

11 Knowledge and democracy

The epistemics of self-governance

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[US President Lyndon] Johnson said, “About this there can be and should be no argument, every American citizen must have an equal right to vote.” Voting is a time when we all have an equal say: black or white, rich or poor, man or woman. It doesn’t matter. In the eyes of the law, and in the eyes of our democracy, we’re all supposed to have that equal right to cast our ballot to help determine the direction of our society. The principle of one person, one vote is the single greatest tool we have to redress an unjust status quo.

(US President Barack Obama, speech to the National Action Network,
April 11, 2014)

The notion that knowledge and power are thoroughly intertwined is an old one. Machiavelli’s *The Prince*, written in the 16th century, perhaps first captured the modern ideal that knowledge can direct the proper application of political muscle. Forty years ago, Michel Foucault observed that the state is, in crucial ways, a knowledge enterprise whose ideas and forms of rationality are as important in creating and controlling subjects and societies as its security arms, setting off an explosion of research on the politics of the state and its many and varied ways of knowing (Foucault 1979; see also, e.g., Rueschemeyer and Skocpol 1996; Scott 1998). Over time, social scientists have argued that society, too, is constituted at least in part via its knowledge practices. Risk society, audit society, information society, knowledge society: all encompass the underlying commitment that the state, its subjects and forms of sociality take shape in the construction and standardization of diverse forms of expert, policy and public reasoning (Beck 1992; Power 1997; Castells 2010; Felt et al. 2007).

In drawing together knowledge and power, however, it is remarkable the degree to which social and political theorists have failed to connect these themes to the modern contours of democracy, as opposed to the state’s capacity to know its domains of authority. That the former should also be significant, as Sheila Jasanoff’s work has so powerfully illustrated (see, especially, Jasanoff 2012, 2011, 2006, 1990), should hardly be surprising. If the state, citizens and society are thoroughly epistemic, can democracy be anything else? Indeed, democracies have proven prolific in establishing forms of

public knowledge and the vast epistemic infrastructures necessary to create and maintain them: statistical agencies, censuses, classification regimes, evidentiary practices, identity databases, surveillance networks, science advisory bodies, computational modeling centers, national laboratories, research universities, news media outlets, the internet, etc. Across these infrastructures, the US federal government alone spends more than US\$100 billion each year on the work of making knowledge to inform democratic governance. The knowledge produced in these infrastructures in turn pervades the practices and institutions of democracy, providing input to decisions, determining resource allocations, holding officials accountable, framing and justifying policies, creating transparency and performing symbolic politics (see, especially, Ezrahi 1990; Wynne 2011). In this, democracies have far exceeded their authoritarian counterparts, for whom the production of public knowledge is carefully controlled and scripted. As large an enterprise as *Pravda* was in the former Soviet Union, the vast news media empires of the United States dwarf it in size and scope.

As Yaron Ezrahi details in *The Descent of Icarus* (1990), the pursuit of all these varieties of knowledge making takes place in support of the ability of democratic publics and their leaders to legitimize public actions: to define and measure the entities of concern to modern societies; to provide a factual basis for identifying, analyzing and deliberating problems demanding collective attention and solution; to make visible and transparent the workings of the state to the citizenry to enable the possibility of accountability. Despite this, theorists of democracy have tended to shy away from a thorough inquiry into the organizational and practical machinery of knowledge production as a crucial site in the making of democracy, including even those whose work focuses directly on the role of knowledge, facts and reason in democratic deliberation and who therefore should in some sense know better (see e.g., Dryzek 2010; Habermas 1984). Even Ezrahi, whose theory of democracy centers on the deep significance of science and technology as resources in the construction of democratic forms of political organization and imagination, has largely neglected the specific social, institutional and imaginative practices through which knowledge gets made and applied. Missing, therefore, from contemporary political theory, aside from Jasanoff's work, is a perspective that positions not simply the state or society but also democracy as a knowledge enterprise.

I want to be clear here that democracy is not simply dependent on knowledge outputs – on the facts derived from science, other forms of rational inquiry or commonsense – although this is certainly true. Rather, this chapter argues in an examination of the knowledge practices of elections that democracy is constituted in the very acts of making knowledge. If knowledge were reliably objective, in the sense philosophers give this word, independent of and uninfluenced by social, economic and political forces, the work of making knowledge would perhaps be of little note or consequence to political theory. But it is not. Instead, the making of knowledge is an outcome of

200 *Clark A. Miller*

social and political processes of negotiation among a variety of stakeholders (Bloor 1976; Latour and Woolgar 1979; Collins and Pinch 1982; Knorr Cetina 1999), and political consequences flow from choices about how to organize the production and application of knowledge (Jasanoff 1990). Even as democratic societies rely heavily on knowledge, therefore, in every aspect of democratic governance – elections, accountability, transparency, law, justice, equality, freedom, deliberation, regulation, security – they also carefully regulate the social and institutional capacity to create knowledge in ways that comport with the normative and pragmatic expectations of democratic societies (Miller 2004; Jasanoff 1996; Hilgartner 2000; Epstein 1996).

Put differently, democracies set limits on the exercise of epistemic power just as they do other forms of political power. Such limits on the routines and practices through which claims to politically significant knowledge get fabricated include a range of constitutional and legislative provisions. The US Constitution's First Amendment protections of freedom of religion, speech and assembly, the Fourth Amendment prohibitions on unreasonable searches and seizures, and the Miranda warnings that police must give to suspects when detaining and interrogating them all work to constrain the state's power to access and control knowledge. More mundane, but no less significant, are laws that guide the formation, provision and use of knowledge in policy decisions, such as the rules laid down for the operation of scientific advisory committees by the US Federal Advisory Committee Act, or the knowledge standards put in place by regulatory agencies in developing evidence of, for example, safe and effective drugs or clean air and water. These kinds of limits suggest that democratic publics and their elected representatives are well aware that how knowledge gets made has potentially deep consequences for democracy.

Democratic modes of governance and their manifold knowledges are, in other words, co-produced: achieved via processes that simultaneously order, in tightly coupled arrangements, both the world and what is known about it (Jasanoff 2004). Democracy is not only a matter of rights, freedoms and the law, but also a matter of *civic epistemologies*: the social and institutional structures and processes through which politically relevant knowledge gets made, validated, synthesized, circulated, applied and given meaning (Miller 2008; Jasanoff 2005). Civic epistemologies encompass the imagination of the forms of knowledge necessary for democracy and the styles of reasoning and standards of evidence preferred for use in legitimating the democratic exercise of power. Just as importantly, civic epistemologies encompass how democracies review and reconfigure the epistemological norms and practices of knowledge making over time and with what consequences for the imagination and practice of democratic ideals, such as the right to vote or the legitimate exercise of power. Deeper scrutiny of civic epistemologies along these lines, I argue in this chapter, is part of the co-production of self-governance: knowing about, authoring and holding accountable institutions that make knowledge as well as those that make politics.

Civic epistemologies and the democratic imagination

In *Imagined Democracies*, Yaron Ezrahi argues that “democracy, like any other political regime, must be imagined” (Ezrahi 2012, 1). In this, he follows Benedict Anderson in observing that, like any nation, the democratic nation is an imagined community: a community envisioned through the creative and productive power of the human imagination to render sensible and reasonable entities whose scope, membership and provenance extend far beyond the individual citizen’s acquaintances and experiences (Anderson 1991).

Yet, democracy is a more complex imagined community than that ascribed by Anderson to the nation – and hence requires more ambitious feats of knowing, reasoning and imagining (Jasanoff and Kim 2009). Nationalism, Anderson argues, imagines the nation as a sovereign political community, limited by social and physical geography and boundaries. The people of this political community are known as a sovereign nation – and so know themselves – Anderson suggests in a chapter titled “Census, Map, and Museum,” through their collective practices for rendering visible their demographics, their territorial holdings and their collective history.

The people of democracies also imagine themselves as sovereign political communities. Yet, in democracy, sovereignty is specifically imagined as belonging to the community: government of, by and for the people. This sovereignty is also, like the nation, limited by geography but also by the need to preserve the freedom of citizens from the coercive exercise of state power. The democratic imagination thus entails knowing not only who makes up the relevant publics in whom sovereignty resides but also how these publics are to form and exercise the sovereign power of government, to what ends that power is to be put, and how the government is to be held accountable to the limits placed on the exercise of its power vis-à-vis citizens and civil society.

Just as significantly, democratic forms of knowing and reasoning cannot belong to the state alone. Rather, Ezrahi observes, democracy places particular emphasis on “publicly accessible facts” that help create a foundation of what he terms “commonsense realism”: the imagined existence of both a shared external reality and a world of real political causes and effects *available to all citizens*. The imagination that such facts exist has been essential, Ezrahi argues, to the foundations of modern democracies:

The socio-epistemological ground for determination of a public and commonsensical world of facts has been the almost universal belief that all individuals actually or potentially live in, experience, and see the same external world. This belief has been crucial for the emergence of an imaginary of the world as a naturalized, universally accessible factual reality creating a neutral referent for the various discourses on truth as well as nonarbitrary political action...a resource of democratic political world making.

(Ezrahi 2012, 106)

Through their imagination of an external reality rendered by publicly accessible facts, Ezrahi argues, democratic publics have constructed a powerful resource for imagining both the entities that make up democracy and the mechanisms and processes through which democracy works. Yet, largely missing from *Imagined Democracies* is a clear answer to a key question: where do publicly accessible facts come from and how is their construction accomplished and maintained? This question is particularly significant in light of Ezrahi's insistence that the imagination of both a body of facts and the externalized world to which they refer are political fictions. How then are we to make sense of how these fictions get made, circulated and sustained in the public consciousness of a society committed to the existence of a "universally accessible factual reality"?

Recent scholarship suggests that the concept of civic epistemologies offers a plausible answer to the question of how Ezrahi's notions of publicly accessible facts and commonsense realism work in practice. Ezrahi observes that one "cannot think, reason, speak, or act, or even begin to experience the world without engaging the faculty of imagination" (Ezrahi 2012, 3). Yet, by the same token, ways of knowing and reasoning about the world likewise frame and shape the exercise and construction of the imagination, especially as they become disciplined, routinized and institutionalized as habits of practice and thought – or granted privileged authority, as for example science has in modern democracies, to describe the underlying common reality of the world collectively inhabited by democratic citizens.

As a repertoire of shared, often institutionalized forms of knowledge making, styles of reasoning, standards of evidence and norms of expertise that govern how publicly accessible and politically significant knowledge should be made, civic epistemologies play a powerful role in constructing the facts that underpin democratic imagination. Civic epistemologies are culturally specific, drawing on what Sheila Jasanoff terms sociotechnical imaginaries: "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff 2015; on the cultural specificity of forms of knowing, see also, Hacking 2002; Knorr Cetina 1999). Civic epistemologies thus produce situated knowledge (Haraway 1988) – knowledge that both shapes and is shaped by the social and political context in which it is made – used by democratic societies in turn to defend, legitimize and critique the exercise of power in democratic societies (Ezrahi 1990).

Civic epistemologies sit at the interface between democratic imaginaries and forms of social and institutional organization through which democratic societies put their imaginations into practice. Civic epistemologies take shape in the ways that democratic publics imagine that knowledge should be made and put to use, as an integral element of democratic governance. Yet they also reside in the social and institutional practices of those who make knowledge: researchers, statisticians, analysts, evaluators, ballot counters, etc. They reside

in the practices of democratic institutions that assess and review politically salient knowledge making. These practices can differ markedly from public expectations (a recent illustration of this can be seen in the “Climategate” controversy, when emails released by a hacker revealed internal debates among climate scientists that did not look to public observers as they imagined scientific debates should; see Hulme 2009). How societies interrogate, make sense of and resolve these tensions between the imagination and practice of knowledge making can contribute significantly to understanding what makes civic epistemologies work – or not – as a foundation for publicly accessible facts and public reasoning as a basis for democratic governance.

The making of electoral knowledge and democracy

Elections offer a powerful illustration of the tensions that arise between public imagination of knowledge making and its routine practice. Elections – and their capacity to produce publicly accessible facts – are crucial to the democratic imagination. To the extent that they succeed in producing vote totals that citizens take to be reliable, accurate and objective measures of the public will, elections go a long way to constituting and reinforcing the democratic imagination. With such facts in hand, citizens can confidently imagine themselves as participants in and witnesses to the sovereignty of democratic publics: choosing and holding accountable their elected representatives, subjecting powerful officials to the rule of law and accomplishing peaceful transitions of power. Knowledge that every citizen has had the same opportunity to cast and have counted an equal vote to determine who will hold powerful elected offices is equally significant, as the epigraph to this chapter suggests, in helping to enable and persuade citizens to see *themselves* as equal to one another. Elections are thus epistemic as well as political institutions, in which publicly accessible facts help convey the message to citizens that the ideal of self-governance is real, in which democratic publics collectively act to authorize the formation of governments made up of the representatives they have elected. Given all of this, it is hardly surprising that elections often comprise the foundational political institutions in the public imagination of democracy.

By contrast, when elections fail to produce publicly accessible facts – when publics call into question the accuracy of the vote totals produced by elections, the degree to which they reliably reflect the public’s views, or the equality of citizens’ rights and opportunities to vote – the results can erode these same foundations of democracy. Contested elections, such as the 2000 US presidential election in Florida, raise troubling questions about the disenfranchisement of voters (Bowker and Star 1999), as well as the capacity of electoral practices and technologies to reliably count votes and secure vote-counting routines from political manipulation, especially in close elections (Miller 2004; Lynch 2001). Gerrymandering by political parties – efforts by parties to redraw the boundaries of electoral districts to create more favorable conditions for the election of their candidates – creates skepticism that

elections create winners who fairly represent broad publics rather than narrow minorities. So, too, do ongoing political tussles over rules that make it easier or harder for various groups of people to vote. Perhaps most corrosively, enormous flows of money into elections leave many wondering whether elections are being won or bought. All of this contributes to public distrust: a fear that vote totals represent less the will of the public than outcomes predetermined by those who already hold power. As a result, today, in the United States, many believe that elections are at best a corrupt version of the democratic ideal they imagine elections should be.

Publicly accessible facts – and their production in the civic epistemologies of elections – thus sit at a crucial juncture between the fiction and reality of election performance. In the democratic imagination, elections produce knowledge via an objective count of the votes cast that can be used to determine the election outcome, at least insofar as the final totals indicate clearly who received the most votes. Achieving this takes routines, methods and technologies for accurately counting ballots. It also requires rules and practices for elections that protect electoral processes from political manipulation. The democratic imagination of elections does not allow for candidates to coerce or buy votes, for those ineligible to vote to do so, or for those eligible to vote to do so more than once. It similarly does not allow for eligible voters to be denied the opportunity, or the right, to vote, for extra ballots to be added to the ballot box, or for ballots to be removed.

For elections to perform according to the normative commitments of democratic societies thus entails the complex interweaving of epistemic credibility and political legitimacy. Accomplishing valid vote tallies – and therefore valid elections – means co-producing both a properly conducted election, properly insulated from political tampering, and a proper casting and counting of the vote, in which each voter casts a proper ballot and all such ballots are properly counted. Elections must perform a dual knowledge function, in other words. They must not only produce information about the number of votes cast for each candidate but also ensure that democratic publics take that information to be a sufficiently credible and truthful representation of the total votes cast for each candidate to be confident in who won. Only if both conditions are met will democratic publics consider the electoral outcome sufficiently reliable to secure their assent to the authority of the new government. The civic epistemology of elections is therefore critical to the performance of the democratic political imagination. Successful democratic elections literally create in the minds of citizens *the fact* of who won as the basis for much more wide-ranging imaginations of the relationship between citizens, their leaders, and the democratic legitimacy of the exercise of power (Miller 2004; see also Ezrahi 2012, 168–70).

Yet, in practice, neither casting and counting ballots nor securing elections from political influence is a simple undertaking. Far from it, especially in US presidential elections, for which more than 100 million individual votes get cast and counted, across fifty states, in a short period of time. The United

States has established vast epistemic infrastructures to accomplish this task. Before the election, administrators in each state screen and certify candidates, design and print ballots, and register voters. On the day of the election, volunteers operate hundreds of thousands of polling places, checking the eligibility of voters, handing out and collecting ballots, and tallying the resulting votes using voting machines. In some states, ballots can also now be cast by mail or at polling places for several days prior to the election. Election officials then sum the individual tallies, certify vote totals for each candidate and declare the winner, news of which is then circulated to publics via media outlets. Altogether, determining the winner of the US presidential election involves a significant fraction of the US population in a massive and complex social and institutional exercise in electoral knowledge production.

Opportunities abound throughout this infrastructure for mistakes, political shenanigans or other inconsistencies to arise between electoral practice and imagination. As the 2000 US presidential election in Florida revealed in detail, vote tallies are at best approximate counts of votes cast. Under a media microscope, observers witnessed poorly designed, misleading ballots, inaccurate voting machines, hanging chads, judges guessing at voter intent, debates over absentee ballots, and legal challenges over a remarkable array of potential election irregularities and shady election practices. Studies after the election showed important discrepancies between the number of ballots cast during the election and the tallies presented as official vote counts (see e.g., Merzer and *Miami Herald* staff 2001). The Caltech-MIT Voting Technology Project found that all vote-counting technologies have error rates, and election routines also fail to count other ballots, resulting in a total number of lost votes ranging from 1.5–2.5% of the votes cast in presidential elections between 1988 and 2000 (Caltech-MIT Voting Technology Project 2001). All told, US publics came away sobered by the experience, knowing a great deal more about how election practices work behind the scenes. Over the subsequent three elections, however, as media scrutiny continued to show voting irregularities, insecure voting machines and attempts to manipulate election rules, that sobriety increasingly turned to anger.

Popular anger over the integrity of voting – whether about vote tampering, gerrymandering, faulty voting machines or other concerns – reflects a perceived gap between the normative commitment of democratic publics to an ideal of what elections should be, and an awareness and acknowledgement of the limits of existing election institutions and practices. Democratic publics are generally aware and even somewhat tolerant of the slippage between the ideal and practice of elections, but not always. This raises crucial questions for democracy. How and under what circumstances does the gap between the fiction and reality of elections become visible, and to whom? What determines the limits to which this gap remains tolerable, and among which groups in society? What means do those who find this gap intolerable use to redress the gap, under what conditions are they successful, and to what extent are those changes tolerated by others?

Answering these questions requires an inquiry into how democracies reach settlements about what makes for credible and legitimate knowledge practices within the civic epistemologies of elections, amidst conflicts to define and police legitimate limits on the exercise of political power in the context of elections. Practices taken as credible and legitimate at one time may be rejected later as inadequate, or vice versa. At stake in these negotiations is both how democracy is imagined by its publics and what democracy means in practice: the rules and practices through which the state administers the right to vote and, therefore, who gets to vote; the processes through which electoral knowledge practices are scrutinized; and the standards to which they are held accountable.

The dynamics of civic epistemologies

In 2013, the US Supreme Court decided in *Shelby County v. Holder* to declare unconstitutional a key portion of the Voting Rights Act. The roots of this decision lie in one of the most profound and far-reaching constitutional struggles in US history: the 1960s civil rights movement to establish equality for black Americans. That movement produced two major pieces of federal legislation, both signed by President Lyndon Johnson: the Civil Rights Act of 1964 and the Voting Rights Act of 1965. These two pieces of legislation not only set African Americans on equal footing with their white counterparts, at least in law, but also fundamentally transformed US electoral politics. White voters in the South, formerly a solid block of Democratic votes, switched their allegiances to the Republican Party, upending the country's political geography, imagination and calculus. Meanwhile, African American voters became the Democratic Party's most reliable voters, typically giving Democratic presidential candidates 90% or more of their votes.

The 1965 Voting Rights Act was the outcome of a long and violent struggle to secure for African Americans equal rights to vote. The 15th Amendment to the US Constitution, ratified in 1870, soon after the end of the US Civil War, ended the practice of slavery in the South and prohibited federal or state governments from denying citizens a right to vote on the basis of race. Yet, especially in the South, states retained a variety of laws and practices whose concrete effect was to make it much more difficult for black citizens to vote than their white counterparts. For example, many states in the South in the 1950s and 1960s used tests of literacy and education as a *de facto* tool to screen out African American voters. The Voting Rights Act outlawed these practices. It also subjected election laws in Southern states to federal oversight. In the process, it fundamentally changed not only who had the right to vote but also the civic epistemology of US elections: the norms and standards that govern how and with what instruments state election administrators *know* who has the right to vote.

On election day, election officials must know, pragmatically, who among those who present themselves to vote is eligible to do so and who is not. To

accomplish this requires two separate forms of knowledge: knowledge of who is eligible to vote and the ability to match that knowledge to the individuals who present themselves to vote. Today, in the United States, this feat is generally managed through lists of citizens who are registered to vote and practices of voter identification that match individual prospective voters to those lists when they arrive at the polling place. Prior to the election, prospective voters must register to vote. Election officials vet their applications and, if they are eligible to vote, place their names on lists of registered voters. These lists are circulated to polling places and used, during the election, to confirm the eligibility of people who present themselves to vote. Voter identification practices may include matching signatures (on the voter registration card and made by the voter on election day), addresses on official correspondence, picture identification or other strategies.

As suggested earlier, these practices are crucial to both the imagination and practical accomplishment of equality among democratic citizens. Citizens are made equal in the democratic imagination in part through their ability to each cast an equal vote. Exactly who is eligible to claim equality through a vote has long been subject to restrictions, however. Prior to the late 19th century, for example, women in the United States were ineligible to vote. The use of literacy tests in the US South prior to 1965, which required citizens to be able to read and write in order to qualify to vote, illustrates another form of such restrictions. As a result of these tests, African Americans voted in significantly lower percentages in the South than their corresponding presence in state populations. A great deal of the civil rights movement in the South focused on fighting for an equal right to vote, thus ensuring blacks would be fully represented in the election of state governments. As a crucial turning point in that struggle, the 1965 Voting Rights Act prohibited states from using literacy or other tests to exclude any citizen from voting. Intolerance of the gap between democratic imagination – which viewed all citizens as having an equal right to vote – and practices of exclusion in the South had grown too high, and Southern states were forced to adopt new knowledge practices for establishing voter eligibility that did not easily allow for discrimination to continue.

At the same time, the Voting Rights Act created a system designed to prevent state governments from finding other creative ways to exclude black voters. The law accomplished this by changing another element of the civic epistemology of US elections: the procedures by which the public and its governmental representatives might *know* whether a proposed change to election law was discriminatory. The system introduced by the Voting Rights Act was termed *preclearance*, and it required that states submit any future changes to election rules to the US Department of Justice for review and approval prior to their implementation as state law. Before the Voting Rights Act, those seeking to learn whether a proposed new rule was discriminatory (and therefore unconstitutional) would have had to wait until after the rule had been implemented, then to sue to have the courts assess whether it did, in

fact, result in discrimination. Thus the Voting Rights Act shifted the civic epistemology of US elections from an evaluative epistemology that assessed the actual impacts of rule changes *after they were implemented* to a pre-implementation anticipatory epistemology based on forecasting the potential future impacts of proposed rule changes *before they were implemented*.

In establishing a preclearance requirement, the Voting Rights Act also reorganized epistemic power within electoral civic epistemologies. According to the US Constitution, the rules governing elections – including how elections fashion and apply knowledge of voter eligibility and regulate the casting and counting of ballots – fall within the jurisdiction of state governments. By granting preclearance authority to the US Department of Justice, the Voting Rights Act transferred power to the federal government to oversee these rules in order to enforce the 15th Amendment ban on racial discrimination in elections. Federal power was limited by the Voting Rights Act to those states with a history of voter discrimination and a clear and current record of discrimination in 1965. Those states were put on a list and subjected to preclearance. Other states were not. Even with this limitation, states subject to preclearance objected to what they saw as a federal power grab. Almost immediately upon its implementation, the state of South Carolina (which was on the list of states subject to the provision) sued to have the Voting Rights Act overturned as unconstitutional. In a 1966 decision, *South Carolina v. Katzenbach*, the US Supreme Court upheld the Voting Rights Act and its preclearance condition as the law of the land, arguing that federal intervention was legitimate so long as federal power could be seen as a rational pursuit of the goals of the 15th Amendment, justified by evidence of voter discrimination and used in such a fashion as would reasonably be expected to reduce that discrimination.

The 1965 Voting Rights Act authorized preclearance for five years. Over time, Congress reauthorized the Voting Rights Act numerous times, most recently in 2006. Each time, they reauthorized the preclearance requirements, using the same standards as in 1965 to establish which states were subject to preclearance. At the same time, the Voting Rights Act worked. Voting practices changed radically in the South, with blacks coming to vote in similar percentages to whites across the region in the elections leading up to the Act's 2006 reauthorization. As a result, Southern states, which tracked developments in voting patterns closely, increasingly viewed preclearance as an illegitimate burden whose application was irrational, no longer justified by problems of voter discrimination or exercised in a manner designed to solve those problems. This discrepancy fueled political opposition to reauthorization of the preclearance requirements, and when the legislation passed anyway, Shelby County, Alabama, filed suit against US Attorney-General Eric Holder, asking that the law be declared unconstitutional. That suit ultimately reached the Supreme Court as *Shelby County v. Holder*.

In a controversial 5–4 decision, written by US Chief Justice John Roberts, the Court ruled in *Shelby County v. Holder* that *preclearance as authorized in*

the 2006 reauthorization of the Voting Rights Act was unconstitutional. In its deliberations, the Court reviewed, once again, key aspects of the civic epistemology of US elections. Both Roberts's majority opinion and Justice Ruth Bader Ginsburg's dissent for the four opposing justices concurred that a key question posed by *Shelby County v. Holder* was one of how much knowledge, and what kinds, was necessary to justify federal intervention in state law in the arena of elections. Both opinions agreed that the answer was that substantial knowledge and evidence of discrimination was required to justify federal intervention in state election law. Congress, both agreed, must inform its decision to insist on preclearance of state or local election rules with a thoroughgoing review of whether or not discrimination exists. Both opinions also acknowledged that Congress had, in fact, done enormous epistemic work preparing for the 2006 reauthorization of the Voting Rights Act, compiling thousands of pages of data and testimony regarding the presence of discrimination in state election law.

Where the majority and minority opinions disagreed was on whether Congress had appropriately used the evidence in front of it to craft a suitable remedy to discrimination in voting. To some degree, the disagreement lodged in what counted as evidence of discrimination. For the minority, evidence of discrimination included not only evidence of ongoing denial of voting rights (which was minimal, both sides granted, since the law had largely worked between 1965 and 2006), but also evidence of the persistence of state efforts to alter local voting rules in discriminatory ways. The minority particularly emphasized the extensive number of cases in which the US Department of Justice determined that proposed state election laws submitted for preclearance were discriminatory. For the Court's majority, these concerns were important but overshadowed by the question of comparative evaluation of discrimination between jurisdictions subjected to preclearance and those left free to establish elections law without interference from the US Department of Justice. The majority was especially concerned with evidence presented to Congress that a number of jurisdictions *not covered* by the formula in the 2006 reauthorization of the Voting Rights Act demonstrated greater discrimination in voting than several jurisdictions *that were covered* by the formula. This discrimination included both higher actual instance of discrimination in elections (e.g., lower percentages of minority voter registration and voter turnout), and significant new rules with discriminatory impact (as determined through court decisions to overturn these rules after their implementation).

For the Court's majority, then, where Congress fell short was in crafting a legislative mechanism justified by its own data. Instead, they determined that in leaving the formula unchanged from the original Voting Rights Act, Congress in its 2006 reauthorization relied on outdated standards that failed to account both for historical developments in the evolution of voting rights and for current conditions in voter discrimination. In declaring that formula unconstitutional, today, Roberts explained that in the Supreme Court's ruling

in *Katzenbach* upholding the original formula, Congress's actions had met the test that its actions be "rational in both theory and practice": "The formula looked to cause (discriminatory tests) and effect (low voter registration and turnout), and tailored the remedy (preclearance) to those jurisdictions exhibiting both" (*Shelby County v. Holder*, 17).

By continuing, in 2006, to use these same standards to determine which states and localities would be subject to federal authority, i.e. the presence of discriminatory tests (which have been outlawed for decades) and low minority voter turnout in 1965, Roberts argued that the new law no longer made sense in terms of cause and effect: "If Congress had started from scratch in 2006, it plainly could not have enacted the present coverage formula. It would have been irrational for Congress to distinguish between States in such a fundamental way based on 40-year-old data, when today's statistics tell an entirely different story" (*Shelby County v. Holder*, 23). The knowledge underpinning Congressional action had become uncoupled from the action itself, creating legislation that no longer made sense in the real world of 2013. In an extraordinary case such as this, where Congress seeks to justify not only the use of federal power to intervene in arenas traditionally left to the states but also its differential use across states, the majority determined, Congress will have to "draft another formula based on current conditions" (*Shelby County v. Holder*, 24).

In rejecting preclearance, at least in the form contained in the 2006 reauthorization of the Act, the Court shifted, once again, the epistemic and institutional bases of electoral civic epistemologies, once more tacking in a new direction in an effort to bring the practice of elections into line with US imaginations of democracy, rebalancing concerns about voter equality with concerns about the rights of states to control electoral knowledge practices. In so doing, the Court not only demonstrated its own power – and that of the US legal system – to excavate, review and reform the knowledge practices of democratic governance, but also catalyzed other political institutions similarly to review and renegotiate electoral law. By reopening prior settlements of a deeply significant and high-stakes political struggle over minority voting rights, the Court has created a new window for political leaders and attentive democratic publics to more deeply and thoroughly revisit and renegotiate key knowledge practices within democratic governance. In the decision's wake, state legislatures, the US Department of Justice, Congress and voting rights advocates have all begun to reconsider how elections regulate the casting and counting of ballots – and how those regulations will be reviewed to ensure compliance with the rights of all citizens to vote. The process is likely to be messy, a common feature of democratic politics. It will result, at best, in a new, temporary settlement that will be subject, over time, to further review and assessment regarding how well it works to create the knowledge necessary for democratic elections. Given that it has been half a century since the initial passage of the Voting Rights Act, it is an exercise that is probably due.

A revolution in electoral knowledge making?

Arguably, the shifting history of the Voting Rights Act reflects the workings of a resilient democracy, capable of placing the implications of electoral knowledge practices for fundamental civil rights under a Congressional and judicial microscope over a period of fifty years, seeking to align the civic epistemology of elections with evolving imagination of the ideals of democratic politics. Both the original Voting Rights Act and the overturning of its preclearance requirements reflect the capacity of US publics and institutions to reinterpret fundamental principles of democracy, to review and reassess the meaning of those principles for how knowledge should be organized and produced, and to reform the practice and organization of knowledge making – via the law – in an effort to make it more consistent with the imagination of democracy.

Sheila Jasanoff observes in *Reframing Rights* that it is precisely in the intersection of knowledge making and law making that contemporary democratic societies engage in “radical restructuring of state-society relations” (Jasanoff 2012, 10). In examining the implications of the modern biosciences for the law, she argues: “Revolutions in our understanding of what life is burrow so deep into the foundations of our social and political structures that they necessitate...a rethinking of law at a constitutional level” (Jasanoff 2012, 3). Elections, like the life sciences, are an arena in which constitutional change happens at the intersection of knowledge and the law. In the hyper-competitive arena of democratic politics, as in cutting-edge biotechnology markets, the struggle for advantage is constant, inevitably stressing temporarily achieved settlements of epistemic and political order. This is what makes vigilance in the critical assessment of knowledge making so crucial on the part of democratic publics and institutions.

Democratic oversight of knowledge making has a tendency to be patchy, however. A critical facet of civic epistemologies is thus the patterning of scrutiny that leads democratic publics and institutions to review certain kinds of knowledge practices regularly while leaving others relatively unexamined for long periods of time, with potentially severe consequences. This patterning of scrutiny can be seen in the application of new technologies for collecting, manipulating, analyzing and communicating election data. The past decade has witnessed widespread applications of information technology throughout electoral systems. The use of new technologies is transforming how votes are cast and counted, how electoral institutions collect, process and communicate information about voting, and how citizens learn about elections, electoral outcomes and the broader political storms that surround them. It is decentralizing computational power, enabling a much broader array of actors to collect, process and interpret electoral data. It is transforming political campaigns through new capacities to collect and use data on prospective voters for fundraising, messaging and turnout operations.

212 *Clark A. Miller*

Consider, for example, the application of information technologies to the administration of elections. Passed by the US Congress in the wake of the controversy over the 2000 presidential election in Florida, the Help America Vote Act has fostered significant changes in US elections. As a result of this law, almost all US elections are now conducted using either optical scan technologies or electronic voting machines, removing older, less reliable machines from service, including the infamous butterfly ballot machines and punch cards used in Florida. The law also required election administrators to create statewide electronic lists of all registered voters. The law thus changed both how votes get cast and counted, and how election officials monitor who is eligible to vote.

These changes have had significant impacts on the knowledge practices of US elections – but have also been subject to considerable examination. For example, many states and counties used resources provided by the Help America Vote Act to purchase direct-recording electronic voting machines, which record votes directly on a touch screen, like a bank ATM. Given the heightened attention paid to voting machines after 2000 – combined with growing public and professional concerns about computer security, alongside an increasing frequency of high-profile, high-visibility computer hacking attacks – this shift toward electronic voting was greeted with extensive criticism. In 2003, a group of computer professionals launched a systematic campaign to bring attention to the security of electronic voting machines and encourage the adoption of new practices of election administration that would ensure both that a paper audit trail existed for electronic voting machines and that voters would be able to verify that their vote was recorded correctly. Lingering public skepticism about the possibility that electronic voting machines may hijack the vote by distorting accurate counts – an invisible, electronic version of stuffing the ballot box with extra votes – continues to be fed by stories of individual voters whose reports of their own experiences in the voting booth or observations at the polls now circulate on social media in the period immediately around election day. Since 2004, such stories – some true, some apocryphal, many of uncertain provenance – have become commonplace during every election. The push for verified voting gained significant ground early, with many states adopting new legislation, yet has subsequently slowed, leaving 17 states that continue to use unverified electronic voting machines for at least some precincts (verifiedvoting.org 2014).

The adoption of statewide electronic voter registration lists, by contrast, has received significantly less attention. The practice has arguably helped standardize and centralize the management of lists and remove duplicate entries, at least within each state. At the same time, according to a recent review by the Brookings Institution and the American Enterprise Institute, the adoption of statewide registration lists has contributed to significant reallocation of power within electoral knowledge institutions, shifting control over the content of registration lists from local to state officials and handing

state election officials – and possibly even state legislatures or governors – the power to purge legitimate voters inappropriately from the rolls, imperiling their right to vote by removing the ability of precinct administrators to know that they are legitimate voters (Fortier et al. 2010). Mitigating strongly against the capacity of democratic publics and institutions to fashion effective voting technology reforms, the review argued, was the highly decentralized character of US election institutions, their highly diverse knowledge practices, and a general unwillingness to create strong national standards and oversight of election administration. At the same time, they praised the emergence of a new community of university and think tank researchers as an important capacity in the United States for pursuing ongoing scrutiny of rapidly changing election technologies.

Two additional areas of ongoing transformation that have received relatively little oversight from democratic publics or institutions are the decentralization of access to data about elections and, in contrast, the centralization of voter data by political campaigns. The decentralization of access to election data is being driven, primarily, by the adoption by election administrators of the practice of disseminating data about election results via the internet and by the widespread distribution of computational capabilities for analyzing those data. Historically, election data were distributed to publics broadly via newspaper coverage of elections and, more recently, in the form of television reporting on election night returns. Today, however, minute-by-minute data releases can and are being tracked by observers on the websites of state election administrations or on major news sites, like CNN.

On par, the wide distribution of election data is probably good for democracy, putting such knowledge in the open and enabling a broad array of observers to track and compute the outcome. Certainly, election laws have always operated on the principle of transparency for electoral vote totals, and knowledge monopolies are no less a threat to democracy than monopolies of wealth or power. Yet, these changes may also have unexpected consequences. As I argued in a previous study of the 2000 US presidential election in Florida, for example, the representation of data to democratic publics is a crucial element in how the civic epistemologies of elections create closure around electoral winners, via a public ritual of electoral concession (Miller 2004). To the extent that viewers of internet election data become similarly enrolled as television viewers or newspaper readers in the performance of assembling vote totals that ultimately construct a winner, closure will continue to happen in the same fashion as before. To the extent that open data allow other alternatives, however, closure may be made more complicated.

Consider, for example, the most recent US presidential election in 2012. Most states posted partial election returns on the internet on an ongoing basis on election night, as vote tallies were completed in individual precincts and counties. This led to a rich proliferation of websites providing aggregated, real-time voting data across the country. Consulting organizations also collected and analyzed the data for a variety of clients, including developing

predictive models of election outcomes based on county-by-county data of each candidate's real-time performance. Several independent efforts constructed and used such models, including both campaigns.

On election night, these models came into play and created one of the evening's most memorable spectacles. Karl Rove, a former Republican campaign manager, served on election night as a commentator for Fox News, interpreting events for the viewing audience. At a crucial juncture, Fox News decided, on the basis of an analysis of a predictive model based on published data from counties in Ohio, as well as data from surveys of voters leaving the polls, to announce publicly that President Obama had won the state of Ohio and, as a result, reelection as president. Rove intervened immediately, on air, saying that he had access to alternative data and models on Ohio voting patterns which disagreed. Mitt Romney, Rove asserted, still had a very good chance of winning the election. Fox News confronted a new uncertainty that undercut their traditional means for helping establish closure to the election. Millions of US citizens watched as the news anchor took her microphone and, trailed by the cameraman, wandered back into the analysis section and, much to the analysts' surprise, asked them if they had confidence in their projections of an Obama win. They did. The spectacle ended at that point with an embarrassed Rove, tarred over the subsequent data with the accusation of using "Republican math." In the end, it amounted to little, but illustrated the power of decentralized data and models to sow confusion and potentially undermine routine mechanisms of closure in US elections.

Consider one last example that has received relatively little critical examination. During the 2012 election, President Obama's campaign operated the largest and most comprehensive voter database initiative in history. In the words of Foucault, biopolitics is ultimately about a "science of government" based in knowledge of "populations" to be understood, through statistics, as a scientifically tractable quantity that states could manipulate and manage through social and economic policy (Foucault 1991, 100). Understood against this conceptual backdrop, the 2012 Obama campaign's deployment of the tools of data mining to identify and mobilize both donors and voters was a major exercise in electoral biopower. Indeed, the campaign launched a Big Data arms race among political candidates that is both ongoing and of enormous potential significance to the future of US elections.

The relatively low turnout of US elections, combined with a culture of vibrant political competition and a two-party, winner-takes-all electoral landscape, has focused campaigns on the problem of mobilizing turnout. While efforts to turn out more of your own supporters to cast votes are largely valorized (so long as the votes are legal), efforts to suppress your opponent's votes are largely frowned upon. Data-mining technologies have been developed in the past decade specifically to aid in voter mobilization. At its heart, the Obama Big Data machine was built on a few simple principles. Build an enormous database of voters containing as much information as possible about their voting history and consumer preferences. Test,

experimentally, varieties of political messaging among potential voters, focused on both voting for Obama and donating to the campaign. Use these tests to parse the voter database into multiple groups, each of which can be targeted using group-specific advertising strategies. Using further experiments, refine the campaign's messaging and voter-sorting rules to optimize engagement of voters and donors. As voting begins, track votes cast in key states and districts. Use all of the information available from micro-targeting of individuals, neighborhoods and regions for get-out-the-vote operations. Adapt and refine the database after the end of the campaign for use in future elections and other opportunities for political mobilization.

The danger of these strategies lies both in the specifics of the Obama campaign data initiative – Obama has, after all, presided over a presidency that has exploited the power of Big Data far greater than any prior Executive Branch in US history – as well as in the future operation and regulation of comparable initiatives in future campaigns. The recent book *Nudge*, by Thaler and Sunstein, for example, highlights the power of new technologies for structuring choices by taking advantage of psychological tendencies and expectations. By marrying potentially manipulative variants of nudge-like techniques with the micro- or even individual-level tailoring of political messaging created by big data operations, the Obama campaign arguably expanded the envelope of voter mobilization into questionable territory – and certainly set off an arms race with Republicans to expand data operations further in future elections. Moreover, the campaign pursued this operation in secret. Part of what restrains fraudulent political advertising is the public nature of a television or radio advertisement and the opportunity for the opposing campaign, media analysts or public observers to critique the advertisement's use (although this is changing on internet and mobile platforms where advertising is much more personally tailored). By contrast, the Obama campaign's data initiatives operated largely behind closed doors and used messaging technologies, like email, that were not necessarily visible to the general public.

The internal data systems used by campaigns have been important throughout the history of US elections, but since the political machines of the 19th century, have received relatively little scrutiny. Today, it is perhaps time to reverse that trend and to foster public visibility for and deliberation of the data practices of political campaigns. Transparency has long served as a crucial tool for revealing the illegitimate actions of political institutions and processes. In the case of authoritarian governments that nonetheless use elections to buttress their own political authority and legitimacy, discrepancies between the imagination and performance of elections merely cover up the insidious and illegitimate exercise of power. By revealing via heightened scrutiny the ways in which the civic epistemologies of elections intertwine knowledge and power, democratic publics may be better positioned to protect the possibility of self-government, even as they will have to work harder to negotiate shared politico-epistemic settlements regarding both how to write

the rules that govern electoral practices and how to assure sufficiently reliable vote counts.

Conclusion: tending the gardens of knowledge infrastructure

Democracy, Sheila Jasanoff argues in the opening lines of *Science and Public Reason*, is an exercise in “reasoning together to plan futures which all can see as serving their needs and interests” (Jasanoff 2011, 1). When democracies reason together – when democratic publics and institutions seek to develop and apply democratically authorized ways of knowing as a foundation for democratic decision making – more is at stake than simply an aggregation of individuals or the clash of competing political interests, each seeking benefits for themselves, to be settled by majority rule. In an era of hyper-partisan political competition, dominated by ideologies that lift up markets as the ideal model for social and policy design, the power of reason to construct shared social commitments in democratic societies has taken something of a beating. Yet, as elections illustrate, it remains through enterprises of collective knowledge making, rather than through fisticuffs or tanks in the square, that democracies still construct notions of the common good, resolve disputes, exercise justice and establish a shared identity.

Reviewing the importance of electoral knowledge systems to democratic politics, Yaron Ezrahi argues that in-depth scrutiny of how elections make knowledge has the potential to undermine public confidence in democratic processes, observing: “a minute examination of the electoral process...is always likely to reveal details that might undermine the popular imaginary of the election event as the legitimate cause of government” (Ezrahi 2012, 169). The achievement of reason requires skilled execution: “Like a symphony, democracy has to be performed reasonably well in order to be realized as a political world” (ibid., 1). For Ezrahi, it seems, too extensive an inquiry into the performance of democratic knowledge systems has the potential to reveal gaps between practice and imagination, chipping away at both the credibility and legitimacy of democracy’s necessary fictions.

Ezrahi’s perspective is too narrow. The civic epistemologies of democratic governance are too significant for democratic societies to avoid careful examination of their functioning in the hopes that neglect will preserve the fictions of popular imagination. As the example of *Shelby County v. Holder* and the history of voting rights for African Americans in the United States illuminates, even democratic governments supported by popular majorities can fashion knowledge practices that appear to treat people equally while in reality abridging basic rights to vote. Only through robust social and institutional arrangements for subjecting civic epistemologies to detailed and thorough scrutiny can democracies hope, over time, to reveal these kinds of problems and correct them. This is especially true given that the knowledge enterprises that support democratic governance are always changing and evolving, acquiring new technologies, new methods and new resources – or

losing access to old ones – and being subjected to new norms, expectations and standards of acceptable performance.

The capacity of knowledge infrastructures, and the individuals and organizations that enact them, to create and circulate credible knowledge as a foundation for democratic governance is a key front in the battle over democracy's future. Despite the critical importance of democracy's public knowledge enterprises, however, the United States has too often done a poor job of tending to these infrastructures as gardens of public reasoning and democratic governance. Elections are, in this, an exception. Far too frequently, knowledge systems toil in obscurity in democratic politics, hidden from view. Even significant changes in electoral knowledge systems can receive too little scrutiny, as recent changes in the application of information technologies to electoral knowledge suggest.

Democracies must closely scrutinize the design and operation of all of their knowledge infrastructures, learning to foster, as Ezrahi has suggested, “novel modes of political participation, seeing, criticizing, and legitimating political power and authority” (Ezrahi 2012, 299). These efforts must pursue the construction, maintenance and oversight of knowledge systems that, in the future, shore up the credibility of public knowledge claims and yet remain secure against the co-opting of public reason as a source of illegitimate power and authority in democratic societies. Together, these two goals comprise what might be termed the democratization of knowledge infrastructures. No longer can the tending of knowledge enterprises and civic epistemologies remain invisible to democratic publics. This task deserves our most careful attention as social and political theorists, policy analysts, and citizens.

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