DEBATE ON BRUCE BIMBER'S BOOK *INFORMATION AND AMERICAN DEMOCRACY*
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PRESENTATION

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The Internet, particularly over the last decade, has attracted the interest of a great number of academics, having become a commonplace for many social scientists. Internet penetration levels, together with the variety of tools and services available for its users, are affecting the economic, social and political behaviour of many citizens of societies across the world. In this latter political sphere, specialists have shown interest in the effect of the Internet on citizens' civic engagement, political participation and, generally, on the very political structure of democratic countries.

In this field of research, Bruce Bimber is a prominent figure. His book *Information and American Democracy,* one of his most representative works, is a point of reference for the field. The book introduces concepts such as "information regime", "post-bureaucratic pluralism" and "information abundance", as well as a model for analysing the relationship between information and politics in the United States which have served as a reference for researchers interested in the subject.

The aim of this debate is to discuss, eight years after the publication of this book, the relevance and importance of its fundamental approaches. In addition, we have attempted to revisit those ideas from the present time. Lastly, we have given this debate an international scope in order to enrich it with perspectives and experiences from a varied range of countries. Thus, we have had a heterogeneous and comprehensive group of specialists including Steven Livingston (George Washington University), José Luis García (Universidad de Lisboa), Liu Gang (Chinese Academy of Social Sciences), Lorenzo Mosca (Universitá Roma Tre), David Karpf (Rutgers University) and José Manuel Robles (Universidad Complutense de Madrid). Following the comments of these authors, B. Bimber himself offers a brief review of his work and provides brief responses to the commentators' comments.

Abstract of *Information and American Democracy.*

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Bruce Bimber

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The technological revolution driven by the Internet is on the minds of many people interested in politics now, and it has fueled a lot of discussion about political change and transformation. Without doubt, contemporary technology appears relevant to the changing organization of political interests, to collective action, and, perhaps, to levels of political engagement. But just what shape the changes will take is not yet clear.

A promising route to placing the technological revolution in politics into context theoretically and historically is to set aside the details of specific technologies. Technology changes too rapidly to catalogue in a way that has lasting significance, and it is crucial to avoid making social scientific claims tied to specific software or technological affordances that will likely be supplanted shortly. Instead, one can focus on the nature of political information and communication itself. New technologies matter because they change the distribution and cost of information as well as communication. So one can ask: what is the relationship between changing characteristics of information in society and broad properties of democratic power and practice? This is a question of broad conceptual reach.

From the very birth of the American Constitution, this relationship has been at issue. A widely overlooked aspect of the Federalist argument in 1787-88 for ratification of the proposed Constitution was a theory of political information. While Anti-Federalists argued that the national government would be too remote and distant from publics to be adequately informed, or that it would collapse in complexity if it were made large enough to solve the problem of directly observing the needs of every community, Federalists made a more subtle observation. In no democracy of any size, they argued, can government directly observe the needs of the nation and act on each local fact, one after another. Most information reaching government must be mediated through institutional channels —importantly including state governments, they thought, in the case of the new American democracy. Mediated information arriving from many disparate sources would be superior, Hamilton argued, to first-hand communication and observation, because it would be broader in scope, refined, and filtered. It could be reflexive across competing interests, prioritized, and structured through representative institutions. The new government would not be overwhelmed, as Anti-Federalists argued, but would flourish as the nation's "center of information," commanding a synthesis of information impossible to assemble from decentralized perspectives in a confederation of states. In this way, early American political thought pointed to questions about how the structure of institutions and political organization shapes the quality of information and communication.

These questions would be relevant to several great changes in the course of American political development. On three occasions prior to the rise of the Internet, revolutions in information and political organization occurred, each exhibiting political structures adapting to changing characteristics of information and communication. The first of these coalesced in the 1820s and 1830s, making possible broad political participation organized nationally by the political parties. The developments contributing crucially to this revolution were the spread of the Penny Press newspaper, which dropped the price of news by a factor of six, and the creation of the national postal service to move information around the country. By one estimate, between a third and half of all mail by weight in 1820 was comprised of newspapers being exchanged between news businesses themselves —the first national-scale news system. In 1800, elected officials had little way to understand the nation as a whole, as Hamilton wanted them to, and the "Republican" citizen in Vermont likely had little in common with the "Republican" in South Carolina. By the 1840s, the post office and press together created a political communication system that was crucial to the rise of coherent political identity on the part of citizens and the dramatic rise in voting rates. This system was crucial to the transformation of the early proto-parties. These had formed chiefly as legislative coalitions, but eventually could reach out beyond Congress to conduct political recruitment and mobilization. In short, the availability of a simple press-and-mail information system facilitated the rise and dominance of the political party as the central political intermediary in the US.

The ability of parties to completely dominate political information ended between 1880 and the late 1910s. A different kind of information revolution at that point gave rise to a new political intermediary. This revolution was one of complexity and specialization rather than the ability to distribute coordinated information at the national scale. Industrialization and urbanization led to an explosion in highly specialized information associated with the multiplication of social relationships and interests, as well as economic interdependence and heterogeneity. These vastly increased created political complexity. A central result was the birth of the interest group. While the parties were information generalists who had mastered broad, news-based political communication since the 1830s, the new interest-based organizations were information specialists who rapidly mastered communication linkages between specific public officials or agencies and the multiplying constituencies with a claim in politics —automobile dealers, doctors, booksellers, grocers, Danes, Italians. The kinds of information and communication functions associated with those linkages were not ones that national parties were well suited to perform. The changes did not displace the party system, though Progressive reforms chastened the parties substantially. It fed the emergence of the pluralistic system of American politics, with highly resource-dependent intermediaries brokering important aspects of distribute political communication.

The rise of broadcasting after the middle of the 20th Century has been widely commented upon, and indeed it constitutes a third information revolution. Again, a new technology-dependent possibility arose, namely commanding the attention of national-scale mass audience. This again gave the advantage to new kinds of political structures: highly

centralized, extremely resource-dependent, market-based organizations. In the electoral realm these were the candidate campaign organization linked to for-profit media businesses selling access to the national audience, and more generally the network television news business. The rise of television-centric politics in the US has been more than well documented by scholars, but what has been less well noticed is what this development had in common with previous revolutions: new political structures and a different system of funding political communication adapted to exploit changes in the character of information and communication made possible by technology. It was another case of organizational form and the structure and cost of information moving together.

By the time of the rise of the Internet —the fourth information revolution— a clear pattern was visible in American political development, playing out in new ways the old theme of the Federalist debate about the relationship of information to political structure. Because policy and political influence often does flow to the most well informed, changes in the structure and distribution of political information —more or less directly arising from technological innovation— leads to changes in the structure of political intermediaries. These intermediaries, whether parties, interest groups, community associations, or campaign organizations, adapt and exploit the characteristics of information and communication present during particular eras of American politics. As they do, they reinforce the value and structure of information. These stable arrangements constitute a political *information regime* —particular political organizations adapted to a particular ecology of information and communication. A regime lasts until new forces change the cost, distribution, or other characteristics of information in society.

The main features of the fourth information revolution can be summarized with the term "information abundance:" information that is easily produced by virtually anyone, widely distributed, and cheap or free. This radical development in the political economy of information and communication associated with the Internet is again changing the information ecology, creating new opportunities for adaptation by political organizations. The emerging information regime, whose features are not yet fully clear, is one where pluralistic expression and aggregation of interests is dominant and is highly accelerated compared to earlier times. Politics happens quickly, because friction associated with information and communication costs is greatly reduced. Politics is possible with or without formal organization, which means that an important feature of democracy in the emerging regime is *post-bureaucratic pluralism*: collective action in conditions of information abundance does not necessarily require substantial staff, money, or formalized organization. This breaks patterns of previous information regimes, and as well violates old precepts in social science which are themselves based on observations of old equilibria now disrupted.

In post-bureaucratic pluralism, organizational boundaries are permeable, and informal association and affiliation can replace formal membership. This entails old political organizations doing things in new ways, and nominally organized groups or networks accomplishing things previously the exclusive domain of formal organizations. These

changes do not mean that political parties or traditional interest groups will disappear, just as each of those survived previous information revolutions. It means instead that the organizational landscape for democracy is vastly more complex and no longer adheres well to the rules of the previous information regime, with its mass-media based system and its formalized system of interest groups, and where the accumulation of resources was essentially a prerequisite for political communication.

Many hopeful observers of the Internet and politics have imagined that among the primary consequences of the technological revolution will be an increase in political participation rates. However, the lesson of previous information revolutions is that the most important effects of changes in the nature of information and communication occur not at the individual level but at the organizational one. Information revolutions in the past have dramatically affected how interests are organized and how collective action is structured, and only secondarily, when at all, have they served to boost individual inclinations toward involvement.

In other words, the connection between information and political organization is direct and tight, while the ties between information, knowledge, and behavior at the individual level are complex and contingent. So far, this lesson also appears to apply well in the case of the Internet, where survey data from 1998 and 2000 shows only the most modest of relationships between use of the Internet for political information and such acts as voting, donating money, and attending political events. These relationships are too small and too vulnerable to endogeneity questions to establish that any important changes are yet occurring at this level. It appears, not surprisingly, that the most politically engaged people make the most political use of information abundance. The democratizing effect of new technology in the US arises not from reducing gaps in knowledge or participation across publics, but by diminishing the relationship between resources and information, loosening the dominance of elites on information, and thereby changing who can organize those publics.

The latest information revolution in American democracy is of a piece with those that came before. Information abundance is leading to another revolution in the middle, between the individual and the institutions of the state. The traditional boundaries and structures of organizations are exerting less influence over who has facility with political information and communication, which in turn affects who can shape policy and organize collective action. What may differ from the past is the coherence of the public sphere and the predictability of politics, because this latest information revolution is not replacing one dominant political intermediary with another; it is creating conditions for a shifting competition over political information among a wide-open field of contestants far less constrained than at any time in the past. This is not simply a mater of changes due to technology summing up to make US politics better or worse on the whole, or more or less participatory, but of the evolving character of democratic linkages among citizens and between them and the state.

From Regimes to Ecologies: Globalizing Bruce Bimber's Model of Information and Politics

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Rather than gradual transition, evidence suggests that change in some systems follows radical disruption in equilibria. Niles Eldredge and Stephen Jay Gould, for example, see such a pattern in evolutionary biology.[1] Their landmark punctuated equilibria model, first introduced in 1972, argues that for most of their geological history, sexually reproducing species experience little net evolutionary change. Rapid onset disruptions trigger processes leading to speciation. Political scientists Bryan D. Jones and Frank R. Baumgartner provide a similar explanation for policy processes. Bursts of rapid and often unpredictable policy change punctuate the patterns of relatively long-term policy equilibria.[2] For example, nuclear energy policy in the United States was profoundly altered by the Three-Mile Island incident in 1979; just as the 1989 Exxon Valdez oil spill was a disruption in regulation of oceanic transportation of crude.

In *Information and American Democracy*, Bruce Bimber offers a similar argument for political mediation. Mediation involves the means by which members of a public are linked to broader institutional structures of government. The morphology of mediation reflects the opportunities and constraints associated with a given period of technological development. The four periods of equilibria since the American Revolution have included institutional arrangements, newspapers and postal systems, political parties, complex bureaucratization associated with the rise of industrial capitalism, mass media, and most recently digital information and communication technology. Bimber calls these periods of stasis *information regime*s —adaptations to "a particular ecology of information and communication." He continues, "A regime lasts until new forces change the cost, distribution, or other characteristics of information in society." These new forces are referred to as information revolutions. In short, stasis lasts until a break or punctuation ushers in a new period of equilibria built around new adaptations.

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[1] Stephen Jay Gould and Niles Eldredge, "Punctuated Equilibria: an Alternative to Phyletic Gradualism," in T.J.M. Schopf, ed., *Models in Paleobiology*, (San Francisco: Freeman Cooper), pp. 82-115. Also reprinted in N. Eldredge *Time frames*, (Princeton: Princeton Univ. Press, 1985). See also Stephen Jay Gould and Niles Eldredge, "Punctuated Equilibria: the Tempo and Mode of Evolution Reconsidered," *Paleobiology* 3 (2), 1977, pp. 115-151.

[2] Bryan D. Jones and Frank R. Baumgartner, *Agendas and Instability in American Politics*, (Chicago: University of Chicago Press, 1993).

Modeling the effects of technology on political processes in this way lifts the burden of a Sisyphean effort of keeping up with the latest technology in an effort to understand governance and information. It draws our attention instead to *information regimes* — the broad technological conditions that give rise to particular political opportunities and constraints. In addition to parsimony, Bimber's approach pushes the analysis toward more grounded theoretical contexts such as organizational theory, economics, and (in the current fourth information regime) complexity theory and network theory. It opens up a remarkably robust and rich research agenda. That is why his argument has continued to inspire new research, even after almost a decade of new technological and political developments. The remainder of my remarks center on several of the research foci that emerge from Bimber's work.

One of these additional layers of analysis inspired by *Information and American Democracy* involves the scope and scale of collective action. Bimber wants to explain the effects of technology on the nature of mediation over time in the United States. His focus is on longitudinal change in a fixed geopolitical sphere. Approached in this way, Bimber is able to specify the effects of technology over time while holding constant other factors such as culture and constitutive institutional structures. To use an analogy from paleobiology, attention is focused on changes in one species over time. This offers powerful explanatory possibilities, as Bimber demonstrates.

Yet it is important to recognize the tradeoffs found in this approach. For example, approaching information and politics in this way makes it more difficult to see the effects of technological diffusion *across* borders at a single point in time. A cross-sectional approach yields quite different observations. Network scalability across borders in the fourth information regime, for instance, is accentuated when we relax the focus on a bounded geographical area. Rather than regime, a better metaphor here is shifting contiguous ecologies, shape shifting over time in response to "species invasions" from neighboring information ecologies. This is of course the metaphor used by Pierre Levy, whom Bimber credits with inspiring some parts of his argument about information and politics.

If one imagines contiguous zones of varying levels of opportunity and constraint produced according to variation in the diffusion of technological and organizational adaptation, one sees patterns of contrasting mediation that look much more like a map of contrasting ecosystems that cut across state borders. Whereas an information regime is a more or less linear progression over time in a specified geographical space, information ecologies are contested fluid spaces across state boundaries and across time. These patterns are reticulated and uneven, expanding and contracting according to system dynamics. Indeed, one of the defining elements of post-bureaucratic politics is that electronically enabled networks create scalability from local to global significance regardless of the preference of intermediating hierarchical institutions. International newsgathering offers an initial example.

The history of satellite newsgathering is marked by a steady progression in uplink versatility and mobility. What once required tons of equipment operated by a platoon of field engineers is now reduced to, in the extreme, the use of a device that fits in the

overhead luggage compartment on commercial aircraft. This allows for the temporary insertion of high-tech functionality in an otherwise low functionality information ecosystem. It is rather analogous to a viral vector. When a television news crew shows up with a satellite uplink unit to broadcast live from a remote war zone, famine, or natural disaster, in that space and time the opportunities and constraints for mediation are altered, both locally and globally. Local events are scalable to a global audience, including policy makers. This is the basis for the so-called CNN effect, a term that needs to be updated to take into consideration the plethora of other instantaneous global technologies now available. Furthermore, advanced Western militaries insert a much greater set of technological capacities, though usually for very different objectives. Lifting the fog of war and creating situational awareness involves the deployment of advanced tools of information collection and distribution, capabilities usually paired with weapons systems. Despite its narrow application, this example underscores that, when viewed comparatively, contemporary information technologies are no longer containable within state boundaries. Indeed, as Manuel Castells has forcefully argued, information flows across electronically enabled networks are corrosive to state borders.

Rather than an invading army of technologies, sometimes literally, information ecosystems more often evolve from within systems but are catalyzed from without. The proliferation of 5.3 billion mobile phones is perhaps the best example of this evolutionary change over time with cross-border diffusion of disruptive technology. As with an ecosystem, when invading species take advantage of changes in conditions, the boundaries of opportunity and constraint created by these systems tend to ignore boundaries of the state. Voice-over-Internet Protocol and even simple mobile roaming agreements cut across the globe with nominal costs to users. Members of global diaspora are linked with home in both sentimental and practical ways. For instance, sons and daughters in Paris, London or New York pay the utility bills of parents in Africa by transferring credits using M-Pesa and other mobile banking services. Meanwhile, farmers in remote regions of Africa get the daily commodity price reports via text messaging about price fluctuations at exchanges in London, New York, and Shanghai. The point is, from a global perspective, technologies create fluid and nonlinear progressions of political and economic mediation that are not necessarily confined to the borders of the nation state. This opens up the possibility that political opportunities and constraints to collective action are produced by exogenous technological developments, as well as by the sort of indigenous effects highlighted in Bimber's examples. Secondly, post-bureaucratic politics has important implications for not only the nature of mediation within a state, but also for the nature of the state system of global governance.

Technologies facilitate a deeper capacity for nonstate actors to gather information independently of the state. One example of this is the development of high-resolution remote sensing satellites. In 1999 a private company called Space Imaging (now GeoEye) launched the Ikonos remote sensing satellite. Once operational in January 2000, Ikonos ushered in a new capacity technical analysis from space. A nongovernmental organization in Washington called the Institute for Science and International Security used com-

mercial remote sensing data to reveal the Iranian nuclear program.[3] Hundreds of millions of square kilometers of the earth's terrain is now captured by a fleet of high-resolution remote sensing satellites. Objects on the ground well under a half-meter are visible from 400 miles in space. This empowers electronically enabled networks of scientists and activists around the globe to monitor weapons proliferation, environmental effects such as deforestation, desertification, and other visible effects. Multispectral and hyperspectral imaging allows scientists and advocates to monitor even the chemical composition of objects on the ground and the health of plants and ecosystems.

Just as significant are the many derivative capabilities from several nested technologies. High-resolution remote sensing data allows for the precise mapping of the planet. Georectification is the process of matching image data to a set of geographical coordinates so that each pixel of the image is assigned a geographical coordinate. It is this process that leads to the use of precise mapping tools such as Google Maps. Because mobile phone masts are arrayed according to GIS coordinates, the position of a phone can be situated in a geospatial field. Some devices are located by triangulation directly with geographical positioning satellites. These are a few of the elements to an emerging area of electronically enabled collective action called crowdsourcing. Crowdsourcing in turn involves the distribution of small discrete tasks to volunteers across a network. One particular type of crowdsourcing is called event mapping, and sometimes crisis mapping. It enlists thousands of volunteers to contribute information using any number of means of communication. Perhaps most important is the use of mobile phones in crisis mapping. Ushahidi is an event mapping or crowdsourcing platform that emerged in the midst of the post-election violence in Kenya in 2008. Over 45,000 discrete pieces of information were geotagged (situated on a digital map) and posted online. Since then, Ushahidi has been deployed over 15,000 times, most notably as an information gathering and relief and aid coordination platform during the wildfires in Russia in 2010 and the earthquake in Haiti in 2010. In these and other instances, Ushahidi facilitated coordination of self-organizing systems of aid. Word of needed assistance, available resources, and required distribution systems appeared as geotagged locations on evolving digital maps. This offers examples of scalable coordination without the direct involvement of institutions of the state.

As noted earlier, Bimber's focus on information regimes —rather than on specific technologies— offers clear advantages. Doing so offers parsimony and powerful avenues of analysis across several disciplines. Yet if we relax this for a moment and consider the possibility that different categories of technology accentuate relative advantages and

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[3] Steven Livingston and Sean Aday, "Taking the State Out of State--Media Relations Theory: How Transnational Advocacy Networks are Changing the Press --State Dynamic, Media, War & Conflict 2008 1: 99. pp. 99-107; NGOs as intelligence agencies: The Empowerment of Transnational Advocacy Networks and the Media by Commercial Remote Sensing in the Case of the Iranian Nuclear Program, Geoforum, Vol. 40, Issue 4, July 2009, pp. 514-522

disadvantages for collective action, we can see important variation in the relative costs and benefits according to classes of technology. A full exploration of this possibility is beyond the scope of the current response to Bimber's important book, so I will limit my remarks to a few suggestions.

Information communication is only half of the benefit associated with the information technologies that define the fourth information regime. Just as important are the technologies that facilitate the *collection* of information by nonstate actors across geopolitical boundaries. This can be something as simple, yet at times profound as a video captured by one of the 5.3 billion mobile phones found around the planet in 2011. Or it can be as sophisticated as satellite image analysis by independent scientists and analysts looking for signs of nuclear weapons proliferation, ecological damage and change, or even human rights abuses. The movement of displaced persons to new camps can be tracked from space. My point is that information-*gathering* capabilities define particular information ecologies. Political opportunities are created by a new abundance of information gathering as they are from information sharing. Photogrammetry by nonstate actors and event mapping by crowdsourcing are important to collective action for their power to generate information.

Bruce Bimber's *Information and American Democracy* is one of a handful of books that opened the door to a new way of thinking about mediation and information. Rather than loosing its power and analytical acumen over time, it has actually become a springboard for thinking about new questions.

INTERNET, NEW FORMS OF POWER AND DEMOCRACY

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Against the backdrop of the technological revolution of the Internet, Bruce Bimber's reflection questions the relation between the changes in information in society and forms of power and democratic practice. Bimber has no doubts that contemporary technology influences change in the organization of political interests, collective action and possibly levels of political commitment. His questioning is extremely pertinent: we are no more than at the beginning of understanding the enormous implications of the Net and the information revolution in the political sphere (as well as in other innumerable aspects of our individual and collective lives). Although there is already a great deal of research, there is still much more to be done, both theoretically and empirically. And it should be noted that it is necessary to overcome many obstacles to reinvigorate research ideas and paths on the Internet in general, and very specifically on the historical and political sens of the digital technological environment in which we are fast being "plunged" —the liquid and fluid metaphors are a defining characteristic of our times— since the end of the twentieth century. I will return to this topic to conclude my comment.

Building from a historical viewpoint to provide a broad sketch holding the USA as an analytical framework, Bimber argues that the Internet is the fourth information revolution. The first, which took place in 1820-30 and had lasting consequences until 1880-1910, led to major developments such as the propagation of the Penny Press and the creation of a postal service that allowed the movement of information across the country. The postal service and the press had a foundational role in the creation of a political communication system of major importance in enhancing political identity and voting numbers. This system was pivotal to allow the dominance of political parties as key political intermediaries in the USA. The second revolution concerned not the capacity to distribute information in a coordinated manner at a national scale, but of its complexity and specialization. Industrialization and urbanization led to an explosion in specialized information which created political complexity and gave birth to a new intermediary, overthrowing the parties in their ability to control information. This new intermediary was the organized interest group, formed by information specialists dedicated to lobbying for their particular claim in politics. After the mid-twentieth century, a third revolutionary change in information took place with an increase in broadcasting, prompting mass audiences on a national scale. This technologically-enabled transformation created new, very centralized political structures, and a different system for funding political communication which was adapted to explore changes in the character of information and communication.

It becomes apparent that Bimber takes into consideration the role played by technology, including in his reflection the influence of the technological revolution steered by the Internet. Such an approach escapes the trend of most sociological and communication studies, preferring to contextualize the media with social forces and institutions, more than with technologies. This perspective indicates that Bimber does not fear being accused of technological determinism, one of the most abusive and accusatory expressions in social sciences academia of our time. It is obvious that Bimber does not believe that technological determinism is a law ruling human society, here recalling the notion of technological determinism which he called "nomological" in the article "Karl Marx and the three faces of technological determinism" already two decades ago. Still, Bimber's thesis tends towards assigning importance to the nexus between technical dynamism in information, comprehending new media, computer technical systems, information networks, new platforms, and the structure of political intermediaries. The idea underlying his perspective is entirely relevant: a technology is an agent of change in informational ecology and alterations in the latter lead to modifications in political intermediation.

In coherence with his thesis, Bimber argues that the transformation impelled by the Internet —the fourth information revolution— promotes a new information ecology, characterized by "information abundance" (a concept evoking "communicational opulence" by Abraham Moles), which is at the origin of a new regime he calls "postbureaucratic pluralism". Information is easily produced by anyone, as well as widely distributed and cheap or free. The pluralistic expression and the combination

of interests becomes dominant, politics takes place in an accelerated fashion and is possible with or without formal organization. Under information abundance conditions, collective action may forego a numerous body of staff, money or formalized organization. Bimber states it would be wrong to expect from this new regime the disappearance of traditional interest groups and political parties. He also rejects the optimistic view that this new situation leads to an increase in political participation indexes. This results from the fact that the most relevant effect from changes in the nature of information and communication under the influence of information revolutions takes place not on an individual, but on an organizational level. According to Bimber, the fourth revolution does not reduce the divide in knowledge or participation among publics, but does affect the relationship between resources and information, weakening the predominance of elites in information and changing the organizers of these publics. With the Internet revolution, what is at stake is the evolutive character of the democratic connections between citizens and between citizens and the state, instead of technological transformations that lead to greater or lesser participation. Bimber's conclusion is undoubtedly very insightful. Only dreamers can believe there are technical solutions to political motivation and participation. Not all technical possibilities turn into social realities and the directions of change depend heavily on the distribution of power and resources. Studying the influence of the Internet shows how relevant it is to the level of multiplication of information sources, the weathering of the monopoly of media companies, and new discussion instruments. Nevertheless, it also implies problems regarding information reliability, new social limits (the digital divide) and, in particular, the transformation of the public sphere.

In this comment to Bimber's viewpoint, it seems worth mentioning that one should take into account a more profound definition of the differences among media technologies (I say media since they are more widely in question in technological information revolutions which are historically mentioned) and a closer look at the sources of the optimistic thesis. To better understand the reach of Bimber's argument and other issues concerning the relation between information technologies, political communication and democracy, it is necessary to linger a bit more on these two topics. In fact, it is easy to define the media only superficially and any approach to them affects the respective reflection. The media are often placed under a generic notion and taken by utopian visions. If it is erroneous to have an instrumental notion of technologies making them mere means whose consequences depend on how they will be used, it is also risky to talk about technology in the singular while analyzing the influence of a specific technological medium.

The media integrate technology, but it is technologies that hold the singularity of acting on communicational realities generating symbols, meanings and culture, through text, image and sound. Symbols, meanings and culture are maintained and modified not only by institutions and social relations, but also by technical means. Symbols, metaphors, allegories, concepts, culture appear today largely incorporated in different media and information technologies giving them existence and origina-

ting social relations that actualize them. Communication cannot be understood as mere fluxes of information, messages, or content between sender and receiver. In each communicational practice conceptions of the real, forms of expression and social relations are triggered. All technology is part of culture in several senses, but the media and new information technologies are intrinsically "means to think with". More than tools with which we act, they are powerful means through which reality is largely defined. Therefore, what is at stake in the relation between the current communication revolution and the political sphere are not just established ideas of politics and democracy, but the very redefinition of what is politics and democracy. The question of the evolutive character of democratic connections between citizens and between citizens and the state mentioned by Bimber should be seen in all this scope in regard to the implications of new media and information technologies. The new information technologies introduce other forms of political language and political thought, promote the recomposition of battle and alliance fields, and allow the emergence of new groups and forms of domination and authority. More important still: they stimulate the proliferation of indirect relations, in which not only citizens act, but also organizations, powerful institutions and markets.

Information technologies occupy a privileged position in our cultural horizon. They are part of the rhetoric with which we celebrate each introduction of a new technology under the old idea built in the modern West that we fabricate instruments to enjoy their benefits. Technologies linked with information and communication are seen as forces against isolation and disconnection between humans, allies of knowledge and enlightenment as sources of access to reality. The enthusiasm with which these technologies are greeted leads us to mistakenly believe that technical change holds the key to solving cultural, political and social problems. It forgets that more information is not better information, that information is not the same as knowledge, and that democracy cannot be reduced to the production and dissemination of more information. The inclusion of new information technologies in the language of myth, which also happens with the economic and political means that promote them, is a serious obstacle to a rigorous sociological analysis. We need more theoretical work and research on the Internet and its ambiguous influence on all areas of social life. It is not enough to state that the Internet constituted an impressive increase in information in several domains and brought new forms of exchange and discussion. Theory and research still need to explore a wide field of study encompassing the Internet and new forms of power wielded at a distance, the Internet and the implementation of new forms of commerce and the abstraction of money and commodities, the growth of entertainment and, in the strict political field, the Internet and the compartmentalization of the public sphere.

INTERNET: A TECHNOLOGICAL TOOL AND CHANGES IN POLITICAL POWER

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Professor Bruce Bimber gives us a sound description between technology and political power in his *Information and American Democracy: Technology in the Evolution of Political Power*. It is an interesting topic and as the subtitle of the book shows, he is very much concerned with the evolution of technology. Evolution is a big word that could be employed in any situation. Bimber, however, confined this big word to a small area in the world and in an even narrower manner to political power.

America is a young country with advanced technology, especially Internet, which is so popular at present. Bimber's interests also focus on the new technology with what he called *post-bureaucratic pluralism* during the information age with its pervasive computing. Actually, politics has to be adapted to changing technology, that is to say, bureaucracy should have an alternative form with respect to previous ones. In this book, Bimber provides a historical framework of the four political information revolutions from the "very birth of the American Constitution" to the "technological revolution driven by the Internet" in the United States. And different conventions have their own ways of spreading information, hence political powers have to use these means for their own convenience to achieve their political endeavors.

The author argues that political organizations and structures in the United States have adapted over time to the changing opportunities and constraints for managing political information and communication. These changes in the cost and distribution of communication and information have not occurred continuously, but have gone through long periods of stability punctuated by rather rapid moments of transformation arising from technological developments or changes in the economic and institutional complexity of society. These information revolutions advantaged certain kinds of organizations and structures over others in the political marketplace, leading to adaptation in the world of politics.

These were not changes in the structure of state institutions, though they have clearly evolved over more than two centuries. Changes associated with information revolutions have been concentrated in the domain of the linkage organizations and intermediaries that connect individuals in a sometimes rapidly changing society to the more slowly evolving structures of the state. The rise of the Internet and the adaptation of political organizations to changing circumstances in the 1990s and 2000s produced the fourth information regime in the US, which is characterized by abundance in information and communication, and which has weakened relationships between the distribution of material resources and the ability to organize certain kinds of political action.

Transforming matter into material is certainly a social process. However, nobody would assert that it is fully controlled by society, even less so when material is combined

to form complex artifacts and systems. Technology is not a conscious subject; it is not an independent object by itself. It forms visible and often frightening environments, which are enabling and forbidding at the same time. Observations such as are the foundation of the dilemma of technological determinism: Is society the High Priest or the apprentice? Or are both residents within society? Is there agency in technology or only behind it?

Nonetheless, Bimber is optimistic about the *post-bureaucratic pluralism* or *information regime.* Especially, he concluded that the information revolution will be in the middle. A well informed citizenry is a "well-established tenet of American popular culture." Good citizenship as the core value can be much better attained in the information revolution, and [...] "up through the rise of contemporary in information technology raises questions about this ideal of informed citizenship." What questions? Bimber puts out a few, for example, if the evolution of media and the changing characteristics of information across time lead to changes in the nature of political intermediaries, what about levels of citizen engagement? Is the rise of information abundance and new post-bureaucratic structures for collective action in the contemporary period linked to the broader engagement in politics?

In the Preface to the Chinese edition of his book, Bimber observed that two important developments have occurred since the book was written. In the world of technology and politics itself, a new generation of Internet tools that rapidly came to be called "social media" appeared. Beginning in 2003 and 2004, new ways of employing the Internet and cellular telephony gave primacy to people's ability to create and distribute their own messages, images, and other content, and to organize their communication and sharing of information around social networks —their own networks, the networks of the people within their networks, and networks further removed. A key feature of this development for politics is that boundaries have broken down between these layers of networks of individual citizens on the one hand, and on the other hand the mass media and political organizations. This phenomenon has been global in scale, and through social networking tools has touched politics in other countries. In the US, these collapsing boundaries between citizens in their social networks and formal political organizations have thus far reached their peak during Barack Obama's successful presidential campaign in 2008— a campaign that featured the intensive and adept use of technologies that had not existed even a few years before. In the midst of the present information revolution, five or ten years is a very long time.

The second development involves advances in research on media and politics. In the world of academic research, five or even ten years is not such a long time, though there has been much new work on digital media and politics. In the US context, and also to some extent in Europe, Asia and other places of the world, a question of central fascination for many people has been whether or not the Internet would precipitate an increase in various kinds of democratic participation. Those findings have been interpreted variously as evidence for and against an effect on participation from Internet use. It is now much clearer that a small positive association does exist between Internet use and participation in some cases, and this can not be explained away as an artifact of political

interest. It is likely that the effect is concentrated among younger generations, and it appears increasingly clear that interest in public affairs and other motivational characteristics interact with the use of digital media —something that was not explored in this book.

Beyond the lingering question of participation rates, the larger argument in this book was that the real action in politics and technology in the US lies in changing political structures for engagement and in new ways of organizing, not in how many people do or do not engage. Bimber believes that most of that argument is holding up well. The social media revolution has done nothing if not accelerate those processes of information revolution. New structures of political association appear and fade away through social media tools, often focused on specific events such as protests or political decisions. At the same time, long-standing formal organizations are adapting and exploring new strategies.

It is said the number of the Internet users in China is the largest in the world. So far as the question of democracy is concerned, it is always a sensitive topic because of the wide and instant spreading of information across the Internet. And the consequence might be drastic in a country with such a large population. In contrast to the information regime, China is trying to adopt a deliberative democracy in order not to trigger the problem as Bimber observed with regard to the Million Mother March, etc.

Public forums break through the limits of time and space resulting in direct and indirect communication for citizens to negotiate with the traditional *bureaucratic officers*, forcing them to encounter the questions in real society, which were often concealed due to the *bureaucracy* system. Politics is regarded as a topic within the government as it were, with the rise of the Internet in China, discussion and engagement beyond the government has come into being. In pluralistic environments many common topics in relation to politics and policies are being debated and communicated. This, in my opinion, provides momentum for the evolution of the political structure on the one hand, and on the other, it dissolves the unstable factors during the process of modernization and stimulates the democratic consciousness of citizens. However, we have to admit there is still a long way ahead in a country that has experienced such an accelerated social transformation in the last 10 years. Bimber's book is an outstanding mirror for Chinese scholars in which we can see that the new technology will sooner or later change the political scenario of China.

INFORMATION AND AMERICAN DEMOCRACY IN THE ERA OF WEB 2.0

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Bruce Bimber's book was published in 2003 at the beginning of what he calls "the fourth information revolution." Even if the book was written almost a decade ago, it is still extremely intriguing and challenging.

This work displays a deep knowledge of the lessons of sociology, political science, economics, political psychology, and political thought as well as the ability to use different research techniques (quantitative and qualitative).

The overall importance of this book clearly lies in moving the emphasis toward the nexus between characteristics of political information and properties of democratic power and practice, filling a gap patently present in the literature. As the author states "To argue that some very important features of American democracy have roots in informational phenomena is not to suggest that other factors have been unimportant in influencing change […] Rather than suggesting that these factors be set aside […], I claim that information phenomena must be added to the picture for a complete account" (*ibidem*: 20). The "informational perspective" embraced by Bimber places information and communication at the core of political analysis as independent variables. This methodological choice aims at overcoming the limits of previous research which tend to devote scant attention to such a dimension of analysis, often quoted by many others but rarely discussed and investigated adequately.

Another important methodological wariness in Bimber's work concerns online and offline interplay. As he correctly observes "it makes more sense to speak of a single 'world' with on-line and off-line features than attempting to maintain a distinction between an on-line world and an off-line world, categories which are largely artifacts of historical transition" (*ibidem*: 9). This caution is part of an holistic approach which focuses on general processes rather than on particular episodes.

Given the year in which it was published, the book does not consider or discuss the implications of web 2.0 on information flows and on American democracy. Actually, the latest stage in the evolution of the web could be seen just as a peculiar type of "tree" within a "forest" of technological innovations. As the author rightly notes, "Instead of attending closely to technological matters and details of this kind, I concentrate on the broad sweep of technological development. In particular, I focus on the fact that various contemporary technologies are in many different ways creating a more information-rich and communication-intensive society and polity. […] Understanding the consequences and historical context for media abundance is more important here than drawing connections between any particular technology and political outcome. Focusing on the *forest* rather than the *trees* has an important advantage. From a technological perspective, it avoids the consequences of dwelling on specific technologies that are subject to frequent change or obsolescence."(2003: 28, emphasis added). While Bimber's methodological choice is definitely correct, the shift towards "participatory web" is probably worth a specific discussion and a second edition of the book should certainly include some reflection on this technological change. In fact, according to the author, the main characteristic of the fourth information revolution lies in "information abundance" and in the rise of "post-bureaucratic organizations". In this sense the digital revolution entails notable differences between the individual and organizational level. As Bimber claims, this revolution "suggest[s] a set of important changes that are concentrated between the level of the mass public and institutions of the state itself —a revolution in the middle" (*ibidem*: 229).

In other words, as observed for previous information regimes, the greatest transformations brought about by the fourth wave of change in information and communication affects the meso level more than the micro one. This means that the amount of material or human resources needed to organize collective actions dramatically decreases. Organizational boundaries become more permeable and the relationship with members less demanding. These changes imply a transition from interest groups to issue groups, up to event groups: in the new information regime political action tends to be organized around specific events.

Information revolutions then have to be understood as changes in the identity and structure of political intermediaries: from parties (that emerged thanks to the creation of a national postal service and the press) to interest groups (which rose during a phase of industrialization and urbanization), from candidate campaign organizations (facilitated by broadcasting) to post-bureaucratic political groups (typical of the Internet era).

Web 2.0 adds the multiplication of information producers to this shift in intermediation. Prosumers[4] are an emergent subject in an information regime characterized by user-generated content. As Bimber already noted, such changes do not dramatically alter the way information regimes work as traditional institutional actors either resist or adapt to technological innovation, but do not disappear. However, the complexity of the social system and political processes is further exacerbated. Moreover, social networks could make what is a revolution from the middle into a revolution from the bottom. Web 2.0 platforms are in fact further disintermediating citizens from political organizations by providing resources to organize collective action beyond traditional actors.

While the data presented in Bimber's book clearly show that the individual level is almost unaffected by the information revolution as only the "usual suspects" benefit from it while the information-poor stay poor, recent surveys highlight that the Internet has become the second most popular source of information after TV, surpassing newspapers and radio in popularity as a news platform.[5] Does this change have some implications for political participation and civic engagement at the individual level? Or as noted by some scholars[6] the "colonization" and "normalization" of cyberspace makes online gatekeepers (i.e. search engines) resemble the power dynamics of usual politics? Is the possibility disclosed by social networks to create, modify and distribute information among like-minded and trusted people going to have any consequences

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[4] Toffler, A. (1980), *The third wave: The classic study of tomorrow*, New York: Morrow.

[5] http://www.pewinternet.org/Reports/2010/Online-News/Summary-of-Findings.aspx?r=1

[6] Hindman, M. (2009), *The myth of digital democracy*, Princeton: Princeton University Press; Koopmans R., Zimmermann, A. (2010), "Transnational Political Communication on the Internet: Search Engine Results and Hyperlink Networks", in R. Koopmans and P. Statham (eds.), *The Making of a European Public Sphere. Media Discourse and Political Contention,* Cambridge: Cambridge University Press, pp. 171-194.

for "communications ecology"? While Bimber stresses how previous research founds a null effect of greater information flows on political participation at the individual level, empirical evidence coming from different countries (i.e. the Spanish mobilization of 2004 against terrorist attacks in Madrid[7], the "Green Revolution"in Iran in 2009, the social unrest in the Arab world in 2010 and 2011) seems to signal how digital technologies facilitate what Clay Shirky[8] refers to as "organizing without organizations" (or organizationless organizing), which means moving one step beyond post-bureaucratic organizations. While this opportunity certainly gives individuals a larger degree of freedom for political action, it could also trigger what Freeman called "The *Tyranny* of Structurelessness"[9], which occurs when organizationless hides power asymmetries and *de facto* leadership, thus making organizational dynamics opaque and unresponsive.

The hypothesis of "organizing without organizations" is challenged by the concept of "organizational hybridity".[10] This refers to the convergence of previously distinct organizational repertoires typically associated with political parties, interest groups, and social movements encouraged by the Internet. Thus, the fourth information revolution does not witness the emergence of new political intermediaries supplanting previous ones, but the hybridization of organizational forms which borrow and mix forms of action typical of different organizational types. Are we then experiencing a transition towards organizationless organizing, organizational hybridity or are both trends present at the same time?

Another point worth discussing concerns the relevance of Bimber's work beyond the United States; an issue which is tackled in the conclusion of his book. Can the theoretical framework proposed by Bimber be applied to other Western democracies and beyond? The author partially answers this question by addressing the consequences of the "global" information revolution beyond the US. But what about information regimes and their changes across time and space? Obviously, the analysis of different information regimes proposed by the American scholar is strictly related to the history of his country. The characteristics of the first information revolution cannot be easily found and translated into different contexts. Nonetheless, the first revolution probably occurred in other national contexts coinciding with democratization processes and the emergence of the bourgeois public sphere. As for the later information revolutions (industrialization, broadcasting, internet diffusion), these can be detected —though at a different pace and with different characteristics— in most Western democracies.

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[7] V Sampedro Blanco, V.F. (ed.) (2005), *13-M: Multitudes online*, Madrid: Libros de la Catarata.

[8] Shirky, C. (2008), Here comes everybody: The power of organizing without organizations, New York: Penguin Press.

[9] Freeman, J. (1973), 1973. "The Tyranny of Structurelessness", in A. Koedt, E. Levine and A. Rapone (eds), *Radical Feminism,* New York: Quadrangle Books, pp. 285-299.

[10] Chadwick, A. (2007) "Digital Network Repertoires and Organizational Hybridity", *Political Communication*, 24 (3), pp. 283-301.

Bimber's book pushes us to apply the same reasoning to those countries that did not experience the two first revolutions (democratic transitions and industrialization processes) but in part or in full experienced the latter two (broadcasting and internet diffusion), which are characterized by growing information abundance. Can Bimber's book help us in understanding processes which are taking place in the Arab world? to what extent do information revolutions make "human revolutions" and vice versa? Do we find the same mechanisms characterizing the political processes which took place in Indonesia and in Chiapas discussed by the author also operating in the more recent Arab revolutions?

The last point deserving discussion concerns normative questions such as *political inequality* in the digital age as well as the *fragmentation* and *polarization* of the public sphere brought about by the internet. Concerning the former, Bimber notes two contrasting developments: on one side, post-bureaucratic political organizations are reducing the influence of institutionalized elites and the weight of experts in politics; on the other side, access to the information environment is unequal and this form of exclusion overlaps with traditional socio-economic inequalities. Unfortunately, the steady narrowing of the digital divide in terms of access does not involve a decrease in other digital inequalities such as digital skills. The multiple dimensions of the digital divide represent a serious threat to the concept of citizenship in contemporary societies where citizens' rights can only be granted by fair and equal access and participation to information and communication flows. As for the second normative question, Bimber discusses the cyber-transformation of the public sphere. Here again the picture is complex and portrayed by two contrasting dynamics: on the one hand, self-selection, individualization processes and personalized paths of information consumption exacerbate the "balkanization" of the public sphere and the decline in general interest; on the other hand, media concentration (which triggers heterogeneity and pluralism) could contribute toward common political communication and general understanding. The price of the decline of political intermediaries thus translates into less order, clarity, integration and coherence in the public sphere; Bimber states that big media conglomerates could possibly counter-balance this trend. However, as profit and economic interests are their main goals, it would be naïve to think that they could preserve the orientation toward the common good of the public sphere, as theorized by Habermas.

To conclude, the author's focus on technology as a driver of social and political change in terms of "skeptical optimism" represents an bridging the gap which has characterized at length this field of study. In a nutshell, "information technology may have many effects at once. [...] It is best to assume that it might both strengthen and weaken democracy, as well as exert little influence on some democratic processes" (*ibidem*: 30). Bimber's stance in between technological determinism and social constructionism allows him to illuminate both the "light" and "dark" sides of innovation processes. In sum, Bimber's book sheds light on highly relevant methodological, empirical and normative issues related to information revolutions.

What Comes Next?: Bimber's Information Revolutions and Institutional Disruptions

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Bruce Bimber's *Information and American Democracy* is a pathbreaking work in the field of internet politics. Ambitious in its scope, the book situates the rise of the internet in a historical context of previous "information revolutions," or changes in "information regimes." In so doing, the book makes three major contributions: historical, theoretical, and empirical. Today, nearly a decade after the book was first published, it is high time to consider what comes next. In what directions should *Information and American Democracy* be extended, or built upon, to enrich our understanding of the interplay of information and communications technologies (ICTs) and political institutions? This essay will discuss each of these contributions in turn, and speculate on the areas where future researchers can and should extend the research agenda.

Historically, Bimber's main contribution lies in uniting two rarely-overlapping fields of historical inquiry. Many works provide a detailed history of changing information technology. Many other works examine the rise of the American party system, and of political associations. What makes this book unique is the degree to which it unites those two research traditions. Read alongside such works as Michael Schudson's *The Good Citizen*, Stephen Skowronek's *Building a New American State*, Paul Starr's *The Creation of the Media*, and Theda Skocpol's *Diminished Democracy*, Bimber provides his readers with a conceptual framework for understanding our current information revolution. The internet's impact upon society is unique, but not unprecedented. Previous information revolutions likewise produced similar periods of institutional change.

Bimber's historical discussion occurs within a single chapter of the book, however. Necessarily brief, it provides a welcome puzzle for future scholars: how deep do these historical ties run? What would a more fine-grained theory look like? In particular, since individual information and communication technologies are constantly in a state of diffusion, we should ask what the underlying mechanisms driving party and interest group structural change look like. At what level does a new technology rise to the status of "revolutionary," and do less-revolutionary information technologies display similar features? How, for instance, does the rise of the answering machine or cable television, or social networking sites affect the costliness of information, and the resulting structure of political associations? *Information and American Democracy* offers broad historical strokes. A closer look could yield substantial additional insights.

I suspect that the general picture Bimber offers of four "information revolutions" would be well-supported by a more nuanced account. What we could gain, however, is a clearer picture of the underlying mechanics at work. How do networks of actors interact with existing institutional structures? Does change come from within or without? This is parti-

cularly important today, given Zysman and Newman's (2007) discussion of the internet as "not one, but a sequence of revolutions. It is a continued and enduring unfolding of digital innovation, sustaining a long process of industrial adaptation and transition." Bimber's research was conducted before the rise of social networking sites, YouTube, Twitter, or the blogosphere. As the medium itself continues to evolve, it is incumbent upon the research community to sort through such boundary questions as "what constitutes a 'revolutionary' ICT," and what impacts we should expect from the continual development of the content and social layers of the World Wide Web. An entire cottage industry has cropped up around such questions, with public intellectuals routinely offering pronouncements about "networked organizations," "twitter revolutions," and "organizing without organizations." The findings of *Information and American Democracy* are deeply salient to those debates, but would find increased relevance through an exploration of the micro-foundations of the theory.

Theoretically, the book makes its strongest contribution with the third chapter, "The Fourth Information Revolution and Postbureaucratic Pluralism." Therein, Bimber discusses the implications of "information abundance" for American political associations. He highlights four departures from the existing interest group environment: (1) the resources required for collective action will be fewer, (2) organizational boundaries will become more permeable and less hierarchical, leading to a rise in short-term "meta-organizations," (3) interest group membership will shift from interest-based to event-based affiliations and (4) mobilizing communications will become better-targeted and less broad-based thanks to the availability of micro-targeted participant information.

I would argue that all of these predictions have indeed come to pass. Organizations like MoveOn.org have redefined membership, disassociating member status from donor status and counting all of their e-mail recipients as "members." They have limited staffing and overhead costs, and frequently launch short-term meta-organizational campaign efforts. Given the extent to which the internet of 2011 has evolved beyond the internet of 2001, Bimber's successful prediction is nothing short of astonishing. Information abundance and post-bureaucratic pluralism should hold a central place in the literature on the internet and politics, equal to such robust concepts as the digital divide and information cascades.

There are two areas where the theoretical contribution of Bimber's work could be extended further. The first, which is the subject of my own research, lies in the application of Disruption Theory (Christensen 1997) to the field of political associations. Bimber, like several contemporary scholars (Diani 2000, Chadwick 2007), predicts that existing political associations will lead the way in adapting to the new information regime. Disruption Theory, by contrast, suggests that "revolutionary" technological innovations yield an advantage to new entrants in an industrial sector, leading to the decline of existing companies. Though primarily applied to business organizations, the tenets of disruption theory apply equally well to the non-profit sector.

Through the lens of disruption theory, an interesting intersection emerges between Bimber's work and Theda Skocpol's *Diminished Democracy*, also published in 2003.

Skocpol likewise offers an historical account of the transformation of American political associations. Information technology receives slim attention in her study, which highlights the generational displacement of longstanding cross-class membership federations by single-issue professional interest groups. While Bimber explains the rise of these new interest groups through a focus on broadcast communication technologies, Skocpol focuses on the "rights-based framework" emerging from 1960s-era social movements and the changing opportunity structure created by Washington, D.C. bureaucratic institutions. These two books should be read in conversation with one another, with Bimber providing an explanation of the changing information landscape, and Skocpol providing an indication that the novel affordances of the new communications media were captured by a new generation of associations. Indeed, I have found in my own research that there are clear differences between new, internet-mediated political associations and their longer-standing counterparts in how they deploy novel ICTs (Karpf 2010). The disruption of America's interest group ecology remains a largely under-explored topic, and one which Bimber's theory of "postbureaucratic pluralism" should strongly influence.

A second area for theoretical exploration lies in cross-national comparison. Though the title of Bimber's book is *Information and American Democracy*, the drivers of institutional change he identifies should be in operation in other industrialized Democracies as well (information abundance is hardly an America-centric phenomenon!). Indeed, Diani (2000), Bennett (2003, 2004), Chadwick (2007), and Anstead & Chadwick (2007) have begun to develop such a cross-national research agenda. This research is a complex undertaking since the interest group ecology of any given country is a function of that country's Electoral System. Democratic nations with Mixed-Member Proportional representation develop different interest group systems than Democratic nations with Single Member, Simple Plurality representation. Researchers thus cannot simply pool interest group data between democratic nations, creating challenges for comparative research efforts on this topic.

Empirically, the enduring value of Bimber's work lies in the set of early case examples it provides. These examples, such as his opening narrative of the Libertarian Party's 1999 mobilization effort against a proposed 'Know Your Customer" administrative rule, provide a useful rejoinder against the journalistic enthusiasm that ensues whenever waves of internet-mediated political mobilization dominate the headlines. While the internet as a medium may constitute a "series of revolutions," it is useful to temper public enthusiasm over "organizing without organizations" by asking how, if at all, today's new media political campaign tactics are different from those of the previous decade (Karpf 2010). Bimber's cases provide a valuable point of comparison in this regard.

That said, the case examples in chapter 4 are, by necessity, the most limited element of the book. At the time it was written, the postbureaucratic trend amongst advocacy organizations was only starting to emerge. Groups like MoveOn were still in a nascent phase of growth, and groups like Environmental Defense Fund were enthusiastically deploying a first round of "web 1.0" political tools. Environmental Defense Fund provides a particularly telling example: founded in 1967, the group rebranded itself in the

late 1990s as "environmental Defense." Staff interviewees explained to Bimber that this was partially because of their commitment to the new digital realm. Since the book was published, the group has reverted to its previous name. Much like the online information hubs that rise to prominence and expire at a rapid, churning pace, the institutional path toward postbureaucratic pluralism is winding and dangerous for any one organization.

The field of internet-mediated political organizations has been heavily influenced by events that occurred since the publication of this book —the anti-war movement, the Howard Dean campaign, and "web 2.0" online communities, to name just a few. New organizations and political consultancies have been formed in the intervening years, changing how political associations deploy information technology. Both the progressive "netroots" and the conservative "tea party" have supported new networks of technologically-savvy individuals and organizations who, in turn, shape the course of organizational activities in this field. As such, whereas *Information and American Democracy*'s historical and theoretical contributions remain impressively robust, the book's empirical case examples have become, by necessity, somewhat dated. They serve as a marker of the state of technology adoption in the late 1990s and early 2000s, but more recent case examples provide a more robust picture of post-bureaucratic pluralism.

Information and American Democracy is a seminal work in the literature on the internet and politics. It stands the test of time surprisingly well —better than many contemporary works. The sheer scope of the work provides ample venues for future research. Affiliated researchers should take up the challenge of developing a finer-grained version of the historical analysis, investigate the implications of postbureaucratic organizations for the interest group ecology of America, engage in cross-national comparative research on the implications of information abundance, and update our empirical understanding of the new generation of advocacy groups. The book serves as a starting point for a wide research agenda; one that deserves even wider attention than it has received thus far.

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Online Political Information and Online Political Participation

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One of the many virtues of Bruce Bimber's *Information and American Democracy. Technology in the Evolution of Political Power* (Cambridge University Press, 2003) is his effort not to make the study of the relationship between politics and the Internet prisoner to the constant technical changes that affect this type of technology. In other words, his effort not to place technological novelty at the center of his academic reflection. Bimber analyzes, in a broad historical and theoretical context, the relationship between the features of information in current society and the properties of political practices in American democracy.

From my point of view, this way of approaching the issue is fundamental because it avoids what I believe to be one of the most significant limitations in our area of research: the tendency to consider the study of new technologies as a new field without the need to refer to previous historical experiences and, most importantly, to the basic theoretical concepts of sociology and political science.

This broad historical and theoretical review allows Bimber to show the close relationship between the structure of information and the evolution of the democratic system in the US. Thus, he focuses on four information revolutions and identifies, for each of them, a set of effects on the shaping of power and of the social and political relationships in the United States. The last of these four revolutions is the result of the penetration of Information and Communication Technologies.

By way of a summary, Bimber points out that changes in the way information is organized fundamentally affect the distribution of interests and how collective action is structured. On the other hand, these changes in the organization of information have far less significant effects on individual participation, as well as on citizens' civic commitment.

These patterns of change in the physiognomy of information and their effects on political structure could fit in with many episodes in the political history of Spain. For instance, an episode we are about to celebrate: the drafting of the Spanish Constitution of 1812.

My knowledge of the political history of Spain and my personal academic interests dissuade me from entering into this debate with the author. Instead, I will focus this discussion on the effects of the nature of information in the Internet era on political participation.

In recent years, my research has focused on understanding the relationships between new information and communication technologies, especially the Internet, and political participation in Spain. From the start, Bimber's work under discussion here became a necessary and especially valued reference. It is one of the seminal works in our area of research. Its conclusions were an essential point of reference for our working hypothesis in the research project I am currently leading[11]. In this regard, we could say that my research team[12] and I have already held a preliminary discussion with the author of the work. We are lucky to have this opportunity for the author to reply, thus closing the circle.

Given this precedent, my comments shall be based on some methodological and theoretical reflections we have made, taking as reference Bimber's work, with a view to setting up our above-mentioned research project. Likewise, given the phase this project is in, we will be able to include in our comments some of the results obtained from our research.

In our first discussion with the author, we focused mainly on his concept of post-bureaucratic pluralism. From our point of view, one of Bimber's most stimulating and enlightening conclusions in the book is that the fourth technological revolution opens up a process by which political information and communication are far less institutionalized than in previous periods. Information in the Internet era is more easily produced and distributed. That is, the Internet becomes, from this point of view, a technology that significantly reduces the costs associated with the transmission and acquisition of information.

I like to think of this conclusion in iconographic terms as a transition from vertically organized information to "horizontalized" information. As the author himself says in this discussion section, this organization of information makes it impossible to maintain the previous system where amassing resources was a pre-requisite for political communication. As a result of the advent of the Internet, Bimber suggests, collective action does not

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require to the same extent as before "substantial staff, money, or formalized organization" (page 3 of B. Bimber's text in this discussion section).

In democratic terms, the decreased weight of organizational structures favors the plurality and aggregation of interests. This adaptation of political organizations implies an increased speed of political processes, as well as "creating conditions for a shifting competition over political information among a wide-open field of contestants far less constrained than at any time in the past" (page 3 of B. Bimber's text in this discussion section).

Taking as a reference these ideas, we designed our empirical analysis for the case of Spain. Firstly, we included in our research model not only traditional sources of political information such as media, political parties, etc., but also political communication that occurs among citizens through means such as email and newsletters. We believed that this would help us make progress along the line of research proposed by Bimber. If the fourth information revolution brought about by the New Information and Communication Technologies resulted in decreased costs of production and distribution of political information, the information distributed by citizens via this means had to be taken into account in the analyses of processes of political participation. In other words, in order to reproduce the "abundance of information", we thought it was interesting to include the information citizens reproduce/produce and distribute through the Internet.

Along these same lines, we attempted to add complexity to the dependent variable: political participation. Together with the variables included by Bimber[13], we introduced a set of political practices referred to in the literature as non-conventional political practices. Among these, were attending demonstrations, going on strike or attending illegal political meetings. Lastly, we also included more recent political practices which are not easy to classify in either of the previous categories. Examples of these would be political consumerism, participation in alter-globalization political organizations, etc.

In both cases, both for the dependent variable and for the independent variable, we applied a factorial analysis in order to deepen our understanding of the underlying characteristics of both variable constructs: political information and political participation. In the case of political participation, we wanted to know to what extent the political practices included in the analysis grouped together according to the usual theoretical categories (conventional political participation, non-conventional political participation and forms of participation not included in either of these two categories). In the case of political information, the aim was to perform an exploratory analysis and our interest lay in finding out the organization of the information-related variables.

We found that the different types of participation grouped together as the theory predicted. The first factor included all conventional political practices such as voting, supporting a candidate, etc. The second factor included new non-conventional practices such

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[13] The political practices Bimber includes in his analysis represent types of participation defined by the literature as conventional political practices. Namely, voting, attending meetings, collaborating in a campaign, donating funds to a political party, etc.

as demonstrations, strikes, etc. Lastly, new political practices such as consumerism or other alter-globalization social movements comprised a separate factor. The information variables were grouped into two factors. The first included all the variables related to traditional media or to political institutions that produce political information: watching or listening to TV or radio programs about politics, reading political information on media websites, reading newspapers, etc. The second factor was comprised of variables representing the exchange of political information among citizens through the Internet such as emails calling to attend demonstrations, receiving an email with information regarding a political manifesto, receiving an email with information on current affairs, etc. In sum, the first of the factors represented information, whether or not received through the Internet, which originated from some kind of formal institution or organization, whereas the second factor represented a set of practices of dissemination of political information among citizens through the Internet.

Taking as a reference Bimber's study, we use the two factors regarding information as independent variables and the three factors regarding participation as dependent variables for three different regression analyses. In these analyses we controlled the influence of the following variables (level of education, age, gender, social and economic status, interest in politics, trust in society, trust in public institutions and perception of efficiency of institutions). According to the results of our analysis, there is a very weak relationship between consumption of political information from institutional sources (offline and online) and conventional political participation, non-conventional political participation and new forms of participation. We found that the relationship is stronger, although still moderate, in the case of conventional participation. However, the factor representing political information from emails, newsletters, etc. shows a relevant impact on the three types of political participation. In fact, together with interest in politics, it is the variable with the strongest weight on the dependent variable in the three analyses carried out.

The results of this analysis corroborate to a great extent some of the hypotheses set forth by Bimber. From our point of view, these results exemplify how, for the case of Spain, information management organizations may be losing part of their influence on collective action in favor of other less institutionalized ways of transmitting information. In fact, our analysis shows a significant relationship between receiving this type of emails with political information and taking part in participative activities and collective action. Thus, emails with political information received by Internet users are, in the case of Spain, a stronger mobilizing stimulus than information accessible through other media such as newspapers, radio or television. This is especially the case with non-conventional political practices and more innovative political practices included in our analysis. That is, they are particularly relevant for political practices that require a process of collective action. However, in this analysis, we see only the relationship between both groups of variables and not the effect of this relationship. To this aim, we have formulated several hypotheses that will guide us in our qualitative phase whose aim is to further understand the effects of the structure of information in current society on participation practices. This takes us into the realm of speculation. However, we think that given the context and nature of this brief

contribution to the discussion, it is worth putting forward some ideas that may be useful for future research related with Bimber's seminal work.

According to the first of these hypotheses, in a context defined by a crisis of trust in fundamental institutions such as the State or traditional media, information arriving from peers (friends, acquaintances, organizations sending previously requested updates, etc.) may be deemed more reliable. Political theory has deemed trust and social reciprocity to be determining factors of collective action.

According to the second hypothesis, unlike traditional media, information from peers is more aligned with the preferences and interests of the recipient. That is, both the information from general media and that coming from mass political parties are aimed at the "general public", whereas information sent to a mailing list or to a specific person is designed taking into account the recipient's characteristics. It is precisely for this reason that it may be a better stimulus for mobilization.

Lastly, it could be suggested that the costs associated with the search, storage and handling of the information are much lower if you belong to a network of citizens than if you use traditional media. Based on some versions of the social capital theory, we suggest that one of the main advantages of social media is that they allow users to solve problems related with the cost of information and, thus, a great part of the problems for collective action. The Internet, from this point of view, would be making it cheaper to act.

DIGITAL MEDIA AND POLITICAL CHANGE: A RESPONSE TO GARCIA, KARPF, LIVINGSTON, LIU, MOSCA, AND ROBLES

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At least three important developments involving digital media and politics have occurred since 2003 when *Information and American Democracy* was published. During the mid-2000's social media emerged into the marketplace and into people's social practices around the globe. Barack Obama ran successfully for office in 2008 employing a campaign that relied more extensively and effectively on digital media than any in history. And in 2011, Arab Spring demonstrated how deeply embedded social media have become in non-routine politics as well.

How adequately do the concepts "information abundance," "information regime," and "post-bureaucratic pluralism" capture the state of digital media and politics in the US and around the world today? In this forum, David Karpf is enthusiastic about how well some of the key ideas associated with these concepts have played out in practice over time. Lorenzo Mosca is skeptical in a positive sense, suggesting that organizationless orga-

nizing, which is increasingly visible in the world of social media, might be a step *beyond* post-bureaucratic pluralism.

It is clear now, as it was a decade ago, that organizations are not dead or dying, to be supplanted by structurelessness in the public sphere. It is certainly possible to find many compelling cases of organizationless organizing, as Shirky (2008) has done, and as I have written about too (Bimber, *et al.*, 2005; Flanagin, *et al*., 2006). It would be another matter entirely to believe that the evolution of organizing is tending toward a condition where organizations no longer are important. My next book, *Collective Action in Organizations: Interacting and Engaging in an Era of Technological Change*, which is forthcoming from Cambridge University Press and co-authored with Andrew Flanagin and Cynthia Stohl, shows the continuing relevance of organizations to collective action. We make a case that the interesting question in post-bureaucratic pluralism is not whether structurelessness replaces organizations, but rather how citizens participate in organizations when they also have so many opportunities to participate without them.

Post-bureaucratic pluralism entails a complex portfolio of approaches to organizing: without organization, with traditional organization, with hybrid organization, in networks of organizations. This may be more evident now than it was in the early 2000s. What is not yet fully understood is just how these organizational complexes work, how strategic actors make optimizing decisions when they now have many choices about how to organize. As Karpf observes on this issue, the central idea of information-regime change is that as the ecology of information and communication changes, so too will linkage organizations and the structures of collective action. Liu Gang writes that the "social media revolution has done nothing if not accelerate those processes of information revolution," and that is certainly how I see many developments of the last decade.

I expected when I wrote the book that many readers would take issue with my definition of information, which is shaped by engineering and information theory as much as it is rooted in the disciplines of communication, sociology, and politics. As things turned out, not many readers did question it. But José Luís Garcia takes up the issue, noting that technologies hold the "singularity of acting on communicational realities generating symbols, meanings and culture, through text, image, and sound." He argues that communication therefore is more than "mere fluxes of information, message or content between sender and receiver." This is an interesting problem. On the one hand, when symbols, meaning, interpretations and values are communicated, what moves is information —representations of symbols and interpretations. So information and communication are linked in this way, and they encompass much more than facts or the contents of web sites, as Garcia suggests. On the other hand, I do not dispute his insightful point that technology is a "means to think with." This is undoubtedly right, and its effect on thought, expectations, and the production of meaning in the mind are not readily captured by information concepts. The social media revolution is making more clear than ever that identity and social reality are shaped by the integration of technology into people's lives, and these change civic norms and political practice. Garcia's argument about a redefinition of what is politics and democracy is a compelling one.

Information and American Democracy has been part of a long-running discussion about the extent to which digital media use has consequences for levels of political participation and civic engagement; a topic that José Manuel Robles addresses. A good deal more is known about this problem now than in the early 2000s, though the weight of evidence still points to what are at best very modest influences on participation rates in the US (Boulianne, 2009).

A lot of interest has focused on how political interest, as well as other motivation-related factors, moderate relationships between technology use and behavior. Beyond interaction effects, two aspects of the problem are emerging as central to the future of research in this area. One is the clear fact that not all participation and engagement are the same. Robles' work shows that it is important to differentiate types of participation and forms of communication and information use, which reveal an underlying factor structure that have not yet been adequately described. Moreover, political actions that can be conducted entirely online, such as signing petitions or posting political comments, appear to show a quite different factor structure yet (Cantijoch & Gibson, 2011). As portfolios of political practice change, in part due to the integration of digital media into people's lives, the old question of whether digital media increases participation rates overall, or in general, becomes increasingly inadequate.

It also appears increasingly evident that time and circumstance matter as the relationships between use of digital media and various political acts varies non-monotonically over time (Bimber & Copeland, 2011). Digital media use may be less important to certain behaviors in one election or advocacy campaign than in the previous one, and then return to greater importance in the next. At least in the US, how digital media are connected to political behavior is contingent on motivation and age, on what the behavior of interest is, on the context in which the behavior takes place, as well as on the social context of information and communication.

Both Robles and Lorenzo Mosca point out that recent developments in technology have placed citizens more prominently than ever in the position of producing information rather than simply consuming it. This is as great a challenge to traditional theories of political behavior as any. As information now moves two ways —to and from citizens— understanding its social context is increasingly important. Does a political message come from my "friend"? From many friends? Which ones? What am I doing at the moment it arrives? How should I respond publicly to this message? Robles suggests rightly that understanding how people think about such questions is increasingly crucial to comprehending political behavior. It is not enough to consider such classic problems as how much people trust news organizations or public officials; we must also understand how people's social networks legitimate political communication.

Garcia, Mosca, and Liu all raise the topic of technological determinism, and I appreciate Garcia noting that I do not fear being accused of the sin of somehow ascribing to this view, or more accurately, to some one of the range of views that acquire this label. Of course the adoption of technology, as well as the uses to which it is put, are contingent on many things: institutional arrangements, culture, markets, and the idiosyncrasies of his-

tory. Mosca would locate the argument of *Information and American Democracy* "in between technological determinism and social constructionism," which is quite apt. For me, the central point is that one can identify certain crucial affordances of digital media that are common across nations and contexts. Among these are: choice, speed, horizontal communication, and the breakdown of boundaries. Naturally these do not look the same in all places, but it is indisputable that this general set of affordances, notwithstanding some variation from one place to another, are just very different from the affordances of broadcasting. In a nutshell, this is why we are interested in digital media in the first place. It is also true, generally speaking, that these new affordances appear to matter in many quite different contexts: in Egypt and China, and in Spain and the US.

Many of the *ultimate* outcomes of use of digital media will be radically different in these places, but I expect that how political mediation works will be affected along some similar lines across contexts. If one wished to apply the term "technological determinism" loosely to the idea that the same technology has some similar *proximate* human consequences in very different places, then one would have to concede that digital media are showing that loose definition of determinism to be true.

Part of the change in the nature of political intermediation involves weakened boundaries between the private and the public, between the social and the political, and between the national and the global. Steve Livingston notes insightfully that in any one political location —such as the US or rural Africa— the technological and organizational innovations that are associated with change may be occurring in some other location. The ecology of information and communication is indeed global, and so one can reasonably ask whether it is adequate to talk about information regimes within one state. It is clear that the rapidly changing ecology of information and communication gives less control over agendas, message framing, and political attention to organizations in any one state, as well as less capacity to solve problems of information and communication through organizational adaptations of their own, independently of what is happening globally. The problem Livingston identifies is that of the state in global context where national boundaries and institutions matter less —but still matter. The exogenous pressures on political intermediaries and networks are greater than ever, as he notes. At the same time, this globalization of networked communication is likely to further advantage post-bureaucratic strategies for political organizing as political actors find that flexible, networked structures that share agency with others are often successful as adaptations to this new global context. The strategies of political organizing and collective action associated with the early part of the digital media revolution are likely to become ever more adaptive, rather than less, in the global political ecology. At the same time, he is right that we can not understand sufficiently the character of the linkages between information and political organization by confining our view to any one nation.

A good many of the most significant developments anywhere in the world involving digital media and politics were occurring inside the US up through roughly the time of Barack Obama's election. Then things changed substantially. Since 2008, it is increasingly clear that most of the significant developments are happening outside the US. They

will surely continue to do so indefinitely. There are clear reasons why political momentum with digital media happened to start in the US: most of the computing and networking technologies were developed in the US; these emerged into a pluralistic political landscape dominated by a body of competing interest groups eager to exploit any new tool, and featuring a campaign system driven by competitive candidate campaign organizations that are constituted from scratch each season, rather than organized by enduring and institutionalized party organizations. In this regard, the US had a head start, but at the same time it is a nation where opportunities for dramatic political change are limited. As Karpf notes, information abundance is hardly confined to the US. On the contrary, the US, like most post-industrial democracies, has enjoyed a state of plentiful political information and communication for a long while: through competitive markets for mass media, through civil liberties involving speech and association, through healthy civil society and generally good access to education. In such places, information abundance in the digital media era merely expands information richness from the age of mass media. This is not the case in many parts of the world, where the leap from greatly circumscribed political information to abundance is a radical one.

One of the most compelling places to take that leap is China, about which Liu Gang writes that "new technology will sooner or later change the political scenario." The Chinese government is walking a tightrope with digital media, as he implies. The Chinese state has already conceded much if it acknowledges that it can not, as Liu writes, keep politics and political discussion "within the government" because of digital media. Its policies of censorship and online propaganda are aimed at silencing high-level dissent and preventing "drastic" events that could potentially threaten the legitimacy of the state itself, but Beijing tolerates non-threatening political discussion, as well as online advocacy aimed at local-level issues. The latter involves use of digital media to expose corruption in low-level bureaucrats or discrimination in hiring or education, or to deal with such issues as local environmental problems (Yang, 2009). Those can be framed as bringing the bureaucracy into more direct and indirect contact with citizens, improving the efficiency of the state apparatus, one its putative superiorities over democratic institutions. The challenge the Chinese state faces is therefore twofold: continuing to repress high-level dissent, which is much harder due to digital media, and containing safe political advocacy online so that its agenda does not creep into forbidden issues. Key to how this balancing act unfolds are the nascent civil society organizations in China dealing with environmental issues, health, education, non-discrimination, and the like. The People's Republic of China may be confronting its first information revolution, and how that unfolds is likely to be a function of the interplay between these organizational forms and the affordances of digital media.

The developments of Arab Spring have moved faster. To invoke the theory of punctuated equilibrium that Livingston describes in connection with information revolutions, these developments are without a doubt a punctuation in what was for a long time an unhappy equilibrium. The conditions to which people in Tunisia, Egypt, Libya, and elsewhere responded in 2011 had been present across North Africa and the Middle East

for years: police violence and repression, lack of civil liberties, and poverty. Punctuations are intrinsically unpredictable in advance; likewise, in retrospect all complex events have more than one starting point. One of the starting points of Arab Spring was Mohamed Bouazizi's self-immolation in Tunisia. Another was the recurrence of rising food prices. And a third was the practice that Egyptians gained in the years following the April 6, 2008 Youth Movement with political communication and organizing through digital media. By the time that President Ben Ali left Tunisia, Facebook was the third most popular web site in Egypt and it was without question a political medium. Of course Egyptians used it when they rose up against Mubarak, and it allowed them to do things not easily done so rapidly without it.

Whether the changes unfolding across North Africa and the Middle East now are eventually consolidated into democracies or something else remains to be seen. From the perspective of the theory of information regimes, the questions are: What kinds of political intermediaries form and how do they adapt to the new ecology of information and communication there? Do civil society organizations evolve and exploit the horizontal communication power intrinsic in digital media? How does the availability of new forums expand political voice? How are political parties advantaged or disadvantaged in this new environment? "Liberation technology," as it came to be called by some in early 2010, does not create change, but across many parts of the globe, it creates opportunities for organizing. David Karpf suggests in this forum that Theda Skocpol's fine book *Diminished Democracy* be read in conversation with *Information and American Democracy*. As I survey the global picture of digital media and politics at the moment, I am most influenced now by Guobin Yang's *The Power of the Internet in China*, and Phil Howard's *Digital Origins of Dictatorship and Democracy: Information Technology and Political Islam*.

The first influential discussion of politics and what we now call "digital media" dates from the mid-1990s, in books such as Larry Grossman's *The Electronic Republic,* and *Elections in Cyberspace*, edited by Anthony Corrado and Charles Firestone. Since these early, speculative works, which now seem quaint, a lot of analysis has focused on questions framed roughly as: "Do digital media cause political change?" This question is not quite right. Digital media are changing the ecology of information and communication, just as other innovations have done so in the past, and that in turns alters political opportunities, especially at the organizational level. As Mosca observes, one of my aims in *Information and American Democracy* was to help bring information in from the periphery —at best— of the study of American politics, and locate it more centrally as a concept relevant to political change. Historically, political change and changes in the information and communication ecology have been interlinked, exhibiting a pattern of stability followed by abrupt change. What this means at present is: When people act politically, they often use digital media. This formulation is more instructive than asking whether digital media make more people act politically. The developments of the last decade show that "online" and "offline" worlds of politics —in both democracies and dictatorships— are more integrated than ever, and that politics in the current ecology of information and communication has a different shape and character than politics in previous eras.

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