

Information and Communications Technologies and Power

By

Jeffrey A. Hart
Professor
Department of Political Science
Indiana University
Woodburn Hall 210
Bloomington, IN 47405

Tel. 812 855-9002
Email: hartj@indiana.edu
Web: <http://mypage.iu.edu/~hartj>

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Introduction

The politics of information and communications technologies (ICTs) frequently centers on questions of power. How does the diffusion of these technologies affect the distribution of power? In particular, does the spread of ICTs empower individuals and small organizations or does it favor large organizations and institutions such as governments and multinational corporations? Does it undermine existing hierarchies or reinforce them? Does control over the “architecture” of computing systems and networks affect the distribution of power?

How does the spread of ICTs affect the distribution of power internationally? Starting from an initial state of growing economic inequality among nations, does the diffusion of these new technologies result in increases or decreases in inequality? This is the question that motivates the literature on the “global digital divide.” [See Norris 2001;

Compaigne 2001; and van Dijk 2005] In brief, we are interested in the impact of ICTs on both domestic and international power distributions.

To answer these questions to our satisfaction, we need to review what scholars have said about power: how they define it, measure or observe it, and explain shifts over time. How does technology and technological change affect the distribution of power? Only if we have a clear understanding of these issues, will it be possible to address more specific questions about the power implications of the spread of ICTs.

Defining Power

Dictionary definitions of power are helpful in suggesting the way words are used in ordinary language. In Dictionary.com (which assembles definitions that are located in various place on the World Wide Web)¹, one can find the following definitions:

-noun

1. ability to do or act; capability of doing or accomplishing something.
2. political or national strength: the balance of power in Europe.
3. great or marked ability to do or act; strength; might; force.
4. the possession of control or command over others; authority; ascendancy: power over men's minds.
5. political ascendancy or control in the government of a country, state, etc.: They attained power by overthrowing the legal government.
6. legal ability, capacity, or authority: the power of attorney.
7. delegated authority; authority granted to a person or persons in a particular office or capacity: the powers of the president.
8. a document or written statement conferring legal authority.

¹ <http://dictionary.reference.com/browse/power>.

9. a person or thing that possesses or exercises authority or influence.
10. a state or nation having international authority or influence: The great powers held an international conference.
11. a military or naval force: The Spanish Armada was a mighty power.

From this list, it is apparent that in common parlance power, control, influence, and legal or legitimate authority are closely related to one another, and that power is associated with both potential and actual control over others. In the social sciences, and particularly in political science, the concept of power has taken on a set of more specific meanings as part of an effort to achieve greater conceptual clarity, but also to serve as the basis for systematic inquiry.

Political philosophers have attempted to define power in various ways, and their efforts to do so have certainly influenced social scientists. Steven Lukes [1986] provides an excellent overview in an introduction to a volume he edited on power. According to Lukes, Bertrand Russell defined power as “the production of intended effects.” Max Weber defined it as “the probability that an actor in a social relationship will be in a position to carry out his own will despite resistance, regardless of the basis on which this probability rests.” Unlike Russell, Weber stressed the importance of achieving results in the presence of resistance. In a frequently cited article, Robert Dahl argued “A has power over B to the extent that he can get B to do something that B would not otherwise do.” [Dahl 1957] Dahl apparently agreed with Weber that an exercise of power required overcoming resistance.

Weber and Dahl cast their definitions in terms of an abstract relationship between two actors (or two sets of actors). Other scholars preferred to see power defined in terms

of social aggregates or communities. Talcott Parsons, for example, wanted power to connote a “generalized facility or resource in the society.” Hannah Arendt argued that power is “not the property of an individual” but “corresponds to the human ability not just to act but to act in concert.” [Lukes 1986: 3]

In an effort to improve upon the efforts of his predecessors, Lukes argues that “to have power is to be able to make a difference in the world. Those interested in power are interested in two questions: in the difference that is made, and in the making of the difference. Let us call the first an interest in the outcomes and the second an interest in the locus of power.” He asks other scholars to keep this distinction in mind. [Lukes 1986: 5]

Nagel vs. Lukes

In his attempt to build on the work of his teacher, Robert Dahl, Jack Nagel defines power as a relationship in which A is able to get B to do something that A preferred initially but that was initially against B’s preferences. [Nagel 1975] This definition incorporates the idea that B may initially resist A’s efforts, but allows that B might change his/her mind about a preferred outcome. So there are two possible ways for A to get B to do what A prefers: 1) to use coercion (the threat or actual use of force); or 2) to persuade B to change his/her mind about what B prefers. B’s preferences may remain unchanged after an act of coercion, but not after successful persuasion. Nagel’s definition, in short, allows for the possibility of a non-coercive form of power.

In subsequent work, Lukes develops a notion of power similar to Dahl’s and Nagel’s but different in one important way. Instead of defining power in terms of

preferences, Lukes defines power in terms of the *interests* of social actors. According to Lukes, “power must serve the interests of the powerful.” [Lukes 1986: 5] So, A has power over B if A is able to get B to act according to A’s interests and against his/her own interests and implicitly regardless of A’s and B’s preferences. This allows Lukes to argue that the power that he is interested in is guaranteed to be more objective than the power that can be observed using the Dahl/Nagel approach in that it is less subject to an arbitrary selection of conflicts over preferences that may not matter that much.

Under Lukes’ definition of power, however, an outside observer would have to be able to assign interests to two social actors and then observe their behavior in terms of those interests. If one adheres to Marxist or neo-Marxist school of thought, this is not problematic: indeed it is an advantage of the Lukes approach over the Dahl/Nagel approach. The key conflict of interest in Marxist thought is class conflict: so interests are determined by class membership. If one adheres to a more liberal philosophical tradition, however, the assignment of objective interests to individuals or groups by outside observers is considered both impossible and undesirable.

My own preference is to apply the Dahl/Nagel approach to relational power and so I will not use the Lukes approach here. Still, one needs to bear in mind the criticism of Lukes and others that not just any outcome where initial resistance is overcome can be used to assess relational power.

The Second and Third Dimensions of Power

Soon after Robert Dahl published his influential article on power, two scholars, Peter Bachrach and Morton Baratz, argued that Dahl’s definition excluded a type of

power that was harder to observe but which was still important. This type of power produced “non-decisions,” where there was no debate and no apparent conflict over preferences. The reason for this was that the powerful had suppressed debate and the powerless had no opportunity to voice their preferences. [Bachrach and Baratz 1962; Bachrach and Baratz 1963]

Bachrach and Baratz called the analysis of non-decisions the “second face of power.” Steve Lukes renamed it the second dimension of power and added a third in the first edition of *Power: A Radical Analysis* [1974]. The third dimension concentrates on the power that arises from agenda formation and agenda control. To overt and covert struggles, Lukes adds latent conflicts that are submerged only to re-emerge at a later time. In short, Bachrach and Baratz and Lukes consider Dahl’s approach to power to be too narrow. They want a broader conception even if that introduces additional difficulties for the empirical observation of power relationships.

Lukes’ third dimension of power has much in common to what later came to be called “structural power” or “metapower.” For example, Susan Strange writes that:

“structural power... confers the power to decide how things shall be done, the power to shape frameworks within which states relate to each other, relate to people, or relate to corporate enterprises. The relative power of each party in a relationship is more, or less, if one party is also determining the surrounding structure of the relationship....What is common to all four kinds of structural power is that the possessor is able to change the range of choices open to others, without apparently putting pressure directly on them to take one decision or to make one choice rather than others. Such power is less ‘visible.’”

“Today the knowledge most sought after the acquisition of relational power and to reinforce other kinds of structural power (i.e. in security matters, in production and in finance) is technology. The advanced technologies of new materials, new products, new systems of changing plants and animals, new systems of collecting, storing and retrieving information -- all these open doors to both structural power and relational power.”[Strange 1988, pp. 25-31]

Later in the same work, however, Strange argues that “Structural analysis suggests that technological changes do not necessarily change power structures. They do so only if accompanied by changes in the basic belief systems which underpin or support the political and economic arrangements acceptable to society.” [Strange 1988, p.123]

Soft and Smart Power

Joseph S. Nye’s concept of “soft power” may be seen as a way of talking about non-coercive power. Soft power, according to Nye, is the ability to achieve desired outcomes through attraction rather than coercion. According to Nye, the primary currencies of soft power are an actor’s values, culture, policies, and institutions. Soft power depends upon the extent to which these currencies are able to attract or repel of other actors, to make them “want what you want.” [Nye 2004a:] Soft power depends on the appeal of ideas and an actor’s ability to set the agenda in ways that shape the preferences of others. [Nye 1990]

Nye’s approach suggests that ICTs may matter because of the connection between them and the ease or difficulty of the diffusion of cultural ideas and artifacts. The easy access to digital text, audio and video means that anyone connected to the Internet, if not

subject to local censorship, may be exposed to ideas and cultural products of other cultures. The attractiveness of these ideas and products may win over hearts and minds of people who previously did not have access to them and thereby build sympathy for the culture that created them.

In later work, Nye argues that a judicious combination of hard and soft power is more effective than the application of hard or soft power alone. Hard power is not strictly coercive in Nye's view since it can rely on "inducements" as well as threats.² Nye calls the combination of hard and soft power "smart power." [Nye 2008: ch. 2]

Nye has used these concepts to criticize the policies of the Bush administration, which he believes neglected soft power entirely. [Nye 2002:] He also argues that the Bush administration's neglect of soft power resulted in a failure to take advantage of opportunities for using multilateralism in diplomacy. Not only were international organizations and regimes under-used during the Bush presidency, but also traditional alliances: unilateralism replaced multilateralism.

In addition, Nye uses the concepts of soft and smart power to argue that the United States had not declined in relative power as much as other scholars claimed, in part because of the growing importance of ICTs. According to Nye, the United States still had a lot of potential soft power:

The values of democracy, personal freedom, upward mobility, and openness that are often expressed in American popular culture, higher education, and foreign policy contribute to American power in many areas. [Nye 2002: 11]

² Klaus Knorr argues in *Power and Wealth* (1973) that inducements work as instruments of power because they either are or are perceived to be contingent upon certain actions by the recipient. Inducements involve an implicit threat to end the rewards when the desired behavior changes.

Nye's ideas on soft power have been criticized by realist scholars such as Kenneth Waltz, John Mearsheimer, Robert Kagan and Niall Ferguson. [citations needed here] These scholars question the effectiveness of soft power in determining the outcomes of strategically important conflicts. They tend to downplay the role of ideas in politics in general, and particular the ideas that are embodied in international regimes, focusing instead on the predominant role of military force in world affairs and facts imposed by placing "boots on the ground."

While Lukes agrees with Nye about the evils of focusing exclusively on force and coercion, he criticizes Nye for implying that certain forms of non-coercively winning hearts and minds (by persuasion or attraction) are better or more legitimate than others. He argues instead that it is difficult empirically to distinguish between "indoctrination and that ideal form of persuasion that consists in securing conviction through the freely exercised judgment of others..." [Lukes 2007: 94] So Lukes is dubious about the empirical usefulness of Nye's concepts while still entertaining the possibility that ideas and persuasion are important.

He is also skeptical about what he calls Michel Foucault's 'ultra-radical' view of power in which forms of subjugation are embedded deeply in all social institutions and arrangements. Lukes does not adhere to the Foucauldian premise that "rationality itself, enabling one to distinguish between what is true and what is false, is itself internal to alternative 'regimes of truth.'" [Lukes 2007: 96] Of course, if an actor or a group of actors could control a "regime of truth" for a given society, as Foucault implies, that actor would be enormously powerful. The argument rests on the plausibility of the assertion that such control is possible.

In short, the concept of power remains contentious and the debates go on. In the meantime, we can productively relate these various definitions of power and attendant theories about power to the question of the impact of the diffusion of ICTs by focusing on what can be observed and measured empirically remembering that this may not be the whole story.

Observing Power

There are basically three different approaches to observing power empirically: 1) power as a resource or capability, 2) power as a relationship, and 3) power as a structure. [Hart 1976]

Observing Capabilities

“In the power as capabilities approach, power is measured in terms of control over a resource (potential power) which can be converted in some manner into control over others or over outcomes (actual power). These resources, also called capabilities, may be connected with measurable phenomena such as economic wealth or population.” [Hart 1989, p. 3] The literature on community power in the 1960s that stimulated Robert Dahl and others to formulate the relational approach to power relied on this type of power assessment. One could identify local elites by focusing on variables that measured potential influence such as wealth, education, and prestige. Realist theories of international relations and works on “geopolitics” often rely on a power as resources approach. Power is measured or assessed in terms of certain “capabilities” which are a function of control over specific types of resources: e.g., land area, population, GNP, energy production, etc.

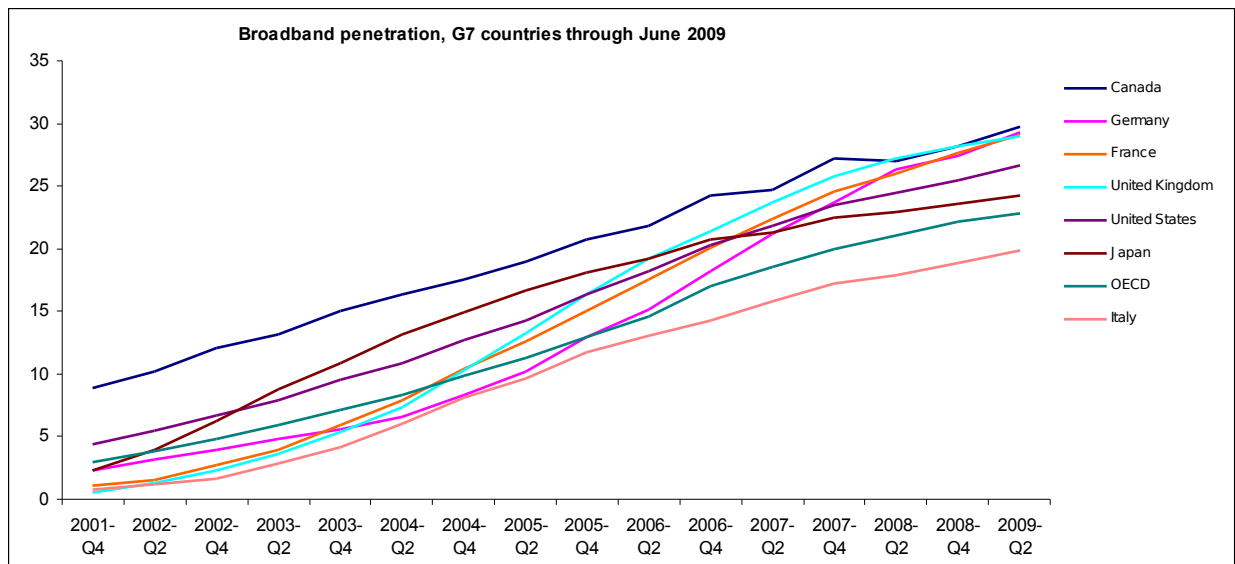
In recent years, besides the usual set of capabilities indicators used to measure power, technological capabilities are now viewed as potential power resources. Contemporary governments, for example, increasingly focus on measures of national investments in research and development (R&D), numbers of scientists and researchers, and patenting activity as indicators of potential technological capability. [NSF 2010, Overview] The relative success of a country in producing or selling ICT-related goods and services is also becoming a part of many national inventories of technological capability. [NSF 2010, ch. 6] Access to technology on the part of the citizenry is another indicator. The number of landline and cellular telephones and Internet users and Internet hosts is monitored by the Central Intelligence Agency in its annual publication, *The World Factbook*. [CIA 2010]

For example, in recent years, *The World Factbook* has highlighted the fact that the absolute number of cell phone subscribers (600 million) and Internet users (over 300 million) in China is greater than that in the United States. This fact came up at the beginning of 2010 when it was reported that Google might be forced to leave the Chinese market because of its objections to being required to censor the results of searches performed on its Chinese web site. The size of its domestic market for ICT-related projects gives the Chinese government some leverage over Google, but the growth in consumer preference for Google over Baidu (its main competitor in China) suggests the reverse, but only if the Chinese government decides to listen to those consumers instead insisting upon its right to censor Internet content.

The OECD Division of Science and Technology has been measuring indicators of ICT-related capabilities of its member states on an annual basis. It reports the household

penetration rates of broadband services, for example, which has been widely reported in the press, especially because those statistics reveal that the United States is not generally in the top ten but is in fact rather far down the list. Within the G7, the United States is not first (see Figure above). In fact, it is behind Canada, Germany, France, and the UK in broadband penetration. In the OECD, the US is also behind the Netherlands, Denmark, Norway, Switzerland, Korea, and Iceland. For the US not be first in this area provides ammunition to those political actors who want the US government to more actively promote the diffusion of broadband networks.

Figure 1. Broadband Penetration, G7 Countries through June 2009



Source: OECD, Broadband Statistics.

Opponents of such a strategy, including members of the Bush administration, cite factors such as the geographic distances between population centers in the US, the lower cost of broadband services to consumers, and others, in explaining away apparent US

backwardness in this area. The Obama campaign made broadband access an issue in the 2008 presidential election and the Obama administration included some broadband funds in the stimulus bill that was passed just after the election.

ICTs clearly have had an impact on power assessment using the capabilities approach. The assumption is that if a country possesses a vigorous computing and telecommunications equipment industry, then it can more easily access the benefits of ICT-related business activity. This is not just an assumption anymore, since there is increasing empirical evidence that investment in ICTs stimulates growth and economic productivity. Also, it is assumed that if a country has developed information networks that are many citizens can use, then the country as a whole will have informational advantages over others and may be better able to compete internationally.

Like all observational approaches that rely on measures of capabilities, the use of capabilities to assess ICT-related power depend more broadly on the assumption that potential power as indicated by control over resources can be translated into actual power either in the relational or the structural sense. Such translations are never perfect, however, so the appropriateness of the translation assumption remains a potential weakness of the capabilities approach.

For example, despite the evident inability of the US to remain in the top position among the industrialized countries in all areas of ICT-related business activities, US firms remain powerful and sometimes dominant players in key areas. In microprocessors, for example, Intel and AMD are the dominant firms, even though in other areas of the semiconductor market US firms such as memory devices US firms are not dominant. In PC operating systems and desktop packaged software, the largest share

of the market is still dominated by Microsoft. The two firms, as a result, have a lot to say about who can do what and how in the PC business. This leads some observers to speak about a new form of power peculiar to ICTs: the power to determine technical aspects of an ICT *platform* or *architecture*.

Observing Relational Power

Relational power approaches allow us to think about the domestic distribution of power in terms of the power of individuals *vis a vis* the government or other large institutions. Thomas Friedman has argued that individuals have been empowered *vis a vis* both governments and other large institutions because they now have access to information and knowledge via the Internet (helped by search engines). In arguing this, he joins a broader group of authors such as John Perry Barlow (former member of the *Grateful Dead*) who believe that the Internet and the information it carries “wants to be free.” [Barlow 1996] By that, they do not mean that access to information will be without economic cost, but rather that individual users will push hard for minimal barriers to access once they see the potential for free speech and individual empowerment. Barlow advocates a policy for governments of non-regulation. Instead, he argued that the Internet was inherently self-organizing and self-regulating. The school of thought associated with this argument later came to be called “Cyber Anarchism.”

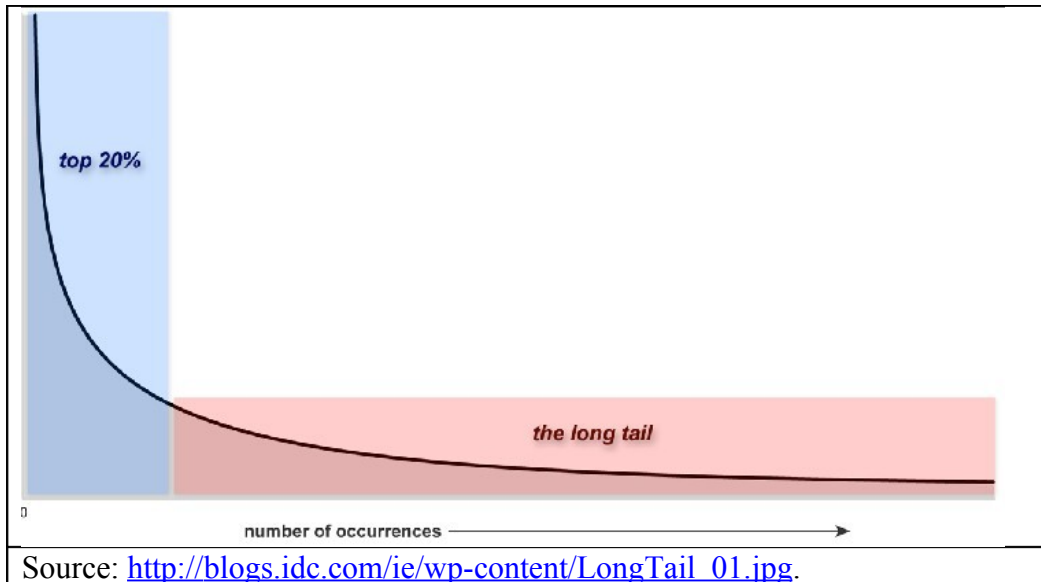
In contrast, some authors argue that ICTs present new opportunities for both governments and large corporations (among others) to centralize control and to consolidate their pre-existing power over others. Lawrence Lessig [2006], for example, argues that the technology itself has the potential to either empower individuals or to

empower large institutions. In the absence of organized efforts to preserve individual rights, the latter is more likely. An entire school of thought, the Surveillance School, starts from the premise that ICTs make it easier and cheaper for governments and corporations to spy on individuals and to act against those they consider to be threats [see, for example, Foucault 1975 and Lyon 2001].

One area of relatively intense research in recent years is the impact of ICTs on journalism and opportunities for free speech. There is considerable evidence that the diffusion of ICTs is undermining traditional print publishers while enabling a proliferation of on-line publications of various sorts. The flight of advertisers from newspapers, magazines, and network television to digital media is forcing a major restructuring of the world of journalism.

Some effort to measure the informational impact of ICTs has been associated with the analysis of the so-called “Long Tail” phenomenon. Popularized in a best-seller by Chris Anderson [2006], the long tail is simply an expected distribution curve called a Pareto Distribution (or power law) where the highest ranked services in terms of audience dominate the total but where as the ranking declines there are still many services commanding smaller and smaller audiences (see Figure 2). If the distribution has a “fat tail” – i.e. if a large percentage of service providers are in the right-hand half of the tail – then that is a sign of market diversity even if a small number of large providers dominate the market.

Figure 2. The Long Tail (Pareto Distribution)



So, the argument would be that if the diffusion of ICTs results in more fat tails in audience shares, then there will be greater diversity of viewpoints expressed in the associated media. This should be a plus for free speech and the relative power of individuals and small groups relative to larger institutions. It should be noted however, that there may not be a direct association between empowering smaller media outlets and genuine improvements in free speech and individual empowerment. One line of criticism stems from a comparative analysis of the content of smaller media outlets, where some analysts claim that that content is “edgier” but only in that it contains more sensational and salacious content and not politically controversial content. Indeed, scholars like Neil Postman have argued that the proliferation of media outlets results in so much entertainment that we are amusing ourselves to death. [Postman 1986]

Relational power at the international level also has been affected by the diffusion of ICTs. Non-governmental organizations (NGOs) for example have been quick to use email, blogs and other web sites to connect with their supporters and to use information and other resources to lobby governments and international organizations for their

preferred policies. ICTs are being used more and more intensively during political campaigns to inform supporters, raise funds, and get out the vote. Transnational political movements have new tools to connect their far flung members electronically. While governments and corporations have also jumped on the ICT bandwagon for disseminating information, they generally have not taken advantage of the interactive capabilities of ICTs, preferring instead to emphasize one-way flows from themselves to their audiences.

[section on cyber warfare and cyber diplomacy to be inserted here]

With the end of the Cold War, power relationships that were previously based on bipolar enmity or alliances were redefined to take into account the absence (with the notable exception of the People's Republic of China) of a Communist bloc. Part of that adjustment was an increased interest in avoiding the commitment of military resources in attempts to influence specific other actors in the international system. Thus, there is greater interest in economic sanctions as an alternative response to various forms of bad behavior, and we predict that sanctions involving a deprivation of access to informational resources will become another possible alternative to military threats as the information economy develops.

[to be included later: case studies of efforts to use economic sanctions and asymmetric threats related to ICTs: e.g. EU vs. Microsoft; Russia vs. Georgia; China vs. Tibet; Google and US government vs. China]

Observing Structural Power

International actors seem to be thinking more these days about the larger set of norms, rules, and procedures that govern the world political and economic systems now that the Cold War is over. They are more interested in exercising structural power. Part of this is due to the impact of economic globalization, itself a consequence of a series of policy decisions at the national and international level that resulted in reduced barriers to trade and investment flows. The stakes connected with control over the international regimes that embody globalization are clear to all, including the growing number of opponents of globalization.

In addition to the question of influencing the character of international economic regimes, there is the question of how to build international governance systems for ICT-related activities. There has been some excellent research on the domain name system and the international body that was in charge of overseeing registrars of domain names, the Internet Corporation for Assigned Names and Numbers (ICANN). The pioneering work of Milton Mueller (Mueller 2002) seems in particular to have stimulated other IR scholars to delve more deeply into this subject (see, for example, Braman 2006; Drezner 2007; and Singh 2008).

[expand discussion of ICANN and other ICT-related international regimes here and add discussion of multi-stakeholder regimes]

Information technologies embed institutional and cultural practices into the technology itself. Thus, a certain amount of structural power is implicit in the transfer of information technologies across national boundaries. The country which is the source of key new technologies, such as microprocessors, fast digital switches, operating system software, and the like, frequently gets to impose its institutional and cultural

arrangements on others. For example, Microsoft and Intel now dominate the personal computer market with the Windows operating systems on computers using Intel microprocessors. Apple currently dominates the markets for portable audio devices and smart phones. Google dominates the markets for search engines and on-line advertising. ICT companies and users in Europe and Asia have tried to compete directly with these firms but have been mostly unsuccessful and now are forced to adapt to the technological solutions that the dominant firms have imposed on them (as well as the rest of the world). This causes a certain amount of resentment and irritation that sometimes percolates up to the level of national governments. Yet it is arguably a result of the success of Microsoft, Intel, Apple and Google in anticipating the demands of the marketplace, and also, to some extent, making concessions to overseas users so that they will continue to buy their products even though they are not of domestic origin.

[other architecture issues: iPod/iTunes; Cisco routers; the Internet itself]

Authority and Legitimacy in Cyberspace

It would be wrong to talk solely about power and the distribution of power without at least mentioning that power does not necessarily equate with authority and/or legitimacy. [more to come on this]

Conclusions

The purpose of this paper was to review the literature on power and the distribution of power and to apply the concepts from that literature to assess the impact of the diffusion of ICTs on domestic and international distributions of power. While such

an assessment gets at the heart of much of the political science literature on ICTs, it is clear that the definition and observation of power is still a contested terrain.

Nevertheless, it is possible to use those concepts for systematic observation and even quantitative measurement of changes in the distribution of power as long as everyone remembers their limitations.

Here are some of the lessons from this exercise:

- The diffusion of ICTs has resulted in the use of new capabilities indicators to assess potential power domestically and internationally connected with access and use of technologies. These indicators already have had some affect on policy debates, such as the debate over broadband infrastructure in the United States.
- The diffusion of ICTs has altered the power relationships between citizens and their governments and other large social institutions, including multinational corporations. It is now easier to organize and mobilize people for political purposes who are separated by great distances.
- The diffusion of ICTs has helped to create or reinforce new types of relationships between governments and other international actors including the establishment of international regimes that have adopted a “multi-stakeholder approach” to international governance.

Some important modifications in received notions of power need to be made in order to successfully apply the lessons of power analysis to ICT-related activities. For example, the political science literature does not talk much about the role of technology in general and technological architectures or platforms in particular on the distribution of

power. Similarly, whereas control over conventional resources is often a zero-sum game, control over informational and cultural resources may not be. Power rivalries in the realm of knowledge and culture may be less dangerous and destructive than rivalries that center on territory or economic wealth. On the other hand, knowledge and cultural artifacts tend to be very close to the heart of what people care about, so the monopolization of control over these resources may be much more threatening than other types of power concentration.

We are not done with the long discussions about how power should be defined and observed. As political scientists, we should not shy away from the task, otherwise we might as well belong to some other branch of the social sciences. Some greater clarity has been achieved in conceptualizing power over the decades, and even greater clarity can be obtained by returning to the basics of power analysis. The diffusion of ICTs provides an opportunity to do this once again and a chance to revise the concepts and theories so that they can be applied fruitfully to a new set of human activities.

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