at a "Gay Pride" rally, for instance, were motivated first and foremost by gay issues.

[Table 1 about here.]

Enumerators distributed 1,000 surveys at each protest, asking people to mail their responses in a pre-stamped envelope. The key survey question was open-ended: "Please tell us why you participated in this protest event?" Response rates usually hovered around 30 percent (van Stekelenburg et al. 2012, 259), resulting in an overall sample of 18,829 respondents (mean of 194 responses per protest). The mail-in nature of the questionnaire meant that the survey was not entirely immune to response bias. However, a detailed analysis of response bias by the survey authors found that response problems did not cumulatively reinforce each other—that is, correlations between bias from various sources (interviewer features, protester attributes, demonstration properties, country) were low across protests. The authors conclude that "the refusal bias engrained in the protest survey design is, in general, not exceptionally large. The encountered refusal-bias problems are neither different nor worse than the problems affecting any type of survey" (Walgrave, Wouters and Ketelaars 2016, 98). Recruitment during the protests virtually guaranteed that all respondents actually protested and received the survey while their memories were fresh. In an effort to obtain a representative sample of a given crowd, a "pointer" accompanied each survey team. After counting "rows" of protesters, the pointer would send an enumerator to interview a specific person in the crowd. The pointer then assigned that interviewer to the next respondent, skipping a predetermined number of rows so as to cover the entire crowd (the exact number of skipped rows depended on the shape of the crowd and whether the demonstration was marching or static) (van Stekelenburg et al. 2012, 258). This avoided the tendency of enumerators to select the most approachable-looking protesters.

I quantify crowd cohesion from the qualitative survey responses with word2vec, a technique that is uniquely appropriate for evaluating the theory of semantic cohesion outlined in Section 2.2. Word2vec uses a neural network to analyze associations between words in a corpus of text (Mikolov et al. 2013). In this study, a corpus is the set of survey responses from each protest, and each survey response in a corpus constitutes a "document." Appendix A (SI pg. 2) pro-

vides a technical discussion of how I implemented word2vec and computed cohesion scores for the protests in my sample. In general terms, this technique calculates the similarity of two documents as the cosine of the angle between two vectors of words. Table 2 provides example pairs of survey responses (i.e., self-reported protester motivations) from a "Climate Change" protest in Belgium. Corresponding cosines denote high, medium, and low levels of semantic cohesion respectively. Semantically cohesive documents often share words, but documents may contain few of the same words and nevertheless convey similar meaning. Natural language processing methods like word2vec have a strong track record in analyzing phenomena ranging from political speech (Klebanov, Diermeier and Beigman 2008) and political events (Radford 2021), to team communication (Dong 2005) and military unit performance (Martin and Foltz 2004). This is the first study, to my knowledge, applying such techniques to measuring the cohesion of protesting crowds.

[Table 2 about here.]

I computed the cohesion of all survey responses from each protest, generating scores that ranged from 0 (least cohesive) to 1 (most cohesive). Among all protests, the mean cohesion score was 0.626 (median = 0.642; SD = 0.209). The most cohesive protest took place in Madrid on September 29, 2010, centering around opposition to a labor law. The least cohesive protest was in Mexico City on October 2, 2011, commemorating the 1968 student massacre but incorporating sundry demands to demilitarize the country, funnel more resources to education, and so on. A march in the Hague against the Dutch government's austerity plan on September 19, 2011 represents the median level of cohesion. Full summary statistics appear in Appendix B (SI pg. 6). CCC coders had already translated non-English survey responses into English; I corrected typographical errors before calculating cohesion.

3.2 Dependent Variable

I used logistic regression to analyze the relationship between crowd cohesion and whether targeted decision makers answered protesters' nominal demands. The dependent variable, *Concession*, was coded from news reports. Two research assistants independently recorded the main demands of each protest, as covered in the media, along with the primary target of each protest (in most cases, the national government) and how that target responded during the three years following the event. I chose three years as the cutoff, because this was the longest period after the most recent protests that provided adequate news coverage for coding concessions (the most recent protest occurred in 2014, and coding occurred in 2018).[3]

I define protest success dichotomously, following precedents in the literature (e.g., Chenoweth and Stephan 2012; Gamson 2015): *Concession* takes a value of 1 if the target granted protesters' nominal demands, and 0 otherwise. For example, journalists described a 2013 protest in the Czech Republic as centering on demands for government officials to be held accountable for corruption and complicity with organized crime (in the CCC database, this protest was labeled "The End of Godfathers"). The prime minister subsequently resigned and was charged with bribery, so the protest received a *Concession* score of 1. Some coding decisions were difficult or subjective. When discrepancies arose, I conferred with the research assistants to resolve them. All sources and coding rationales were meticulously documented.

3.3 Control Variables

The regression models include several control variables that, in addition to crowd cohesion, theoretically determine protest outcomes. These variables are measured in the country and year in which a given protest took place. Research assistants coded them using the same protocol they used to code protest outcomes.

[3] See Appendix C (SI pg. 7) for further comments on setting a three-year cutoff.

Prior studies show that protests are more likely to succeed when they are large (Brancati 2016, 133), nonviolent (Chenoweth and Stephan 2012), and receive international attention (Beaulieu 2014, 108). Following Brancati (2016), I placed protests into categories of *Size*: 0-1000 participants, 1,001-10,000 participants, 10,001-100,000 participants, and 100,001-million participants. *Violence* is a dichotomous indicator taking a value of 1 if protesters resorted to violent actions, and 0 otherwise.[4] *International Attention* is a dummy coded as 1 if a high-profile foreign actor, like a diplomat or a spokesperson for an intergovernmental organization, publicly commented on the protest.

A target's decision of whether or not to grant concessions should also depend on the anticipated costs of conceding or not conceding. Because protesters frequently call for reforms that would strain government budgets, such as higher pensions or cleaner energy, I control for the log of *GDP Per Capita* to capture the financial capacity of targets to satisfy protester demands.

Refusing to grant a concession can also be costly in political terms, especially in more democratic environments where voters have the means of punishing incumbents in future elections. I therefore include an index of *Electoral Democracy*, which measures the extent to which the ideal of electoral democracy is achieved (responsiveness of rulers to citizens, electoral competition, strength of civil society, etc.).[5]

Regardless of regime type, failing to grant a concession can be politically costly if it means reneging on a commitment: "Breaking a promise not only ruins one's reputation, but also mars rapport between parties ... For this reason, there is a cost to breaking a promise in terms of being perceived as untrustworthy in the future" (Wilson 2019, 193). In other words, "dialogic responsiveness" (i.e., a verbal promise) may predict concrete responsiveness (Parthasarathy, Rao and Palaniswamy 2019, 628). I control for whether a target has publicly committed to giving protesters

[4] I exclude violence instigated by authorities, which constitutes repression.

[5] This is the *v2x_polyarchy* variable in the Varieties of Democracy Database (Coppedge et al. 2018, 40).

what they ostensibly want (*Promised Concession*).

Regressions include country fixed effects to control for unobserved country-level variables.

3.4 Regression Results

Figure 1 plots the results of logit models calculating the average marginal effects of crowd cohesion on the likelihood of a concession, with 95% confidence intervals. Rows of results successively add covariates to show how robust the results are to adding controls. For example, the first row includes *Cohesion* and a control for *Concession Promised*; row 2 includes *Cohesion*, *Concession Promised*, and *Size*; the last row is the fully specified model. Figure 1 reveals a robust positive relationship between cohesion of protester demands and the probability of winning a concession in the first three years after the protest.

To facilitate a more intuitive interpretation of results, Figure 2 shows how the predicted probability of a concession changes with increasing levels of semantic cohesion, while holding the probability of *Concession Promised* at its mean and setting the country to Belgium. Raising cohesion one standard deviation (0.209) above average (0.626) corresponds with an increase in the probability of concession from about 20 percent to about 40 percent.

Figure 2 implies that protest organizers should invest in uniting participants around a common goal. Building crowd cohesion could involve, for instance, printing signs with the same message, like in South Korea's Candlelight Protests of 2016-2017, which targeted the unpopular Park Geun-hye presidency. These centrally distributed *sonp'aenmal* (hand placards) helped condense protester voices into one succinct slogan: "Is this a country?" (Kim and Jang 2020, 4). Kim and Jang (2020) describe a social consensus around the meaning of this slogan as expressing outrage over the president's various scandals. The *sonp'aenmal* reinforced a collective identity and conveyed a clear political agenda culminating in Park's impeachment and conviction on corruption charges.

[Figure 1 about here.]

[Figure 2 about here.]

4 Experiment to Assess the Causal Mechanism

My theory in Section 2 posited that cohesive demands are more persuasive because they help targets comprehend what protesters want. To assess that mechanism, I conducted a survey experiment in which I randomized the demands of a hypothetical crowd of protesters to see how varying levels of cohesion influenced two outcomes: 1) *persuasion*, measured as respondent support of concessions for protesters; and 2) *recall*, measured as respondent ability to remember protester demands.[6] According to the psychology literature reviewed in Section 2.3, message *comprehensibility* is a prerequisite for persuasion, whereas how memorable a message is reflects simple *legibility* rather than comprehensibility. If I am correct that crowd cohesion affects the odds of concession through the pathway of comprehensibility, then increasing crowd cohesion should increase the persuasiveness of protester demands but not necessarily the recall of those demands.

In addition to testing the mechanisms of comprehensibility and legibility, this experiment lets me better identify the causal effects of cohesion by controlling for unobserved differences between protests, such as the capacity of organizing groups. The observational analysis in Section 3.4 left the causal relationship between cohesion and concessions ambiguous, because cohesive crowds might emerge in environments that are already conducive to concessions. For instance, there could be a favorable communication infrastructure that both allows for effective protest organizing and lets activists effectively convey their demands to policymakers. It is also possible that incumbents who are relatively accommodating tend to give activists the political leeway to organize effectively, and are likewise inclined to grant protesters' demands. Randomizing crowd cohesion overcomes these inferential concerns.

The sample consisted of an online panel of 1051 South Africans, selected with an effort to

[6]This experiment was pre-registered with EGAP: https://osf.io/dus8w/.

match the national population on age, gender, location, and race.[7] South Africa was an ideal experimental setting because the country, like many in Africa, had recently experienced a wave of protests at the time of enumeration in early 2021. Each respondent read a vignette about protests on a nationally salient issue. The issue was chosen at random, with equal probability, from three possibilities: jobs, education, and the environment. This guarded against the results being specific to one particular issue. All three issues had been the nominal focus of actual protests in contemporary South Africa, and all were similarly non-radical. Each vignette was accompanied by an illustration of the protest, which displayed the slogans that protesters carried on signs. Figure 3 shows an example. Including images, rather than just textual descriptions of protests, addressed a drawback of the CCC survey data, which is that protesters may express personal motivations on a survey that they would not openly broadcast in chants or on signs.

[Figure 3 about here.]

After exposure to the vignette, experimental respondents were asked to imagine that officials had decided to hold a referendum on raising taxes to give the protesters what they want, and then decide how they would vote. Hence, the experiment put ordinary South Africans in the position of decision makers considering whether to grant concessions. This design had three advantages. First, it was more ethical than applying the treatment to elites, whose reactions could have real implications for public policy and service provision. Second, I posited in Section 2 that the cognitive mechanism of comprehension is universal. By testing the effects of cohesion on elites (Sections 3 and 5) and non-elites (this section), I am able to show the generalizability of my theory. Third, using citizen subjects improves the external validity of my analysis, because protesters commonly aim to capture the sympathy of bystanders, not just leaders (Selvanathan and Lickel 2019). Those bystanders may struggle to understand protesters' demands.

[7] See Appendix D (SI pg. 8) for a detailed description of the sample. See Appendix G (SI pg. 11) for ethical considerations.

Each respondent received one of two treatment versions, a cohesive crowd or a diverse crowd, randomized with equal probability within each issue category (Table 3).[8] Under the cohesive crowd condition, slogans on the signs in the illustration had a semantic cohesion score above the mean in my observational study;[9] under the diverse crowd condition, slogans had below-average cohesion scores. I ensured that cohesion scores were similar across issue categories under each treatment condition (exact scores appear in Table 3). Where possible, I paraphrased slogans that actual South African protesters were quoted in the media as having used. For instance, a rallying cry of student protesters was "#FeesMustFall," a hashtag that appeared on physical signs as well as on social media. Because I am interested specifically in the causal effects of semantic similarity, "diversity" in this experiment refers to the phrasing of demands or grievances, not to the demands or grievances themselves. This reflects the protests in the observational analysis, where attendees often cared broadly about the same nominal issue (e.g., the environment) yet had subtly different individual motivations for participating. Thus, for example, a vignette described protesters who all generally demanded environmental protection, but in one treatment condition they express their demand using similar phrasing, and in another condition they express their demand using different phrasing. Figure 3 illustrates the diverse crowd treatment for the issue of education.

[Table 3 about here.]

The main outcome was whether respondents said they would vote in a referendum for a tax increase to give the protesters what they want, which simulated the calculations of a decision maker discerning whether to make costly concessions to a crowd. This variable mimics psychometric indicators of textual *comprehensibility and persuasiveness*, like in the previously mentioned study where subjects who read a cohesive argument for Finland to join NATO evinced more agreement with the argument than subjects who read a less cohesive version of the text (Kaakinen et al. 2011).

[8] Balance tests appear in Appendix E (SI pg. 9).

[9] See Section 3.4.

At the end of the survey, following a series of demographic questions, respondents answered a final question measuring their ability recall the protesters' demands: "Earlier in the survey, you saw an image of protesters waving signs. What was the main concern of these protesters?" Options included education, environmental protection, and unemployment. As in similar psychology experiments (Britton and Gülgöz 1991; Kaakinen et al. 2011), correct answers indicated the *legibility* of demands.

Figure 4 displays estimated effects of the cohesive crowd treatment on a) whether respondents would vote for the tax increase; and b) whether respondents correctly remembered the main theme of the illustrated protests.[10] Cohesive demands had a significant and positive effect on the likelihood of approving the tax hike, suggesting that respondents could understand protesters' demands and found those demands persuasive.[11] Confirming some past experiments (Kaakinen et al. 2011) but contradicting others (Britton and Gülgöz 1991), message cohesion had no effect on legibility.

[Figure 4 about here.]

Figure 5 translates the treatment effects into predicted probabilities, for a respondent fitting the modal characteristics of a Black male with with a secondary school education in the fifth income decile. Receiving the cohesive crowd treatment instead of the diverse crowd treatment increases the probability of voting for a tax increase from 21 to 29 percent. Once again, there is no apparent treatment effect on recall of demands: respondents were very likely (at a probability of 68-69 percent) to remember the broad protester demand categories of education, environmental protection, and unemployment, regardless of treatment condition. But despite remembering the general theme of a protest, respondents were often unpersuaded by the actionable (taxable) policy

[10]Displayed results control for age, race, education, and income. Effects were robust to omitting covariates. See Appendix F (SI pg. 10).

[11]The general protest issue in the vignette (jobs, education, or the environment) had no effect on voting for the tax hike ($p = 0.263$).

demands of the protesters. These results remind us that legibility and comprehension are separate concepts. They imply that someone can fail to comprehend, and be persuaded by, a text even while remembering what the text says in basic terms.

[Figure 5 about here.]

In sum, the experimental results suggest that crowd cohesion affects the likelihood of concessions through the mechanism of comprehensibility, contrary to earlier authors' emphasis on legibility (e.g., Brambor, Goenaga and Lindvall 2020; Lee and Zhang 2017; Scott 1998). My findings corroborate an experiment in which Wouters and Walgrave (2017) manipulated protester demands in a hypothetical news article, which allays concerns that *images* of protesters might have conveyed something besides cohesive messages, such as emergent group norms of behavior. My experiment further indicates, albeit in a simulated environment, that crowd cohesion causes—and does not merely correlate with—a higher likelihood of concession.

5 A Tale of Two Protests

I use a pair of cases to illustrate, beyond the simulated setting of my experiment, how cohesive demands can improve protesters' chances of winning concessions through the mechanism of comprehensibility. Case studies serve to distinguish the characteristic paths that protests can take to success or failure.

I selected two protests, Take Back Parliament and Occupy London, that varied on crowd cohesion and concessions but otherwise resembled each other. Both protests occurred in London around the same time (2010 and 2011 respectively), and were part of a longer series of protests. Both were largely nonviolent, drew comparable turnout, and were organized by groups of similar capacity. However, Take Back Parliament assembled a crowd that was more cohesive than Occupy London. The former protest also resulted in substantial policy concessions, whereas the latter did

not. Evidence from these case studies suggests that the cohesive crowd at the Take Back Parliament protest clearly conveyed protester grievances to targeted policymakers, who were then able to respond with concrete actions. In contrast, the targets of Occupy London struggled to decipher protesters' disparate demands and were thus unable to deliver serious concessions.

5.1 Take Back Parliament

Take Back Parliament (TBP) assembled in the run-up to Britain's 2010 general election with the central mission of replacing Britain's first-past-the-post (FPTP) electoral system with a more representative one like proportional representation (PR). It was a coalition of the Electoral Reform Society, Greenpeace, the New Economics Foundation, Operation Black Vote, the feminist Fawcett Society, and other groups.

Despite bringing together actors with diverse interests (some more directly linked to electoral reform than others), TBP quickly coalesced into a unified voice for dismantling FPTP. There was no mistaking the cohesion of crowds at rallies across the country, which were coordinated through social media. Journalists published images of protesters waving signs with related slogans such as "Honk if u want fair votes," "Fair votes now," "A referendum on fair votes now," and "Safe seats suck." Many signs bore the official TBP logo (Figure 6, left panel), and demonstrators wore purple to signal their unity. Despite borrowing the purple motif from the women's suffrage movement, TBP was so fixated on its central goal of electoral reform that it ignored the issue of women's parliamentary representation almost entirely (Green 2012).

A large TBP protest took place on May 15, 2010 at London's Old Palace Yard, opposite the Houses of Parliament. Several speakers took the stage, including politicians, environmentalists, and comedians. Around a thousand people then processed to 10 Downing Street to deliver their petition to government officials (Marshall 2010).

Almost exactly a year later, Britons took part in the second ever UK-wide referendum, on whether to replace FPTP with an alternative vote (AV) system. This was a major concession to

TBP, and a direct response to the slogans emblazoned on protesters' signs. TBP maintained its unified image and avoided mass mutinies, even as some activists were reluctant to settle for AV, which would mean postponing the fight for full PR (Jones 2011). The referendum ultimately failed, with 68 percent of voters saying "no" to AV. Nevertheless, the referendum itself was a significant gain, keeping electoral reform on the political agenda for years to come.

[Figure 6 about here.]

5.2 Occupy London

Occupy London grew out of Occupy Wall Street, a movement that began in New York in 2011 and spread within a month to more than 950 cities in 80 countries (Adi 2015, 508). The London offshoot, the largest in the UK, involved an encampment and a series of protests spanning roughly from mid-October 2011 to mid-June 2012.

Though the media often described Occupy London—and the Occupy movement in general—as "anti-capitalist" (Davies 2011), activists voiced numerous goals besides dismantling capitalism. An "Initial Statement"[12] listed various demands, including an end to global tax injustice, popular democracy free of corporate interests, regulatory reform, health services, welfare, education, employment, an end to wars and arms dealing, global equality, and climate change solutions. Low cohesion was apparent at protests. The right panel of Figure 6 shows a wall of posters at Occupy London. No two posters are alike in message or design; even those that loosely address the same issue (e.g., "Too big for jail?" and "Outnumbered 99 to 1") use different semantics. Compared with the consistent messages at Take Back Parliament, Occupy London expressed a cacophony of demands.

Cohesion lagged despite the availability of a unifying slogan, "We are the 99 percent," denouncing economic inequality. The slogan "basically fell out of use" amid internal disagreements

[12] https://occupylondon.org.uk/about/about-2/

over whom and what Occupy London represented (Matthews 2019, 1029). An editorialist wrote, "This apparent lack of cohesion has given birth to a monstrous public relations machine, that sends out just enough information to build solidarity while sufficiently scrambling the message so that it can't be shoehorned into a convenient narrative" (Haddow 2011).

People in power had trouble deciphering what the protesters wanted, leading some to dismiss the demonstrations as pointless. Political analyst and sometime Labour Party supporter Dan Hodges characterized Occupy London as a flop "because they didn't really have a message ... From global warming to anti-capitalism to the legacy of Iraq and freedom in Palestine—you name it, there was a protester for it" (Cacciottolo 2012). Conservative MP Mark Field faulted protesters for having "incoherent goals," adding, "Initially they were calling for the end of capitalism, but all they succeeded in was bringing down some of the leading lights in St. Paul's" (Cacciottolo 2012).[13]

Bystanders, whose opinions may have swayed the responses of MPs, likewise found Occupy London lacking in cohesion. One respondent to a YouGov poll remarked, "I think most of the general public were not really clear as to what they were protesting about, and that the messaging and aims were very hazy. The protesters could have done more to spread a more coherent message ..." Another respondent concurred, "The manner of protest ... dilutes and confuses the intrinsic message which may well have a lot of justification and considerable public support" (Blacklock 2012).

Take Back Parliament and Occupy London illustrate the processes leading from crowd cohesion (or the lack thereof) to policy concessions (or the withholding thereof). In both cases, the ability of decision makers to comprehend protester demands was critical.

[13]Referring to an encampment near St. Paul's Cathedral.

6 Conclusion

This article underscored the need for decision makers to not only read the demands of protesting crowds, but also to comprehend them. This cognitive pathway of responding to protest builds upon earlier theories of protest outcomes that emphasize political accountability and the material resources available for delivering concessions.

My findings suggest that in order to change public policies and make state leaders more responsive, protest organizers should aim to recruit like-minded participants, as opposed to casting the widest possible net and forming a diverse coalition. Alternatively, protest organizers can cast a wide net for participants but strive to coordinate diverse protesters *after* recruitment. Some scholars worry that the internet makes coordinating dissent more difficult by allowing protests to happen without formal organizations (Tufekci 2017); autocrats can also repress organizations that try to mobilize protests (Sullivan 2016). But other scholars downplay the role of formal organizations, arguing that diffuse social media can "stitch" protesters into coherent movements (Bennett, Sagerberg and Walker 2014).

Although I show a connection between crowd cohesion and protest outcomes, several questions remain for future research to tackle. First, it would be fruitful to explore the determinants of crowd cohesion, including strategies that protest organizers use to coordinate activists of divergent interests. Ethnographic studies would allow investigators to get "inside" the protest organizing process. Scholars may also innovate ways to measure cohesion and other aspects of the crowd through tweets (e.g., Steinert-Threlkeld 2017) and images (e.g., Casas and Williams 2019). Second, this paper only scratches the surface of the psychology governing how decision makers respond to protest. Lastly, future research would benefit from collecting more granular data from protests, similar to the CCC dataset analyzed in this article. Asking individual protesters what motivates them is a costly, yet crucial, step toward disaggregating the crowd. Surveys taken in the heat of the action can unmask what a protest really is "about," beyond sound bites and headlines after the fact.

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Table 1: Countries and Number of Protests Analyzed

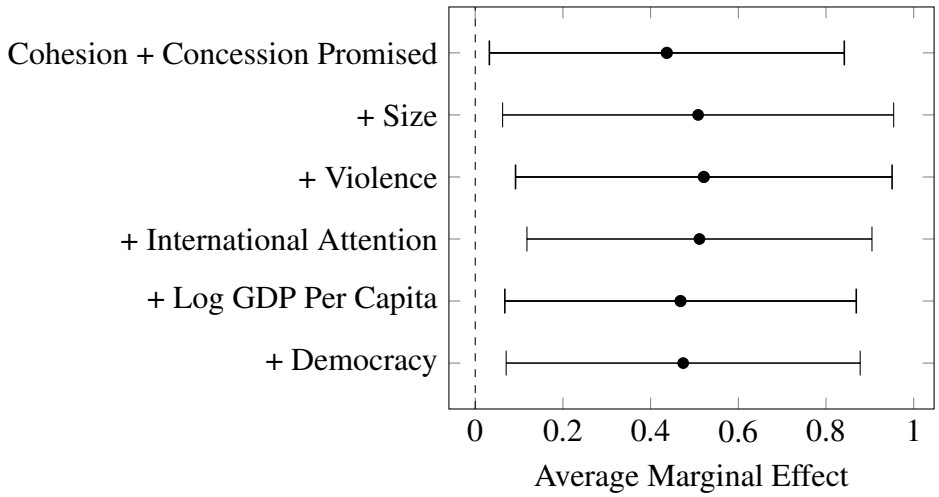
Country	**Number of Protests**
Belgium	10
Czech Republic	12
Italy	9
Mexico	8
Poland	2
Spain	11
Sweden	11
Switzerland	8
The Netherlands	13
United Kingdom	13
Total	97

Table 2: Pairs of Survey Responses (Protester Motivations) from "Climate Change" Protest, with Corresponding Cosine Similarity

Survey Responses	**Cosine Similarity**
I am concerned about the future of our planet. Because I am concerned about the future of our planet.	1.00
To give a signal to the rest of the world. Give a signal to policy makers.	0.50
ACT NOW, before it turns worse. Stop with the contemporary way of consuming, working, producing. We want durable, just and fair development. Because those who lead the world need to change their way of dealing with the earth. The earth exists for billions of years, mankind much shorter, and the last 60 years we are destroying our earth.	0.05

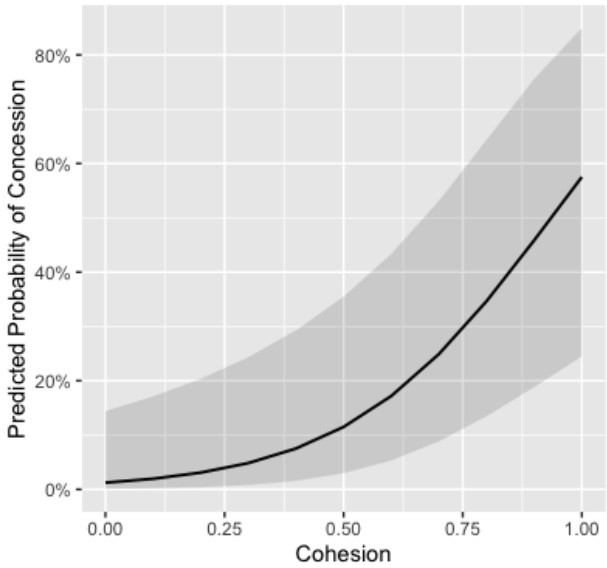
Survey Text: "Please tell us why you participated in this protest event?"

Figure 1: Average Marginal Effects of Crowd Cohesion on Probability of Concession



Points show marginal effects of semantic cohesion of protester demands on the probability of a concession. Bars show 95% confidence intervals. Each row adds different covariates to the preceding row's model. Models include country fixed effects.

Figure 2: Predicted Probabilities of Concession at Different Levels of Crowd Cohesion



Predicted probabilities, with 80% confidence intervals, of a concession at increasing levels of semantic cohesion of protester demands. Probability of *Concession Promised* held at its mean; country set to Belgium.

Figure 3: Example of Experimental Treatment

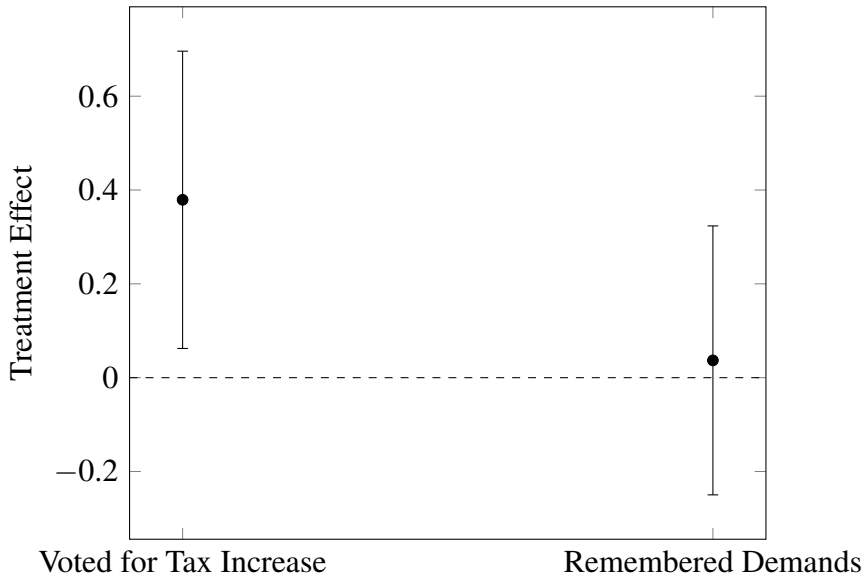
In recent years, South Africans have taken to the streets in protests like the one depicted in the image below. Government officials have debated how to respond, but granting the protesters' demands will cost money. Imagine that officials have decided to hold a referendum on raising taxes to give the protesters what they want. Considering the messages displayed on the protesters' signs, think about how you would vote.

Table 3: Sign Wording by Issue and Treatment Arm

Issue:	Jobs		Education		Environment	
Treatment:	*Cohesive (Cohesion = 0.68)*	*Diverse (Cohesion = 0.42)*	*Cohesive (Cohesion = 0.79)*	*Diverse (Cohesion = 0.53)*	*Cohesive (Cohesion = 0.78)*	*Diverse (Cohesion = 0.50)*
Sign 1 text:	We demand jobs!	We demand jobs!	We demand education!	We demand education!	We demand climate action!	We demand climate Action!
Sign 2 text:	Bring back our jobs!	Raise wages!	Fund education for all!	Decolonise learning!	Stop climate change!	Protect children's futures!
Sign 3 text:	Unemployed and angry!	Justice for workers!	Reform universities!	Justice for support staff!	Protect the environment!	Stop rhino poaching!
Sign 4 text:	Stop layoffs!	Listen to COSATU!*	#FeesMustFall	Listen to youth!	Global warming is real!	Listen to scientists!

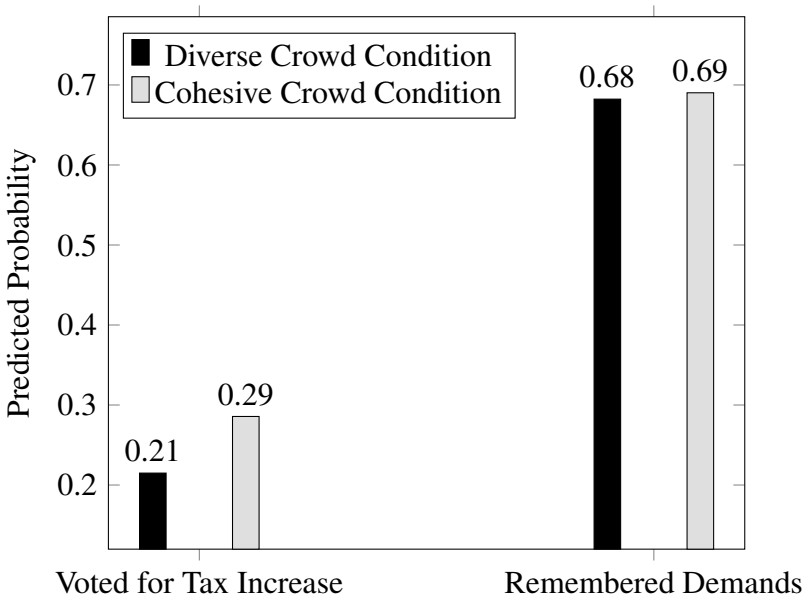
*COSATU refers to the Congress of South African Trade Unions. I calculated the cohesion score of each treatment using the same procedures as in Section 3 and detailed in Appendix A.

Figure 4: Effects of Crowd Cohesion on Support for Concessions and Recall of Main Demands



Points show logit regression coefficients of the cohesive crowd treatment measured against the diverse crowd condition. Bars show 95% confidence intervals. Outcomes are 1) whether a respondent would vote for a tax increase to grant protester demands; and 2) whether a respondent recalled the protesters' main demands at the end of the survey.

Figure 5: Predicted Probabilities of Support for Concessions and Recall of Main Demands, by Treatment Condition



Predicted probabilities for a Black male with a secondary school education in the fifth income decile.

Figure 6: Signs from “Take Back Parliament” and “Occupy London” Protests

(a) Take Back Parliament

(b) Occupy London