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To cite this article: Manuel Castells (1999) GRASSROOTING THE SPACE OF FLOWS, Urban Geography, 20:4, 294-302, DOI: [10.2747/0272-3638.20.4.294](https://doi.org/10.2747/0272-3638.20.4.294)

To link to this article: <http://dx.doi.org/10.2747/0272-3638.20.4.294>



Published online: 15 May 2013.



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## GRASSROOTING THE SPACE OF FLOWS

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*Abstract:* The “space of flows,” the concept I advocated a decade ago, represents the material arrangements that allow for simultaneity of social practices without territorial contiguity. In this article, I refer to a series of dimensions of autonomous expression of social meaning in the space of flows, with emphasis on electronic spaces, but in interaction with the space of places. I argue that a new dynamics is operating, a dynamics of interpenetration of uniformity and autonomy, of domination and resistance, and of instrumentality and experience, within the space of flows. The geography of the new history will not be made of the separation between places and flows, but out of the interface between places and flows and between cultures and social interests, both in the space of flows and in the space of places.

Our historic time is defined fundamentally by the transformation of our geographic space. This is a key dimension of the multilayered social and technological transformation that ushers in the so-called “Information Age.” Ten years ago, I proposed the concept of space of flows in order to understand such a spatial transformation. At that time, the aim was to acknowledge the reality and the significance of the transformation without yielding to the simplistic notions of futurologists announcing the death of distance and the end of cities.

Empirical evidence continues to show that new information and communication technologies fit into the pattern of flexible production and network organization—permitting the simultaneous centralization and decentralization of activities and population settlements—because different locations can be reunited in their functioning and interaction by means of the new technological system. This system is created from telecommunications, computers, and fast reliable transportation systems, as well as dispatching centers, nodes, and hubs. Therefore, new communication technologies allow for the centralization of corporate activities in a given space, precisely because they can reach the whole world from the City of London and from Manhattan without losing the dense network of localized, ancillary firms as well as the opportunities of face-to-face interaction created by territorial agglomeration.

At the same time, back offices can decentralize into the suburbs, in newly developed metropolitan areas, or in some other country and be part of the same system. New business centers can be created around the country and around the world that always follow

the logic of clustering and decentralizing at the same time and of concentrating and networking, thus creating a selective world wide web of business services. The new industrial space is characterized also by its similar pattern of spatial dispersion of activities, concentration of innovation, and strategic decision-making—around what Peter Hall and I propose to label as “milieux of innovation,” following the evidence gathered by a series of studies undertaken in the 1980s at Berkeley by the Institute of Urban and Regional Development. The new media also have become built around the double process of globalization of capital and customization/networking of information and images that respond to the localization of markets and segmentation of audiences. In territorial terms, the age of information is not just the age of spatial dispersal, it is the age of generalized urbanization. In the next decade, it is likely that most people of the world will be living in the cities for the first time. Yet cities are, and will be, of very different kinds depending on cultures, institutions, histories, and economies, but they will continue to share a spatial logic that is specific to the Information Age. This logic is characterized by the combination of territorial sprawl and locational concentration. Thus, intrametropolitan, interregional, and international networks connect with global networks in a structure of variable geometry that is enacted and modified by flows of information and electronic circuits and fast, information-based, transportation systems. In the last decade, studies by Peter Hall, Peter Daniels, AnnaLee Saxenian, Michael Batty, Jim Wheeler, Barry Wellman, Jeff Henderson, Roberto Camagni, Stephen Graham, Marvin Simon, Amy Glasmeier, and so many other scholars have substantiated, empirically the emergence of a new spatial structure. This structure is defined by articulated territorial concentration and decentralization in which the unit is the network. This particular model of spatial organization, which seems to be characteristic of the Information Age, is the model that I tried to conceptualize 10 years ago as the space of flows.

### THE SPACE OF FLOWS

As I understand it, “space of flows” means that the material arrangements allow for simultaneity of social practices without territorial contiguity. It is not a purely electronic space nor what Batty has called a “cyberspace,” although cyberspace is a component of the space of flows. First, it is made up of a technological infrastructure of information systems, telecommunications, and transportation lines. The capacity and characteristics of this infrastructure and the location of its elements determine the functions of the space of flows, and its relationship to other spatial forms and processes. The space of flows is also made of networks of interaction, and the goals and task of each network configure a different space of flows. Thus, financial markets, high-technology manufacturing, business services, entertainment, media news, drug traffic, science and technology, fashion design, art, sports, or religion constitute a specific network with a specific technological system and various territorial profiles. So they all operate on the logic of the space of flows but they specify this logic.

Second, the space of flows is made up of nodes and hubs. These nodes and hubs structure the connections, and the key activities in a given locale or locales. For instance, Wall Street or Ginza are such nodes, as well as Cali and Tijuana in their specific trade, or Berkeley, Stanford, and MIT in computer sciences. Hubs are communication sites (e.g., airports, harbors, trains, or bus stations) that organize exchanges of all kinds, as they

increasingly are interconnected and spatially related. However, what characterizes the new role of these hubs and nodes is that they are dependent on the network, that their logic depends on their place in the network, and that they are sites to process signals that do not originate from any specific place but from endless recurrent interactions in the network.

Third, the space of flows is also made of habitats for the social actors that operate the networks, be it residential spaces adjacent to the nodes, protected and secluded spaces of consumption, or global corridors of social segregation separating these corridors from the surrounding places around the globe (e.g., VIP lounges, the virtual office, computing on the run, standardized international hotels).

Fourth, the space of flows comprises electronic spaces such as websites, spaces of interaction, as well as spaces of one-directional communication, be it interactive or not, such as information systems. A growing proportion of activity is from the web and the visual design of websites, as well as the structure of an operation of their content is becoming a fundamental frame for decision making, information making, and communication.

#### SPACE OF PLACES

I have described the new spatial structure of the Information Age, the space of flows. But we really need to know that not all the space is organized around the space of flows. As was the case in the whole history of humankind, most people live, work, and construct their meaning around places. I define a place as the locale whose form, function, and meaning are self-contained within the boundaries of territorial contiguity. People tend to construct their life in reference to places, such as their home, neighborhood, city, region, or country. This is not to say that the local community is thriving. In fact, all over the world, research shows that there has been a process of individualization and atomization of place-based relationships. The loss of community is the founding theme of urban sociology, since the Chicago School. Yet you may have no community, but still refer to your place as your main source of experience. Social organization and political representation also are predominately place based. And cultural identity is often built on the basis of sharing historical experience in a given territory.

When analyzing spatial transformation in the Information Age and showing the emergence of a new spatial form (i.e., the space of flows), I emphasized the persistence of the space of places, as the most usual form of spatial existence for humankind. I also observed that, while most dominant activities were constructed around the space of flows, most experience and social interaction was and still is organized around places. When using the term "dominant activities," I am referring to (1) financial flows, (2) management of major corporations in services and manufacturing, (3) ancillary networks of firms for major corporations, and (4) media, entertainment, professional sports, science and technology, institutionalized religion, military power, and global criminal economy. Thus, I added that the constitution of the space of flows was in itself a form of domination, since the space of flows, even in its diversity, is interrelated and can escape the control of any locale, while the space of places is fragmented, localized, and thus increasingly powerless vis à vis the versatility of the space of flows. The only chance of resistance for localities is to refuse landing rights for overwhelming flows—only to see that they land in

the locale nearby, therefore inducing the bypassing and marginalization of rebellious communities.

This was my analysis some time ago, which has been presented in various publications during the last decade. I still sustain most of this analysis, and I think it can be backed up empirically. However, an analysis of transformation of space in a given historical moment—that is, the moment of the dawn of the Information Age—should not be cast in stone as an iron rule of spatial development. Yes, there are two different forms of space, flows and places. Yes, the space of flows is historically new in its overwhelming prevalence because it can deploy its logic through a new technological medium. Yes, dominant activities in our society are organized around the logic of the space of flows, while most, and the most powerful forms of autonomous construction of meaning, and social and political resistance to the powers that be are being constructed, currently are around places. But, two major qualifications may be introduced:

(1) The space of flows includes some places. Indeed, the space of flows is not simply an electronic space. Electronic spaces—such as the internet or global communication media—are but one dimension, however important of the space of flows.

(2) Both electronic spaces, and the space of flows at large, are not organized exclusively around and by social/economic/cultural domination. Societies are not closed systems, they are always open processes, characterized by conflict. History, in fact, is a very tiresome experience. It never ends, against the claims of the neoliberal illusion. Wherever there is domination, there is resistance to domination. Wherever there is imposition of meaning, there are projects of construction of alternative meaning. And the realms of this resistance, and this autonomous meaning are ubiquitous. Which means, concretely, that while the space of flows has been produced by and around dominant activities and social groups, it can be penetrated by resistance, and diversified in its meaning. The grassroots of societies do not cease to exist in the Information Age. And after an initial moment of exclusion and confusion, people and values of all kinds are now penetrating and using the space of flows, the internet and beyond, in the same way that the Parisian Champs Elysees dreamed by Hausman to escape the populace of the rive gauche, have become, in the 1990s, the hang out place for the festive, and multiethnic young lot of the Paris banlieues. While the space of flows remains the space in which dominant activities are spatially operated, it is experiencing at the same time, the growing influence and pressure of the grassroots, and the insertion of personal meaning by social actors, in a process that may alter the cultural and political dynamics of our societies and, ultimately, may alter the space of flows itself. So let me review the main dimensions of this grassrootsing of the space of flows.

### THE SPACE OF FLOWS AND THE GRASSROOTS

First, I will refer to a series of dimensions of autonomous expression of social meaning in the space of flows, with emphasis in electronic spaces, but in interaction with the space of places. First is personal interaction, people using the net for themselves and electronic mail as recuperating letter writing as a form of communication. And people are finding ways to be together with much more diversity and importance than has been the experience before in history: chat groups, multidimensional communication, cultural expressions of all kind, people building their websites. People build their fantasies, but they also

experience their needs and exchange their information. They are inhabiting the space of flows and thus transforming it. Am I talking maybe about a small global elite? Well not so small, and not so elite.

A second dimension for autonomous expression is represented by purposive, horizontal communication, not just personal feelings of casual communication. Horizontal communication occurs among people and across countries, and establishes information systems that are alternative to the media. They are in fact doubling the media. There is, indeed, much gossip and irresponsible information. As you know, the news that triggered one of the latest scandals relating to President Clinton was first sent from the internet through a news bulletin, which is a one-man operation out of his home office in Los Angeles, while Newsweek was weighing the opportunity of the publication. There are people and institutions very concerned about the lack of control of information in the net. Everywhere, many governments are terrified of losing control of information, a fundamental source of power throughout history. They usually argue in terms of controlling child pornography. I think child pornography is terrible, but what happens in countries like France or Spain for instance is that it is perfectly legal to sell child pornography. It is not legal to produce the images nor to hire or kidnap the children to do it, but selling it is not a problem. But you cannot do it on the internet. Why? Because the internet is a mass media, or so the statist argument goes. The fact is that horizontal communication in the internet by bypassing both the media and governmental controls is becoming a most fundamental political issue, which ultimately reflects who we are collectively, as a society. And if some of us are enjoying child pornography, if we are this kind of monster, this appears reflected in the internet. The internet brings us face to face with the mirror of who we actually are. So I would rather work on ourselves rather than close down the net. The fight is against the self not against the net.

Third, there is a fast growth of networks of solidarity and cooperation in the internet, with people bringing together their resources, to live and to survive. To give an example, the senior net in the United States not only brings information (e.g., medical information to counter the monopoly of medical information by doctors) and resources together; it also develops solidarity ties between senior people, thus reinforcing the group to which all of us belong, or will belong, if we are lucky. Thus, at the time the welfare state, at least as constructed in the last half century, is being challenged economically and politically, people are reconstructing networks of solidarity and reflecting/debating about them at the same time.

The fourth dimension is social movements. The net is used increasingly by social movements, of all kinds, as their organizing ground and as their privileged means to break their isolation. The greatest example here and one that has become classic is the Zapatistas in Chiapas, Mexico. Without fully presenting the case, on which I have written in my latest book, let me remind you of some interesting facts on this social movement. Zapatistas organized solidarity groups around the world on the internet. And they very effectively used the internet to diffuse their information and to obtain interactive communication between their different solidarity groups. They also have used the internet in a protective way to fight repression when, in February 1995, there was a major military offensive that forced them to escape to the forest. They sent a message over the internet asking everybody to flood the White House with messages because at that point the White House had put our money into the Mexican bailout. A major crisis in Mexico would jeopardize the

entire stability of the region, ultimately wasting United States taxpayers' money. So, in one day, over 30 thousand messages came to the White House. That does not mean that street demonstrations in front of the White House are not important, but you cannot organize them in 24 hours; and in this particular case, it was a matter of life and death in these 24 hours. This ability of the Zapatistas to work on the net does not come from Marcos as people would say, even if he was a communications professor or from the Indian communities. It came from women's groups in Mexico. In 1993, women's groups organized an internet network in Mexico to support women's solidarity funded by the Catholic church and organized instrumentally by the Institute of Global Communication in San Francisco, a group of progressive computer people out of Silicon Valley. The global communications institute and women's groups sent several people to Chiapas, where they organized an extension of the women's network that was called La Neta. La Neta is an interesting expression because, on the one hand, it is the Spanish feminine term for the net; but also in Mexican slang it means the truth. So this La Neta network branched out in Chiapas and trained a number of people in Chiapas that human rights groups were the ones who were able to link up with the Zapatistas and provide both the technological and knowledge support for their internet operations.

However, not only progressive movements are on the internet. Everybody is on the internet and our societies are on the internet. The internet has played a major role in the development of American militia groups. The internet is as real as life itself. Increasingly, global movements of solidarity, environmentalists, human rights, and women's groups are organized on the internet again on the basis of local/global connection. One of the greatest and latest examples in the United States was the Fall 1997 One Million Women March organized by two Black women in Philadelphia. There was practically no organization, no sponsorship, and yet a small group of women in Philadelphia went on the net and called a demonstration, obtaining an extraordinary level of support and mobilization. But going to a place, I think is the most interesting thing. The space of flows is not just being in the net. It is to organize in the net to be in Philadelphia on a given day—that is, using the net to control space.

Fifth, linkages are a development that we have to pay close attention to, increasing linkages between people and institutions in an interactive process. The creation of what some people call virtual cities are renewing local governments and citizen democracy. We have some relatively old experiments, such as in 1986, Santa Monica's PEN program allowing public debate between citizens—including debates on major issues such as homelessness in Santa Monica, with the homeless themselves being able to get into the debate. European cities are organizing participation in information systems. Graham and Aurigi have studied these experiments and say that they usually are one-directional information systems. So still it is not a full-fledged participatory democracy; it is more information than participation and democracy, but they are still evolving and changing.

And there is potential for much more. I am personally struck by the experience of Amsterdam's Digital City, an autonomous group originally supported by the municipality of Amsterdam. It is a private foundation that has organized a system of citizen participation and citizen interaction. You have to register to take part, anyone can visit the site, but to really participate and go into houses, you have to be registered. By 1998, they had 80,000 fully registered, participating "residents." They have activities organized around different squares: larger squares and micro-squares. Each square relates to different activ-

ities (e.g., cultural politics, sports, business, homes). People build houses, sometimes also marry, initiate recall elections, certainly become involved in debates, and from time to time link these activities to real life in a very close interaction. So the digital-city experience has shown the possibility of mobilizing the population at dramatically different levels from the most political activist to chat groups. What strikes me too is how much the group is connected to the local, political, and spatial experience in Amsterdam. On the one hand, this is a movement that grew out of the squatters movement in Amsterdam. Caroline Nevejan and Marlene Strikker, the two women who lead the movement and who lead this program, were members of this squatters movement and, in their own view, they have not changed their values much. They have continued their ability to mobilize people and change society through the new medium without abandoning the idea of the city as a place.

Even symbolically the city has ceded them as their headquarters place one of the most historic buildings in Amsterdam, the Waag, the building that in the 16th century used to close the canals for trade when ships were arriving in Amsterdam. This building also housed the School of Medicine where illegal autopsies were being performed because of the church's repression. In that building, there is a room where Rembrandt painted his famous "Lesson of Anatomy." It is in that very room where the server of the digital city is located. I think this kind of historical continuity and this linkage between history and information flows, place and electronic networks, is representative of something new happening in the space of flows.

Another example of this linkage between institutions, civil society, grassroots groups, something that is less known because it is only in the project stage, is the Barcelona Internet Citizen Project. This project is being sponsored by the city of Barcelona and linked to a mega-project that they called Forum 2004. It is in fact a good example of connecting the global to the local, internet to grassroots. Remember that the 1992 Olympic games created a great transformation in Barcelona. Among other things, Barcelona opened up to the sea by building a whole new neighborhood, connecting seaside promenade and beaches to the harbor. Now a group of local leaders, with the support of the municipality, have conceived a new project, an Olympics of sort: the Forum 2004, with the sponsorship of UNESCO and the pope. Over the course of six months in 2004, the project will plan to bring in half-a-million young people from all over the world into Barcelona in 2004 to discuss what to do with the world in the 21st century. And of course they need to build a city to organize this project, therefore another 20 km of seaside development.

Furthermore, the project includes the idea of linking up the world to those thousands of youths, sharing the debate on the net. For the Barcelona citizens to be apt to the task, there is a project to set up an internet Citizen center to train and diffuse the uses of the internet to people at large. Most people in Barcelona are unaware of the potential uses of the internet, so that a literacy campaigning directly linked to an event and with the purpose of participating in a global debate could just be a key trigger in bringing Barcelona as a whole into the Information Age.

As you can see, there is a gradual opening up of the Information of Age to different avenues. So through a blossoming of initiatives, people are taking on the net without uprooting themselves from their places. And through this practice, they transform both forms of the space. However, are we talking only about a small elite? Are people not being in fact massively excluded from the net? Well first of all, the recent data show there



is a large number of elites, about 128 million users in 1998. Yes, data are shaky, but the same shaky data were indicating about 30 million users in 1995/1996. What seems to be a little more solid is the rate of diffusion among users, which seems to be nearly doubling every year. By the end of 2000, we should be approaching 500 million internet users. Serious experts in the communication business predict about 1 billion users by the middle of the first decade of the 21st century, considering a slow down in the rate of diffusion when less-advanced countries and less-educated and less-affluent groups become the new frontier of expansion. The computer capacity and the telecommunications capacity is already there, the issue is how to bring people into the net. And for what?

Yet there is certainly a social bias in terms of who uses the internet. There is a gender bias, with the proportion of men to women being three to one. There is also an ethnic bias, with ethnic minorities having much lower rates of the internet use, although in the case of Hispanics in the United States, the rates of incorporation are extremely high. There is a country bias too. In fact, Scandinavia is advancing over everybody else. Finland has decided to become the first Information Society in the world. Projections are that by the year 2000 there will be more websites in Finland than Finnish people. Still, in absolute terms, there is a dominance of the internet by American users.

However, more importantly, the bias is not only in terms of use, but use for what, that is the level of education required to look for and retrieve information. I have proposed a notion that we are living in a world that is made of the interactive and the interacted. We interact but many people are just interacted. For many people, the net may become an extension of a multimedia-based, one-directional system, so that they may receive some basic information to which they just have to react, as in some marketing device. However, if we look historically into the diffusion of information and to the diffusion of technology and to the ability to upgrade the level of consciousness and the level of information, there has always been a connection between open-minded, educated social groups and the uneducated masses that through this connection become educated. As in the historic example of the development of the labor movement, printing workers were critical in that they knew how to read, where most workers did not know how to read or what to read. Printing workers were the ones that in many countries created the basis for self-training, self-development, and self-organization of these uneducated masses. And this is happening now in many countries. Low-income communities are being brought into the internet in different ways by local community groups.

I also personally know some important experiences that are highly developed as in the working-class periphery of Barcelona, an area called the lower Llobregat, in which the unions and the municipalities decided that they have to move into the Information Age and develop social struggles and social consciousness. They have created a cultural organization, and a network of internet-based, publicized activities, around a journal titled "La Factoria," which you can access on the net. Thus, they have started a process of mass education of social debate, mixing the print, the net, the city, the factory, and ultimately grassrootsing the net.

Finally, even if there is still a minority of users (but a minority that is going to be numbered in the hundreds of millions), their eruption in the net, with the creative cacophony of their social diversity, with the plurality of their values and interests, and given the linkage between places and information flows, transforms the logic of the space of flows, making it a contested space. And a plural and diversified space.

## CONCLUSION

So, whither the theory of the space of flows? Not necessarily, because this theory was always based on analyzing the linkage between electronic space and places through networks of flows. This is indeed, increasingly, the space in which most important activities operate in our societies. There is interaction, there is connection. Moreover, it remains true, I think, and can be empirically sustained that strategically dominant activities are operated essentially through the space of flows, and that global elites ensure their domination in this process, bypassing segmented, isolated localities. And trenches of resistance to the domination of flows of capital and information are being built primarily around places.

However, new dynamics are operating, dynamics of interpenetration of uniformity and autonomy, of domination and resistance, and of instrumentality and experience, within the space of flows. So, historically produced forms of space, even as complex and new, such as the space of flows, by their very existence are transformed through the process of their enactment. They become contested spaces as well, freedom is carved in their hallways, and cultural identity is built, and affirmed, in the net. So, the geography of the new history will not be made, after all, of the separation between places and flows, but out of the interface between places and flows and between cultures and social interests, both in the space of flows and in the space of places. The attempt by capital, media, and power to escape into the abstraction of the space of flows, bypassing democracy and experience by confining them in the space of places, is being challenged from many sources by the grassrooting of the space of flows.