

# The Revenge of Place

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The special qualities of particular places are more important, not less so, in the digital electronic era. This will come as a surprise to acolytes of the now-standard e-gospel – the narrative of an electronically shrunken planet, a weightless economy, and an era of anything anywhere. Here is my counter-narrative; I offer two scenarios and an analysis.<sup>1</sup>

## Scenario 1: Being Vegetable

Sometimes the digital revolution makes me feel like I've been transported to VatVille.

Imagine a large collection of brains in vats. Let us equip each vat with an autonomous system for extracting necessary energy and nutrients from the surrounding environment – not so crazy, since that's exactly how trees work. And let us also provide fast Internet connections, IP addresses, and effective interfaces between the wet stuff and the silicon. That's VatVille.org. (I ran Vatican.org through Network Solutions, but it's taken.)

These brains have their limitations, but they can lead surprisingly interesting and productive lives. They can function efficiently as information workers (programmers, Web page designers, stock traders, or the like) plugged into the global digital economy. They don't have mattresses to put their earnings under, but they can accumulate them in online accounts, they can transfer them as they wish, and they can spend them through online transactions. They are far from powerless to affect the physical world; it's simple for them to order the transportation of physical materials and goods from place to place, and they can even operate a wide variety of online telerobotic devices – ranging from IP-enabled light switches to advanced weapons systems. They can inspect their surroundings through webcams, and they can download text, music, and video files for their entertainment and cultural development. For social interaction they have online communities, chat rooms, instant messaging, and even shared virtual worlds within which they can represent themselves by means of avatars. On the Internet, nobody knows you're a brain in a vat!

As far as I can tell, VatVille.org has little inherent geographic logic, and it can scatter itself across the surface of the globe in pretty arbitrary ways. It is hard to imagine a brain in a vat developing a preference for a particular location, since the sights, sounds, and facilities of *any* location in the network are equally accessible at *all* locations in the network. It is not even clear (I will leave this one to the philosophers) that the brains in vats would have any conception of dwelling somewhere in particular; they park their core atoms at specific spots, it's true, but in another sense they exist everywhere at once.

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If you look at VatVille.org from the outside, though, you can probably discern some rudimentary spatial patterns. Certain spots on the surface of the earth provide better access to energy and nutrients, and are less subject to hazards and inconveniences than others, so you find vats more thickly clustered there. And, since it is cheaper to connect vats to nearby vats than to distant ones, you will find clusters around the locations of the earliest, pioneer vats, with high-speed backbones forming cluster-to-cluster connections. This clustering pattern is reinforced if the vats are not fully autonomous, but depend on supplies of electricity, water, and other needs via networks from central supply points. You can imagine developers selling gated vat farms.

I feel most like an inhabitant of VatVille.org when I'm alone in a hotel room, in a strange city, at night. My immediate surroundings provide few clues of where I am. The minibar, the little basket of toiletries, and room service supply my basic needs. The television provides the same satellite channels pretty much anywhere. The telephone and (increasingly commonly) the high-speed network jack establish fast, two-way connections to the global digital telecommunications networks. My laptop computer creates the brain-to-bits interface. I can be all that a brain in a vat can be – picking up from where I left off in the last vat. And pretty soon I will move to a smaller but otherwise similar vat – an airline seat.

The now-ubiquitous high-tech worker cubicle is another good approximation to a brain-vat. Fill your coffee cup, put on your Walkman, log in, and it doesn't much matter whether you're in Sunnyvale or Bangalore.

For me getting vatted is, at best, a tolerable temporary condition. (I don't want to live like a hydroponic tomato.) But proponents of teleserviced "electronic cottages" seem to *want* to be brains in vats – 24/7/365. In this latest enactment of the anti-urban, agrarian-yearning subplot of the American dream, these nouveaux-Thoreaus imagine themselves contentedly telecommuting from their postmodern cabins, far from the big city's problems, disturbances, and people not like themselves. At the survivalist extreme, they are grimly prepared to keep the outside world at bay; brains in vats with guns.

### Scenario 2: Being Like a Bee

At other times, the digital revolution seems to dump me in SwarmCity.

I first felt this when, one day, I was visiting Hadrian's Villa at Tivoli with a large group of friends and colleagues. We all had our tiny cell phones – switched on all the time, in the Italian manner. We scattered over the vast site in seemingly disorganized fashion, but we found ourselves continually summoning one another to points of interest, and forming ad-hoc clusters which quickly broke up and reconfigured, on the fly, as we pursued our individual but not-unrelated interests and schedules. When someone informed us that there was a particularly fascinating discussion at some spot, we immediately converged on it. We took advantage of our rudimentary electronic intelligence system, and we swarmed.

Members of natural swarms, such as flocks of birds and schools of fish, depend upon direct observation of their terrain and of each other. The behavior of the whole group emerges (by way of some satisfyingly elegant mathematics) from the numerous interactions among the behaviors of the constituent individuals.<sup>2</sup> It was the same with us, but our interconnections were electronically mediated.

A short while later I began to notice Japanese and Nordic kids similarly swarming through city streets. Their technology was slightly more advanced, it turned out. They were using their cell phones for wireless text messaging. As previous generations of rebellious teenagers had

occupied their hands with cigarettes, these kids were into DoCoMo and Nokia. To watch them, you would think that the opposable thumb had evolved specifically for one-button control of handheld devices.

Then, when the demonstrations against the WTO hit Seattle, I saw SwarmCity emerge full-blown. As the situation changed from moment to moment, the demonstrators used cell phones to coordinate instant gatherings at current sites of action. By now – several demonstrations later – the cops have figured out the best way to thwart this sort of strategy; you confiscate the phones.

Where brains in vats represent the endgame of sedenterization, swarmers are electronically enhanced hunter-gatherers. They forage over their chosen terrains for currently available food, fuel, campsites, shelter, points of interest, the companionship of their friends, opportunities for confrontation, customers, victims, raves, or whatever. They need mobility, either by being unencumbered on foot or through access to appropriate vehicles. And they become more formidable as their electronic intelligence repertoire grows – from simple voice and text communication to video, GPS positioning, navigation and tracking systems, mobile Web access, and geographically filtered delivery of information.

For really hardcore swarmers, cities don't need visible landmarks and edges to provide guidance, or the qualities of legibility and memorability that Kevin Lynch taught us to value in *The Image of the City*.<sup>3</sup> They don't even need very much signage. Swarmers simply rely upon their electronics to deliver relevant information at the right moment, to guide them where they want to go, and to tell them what they will find when they get there. In SwarmCity.org, landmarks are physical places that (maybe temporarily) have lots of electronic pointers in their direction. And obscure backwaters are just places without pointers.

Lately, some of my hyper-ironic, thoroughly post-modernized Manhattan friends have been playing an extreme swarming game. For them, the landmarks are not the famous buildings that the tourists come to see. Instead, they are the inhabitants who – for the Warholian quarter-hour, at least – count as celebrities. When players spot these walking icons, they broadcast text messages; “George Clooney at the produce rack in Balducci's!” For a few minutes, that's the place the electronic pointers pick out.

I think I got my swarmer spurs when I flew into DFW airport late one night, picked up a rental car with an electronic navigation system, and let it guide me through the blandly undifferentiated landscape of suburban Dallas (completely unfamiliar terrain for me) to my destination. I would never have got there if the destination had not appeared on the guidance system's menu – in other words, if it had not been an electronically recognizable landmark. When I arrived, I had no mental map of where I had been. I might as well have been robomouse, blindly tracking signals from electronic cheese.

### Analysis

VatVille and SwarmCity are patterns that emerge when some of the familiar constraints on the locations of activities within the urban fabric are electronically loosened.

In general, we find particular activities at particular urban locations for some combination of three basic reasons. First, there are *fixed attractions* of the location – affordances that exist right there, and are mostly unaffected by what happens elsewhere. In a dry region, for example, the fixed attraction may be a source of water; settlements are typically found at oases. Other fixed attractions include fertile agricultural land, mineral resources, favorable climate, scenic beauty, and historic resonance.

Second, there are *accessibility advantages* – those that derive from convenient, efficient connections to related activities. Thus crossroads, ports, and other nodes in transportation networks have traditionally offered economic benefits, and have been favored locations for settlements. Retail stores are located where there are plenty of customers, offices are located where workers can easily commute to them, and so on. These advantages are *relative* to conditions elsewhere in the network; if other activities relocate, if links in the network are broken or become clogged, or if new links are established, then the accessibility advantages of a particular location may rise or fall.

Third, there are *stability advantages*. A building to accommodate an activity represents an investment at a particular location, for example. If there are no prospective purchasers of it, moving from that location means a loss of that investment. So there is advantage in staying put.

Essentially the same logic applies at building scale. By virtue of their sizes, shapes, orientations, views, and so on, rooms have fixed attractions that suit them to accommodating particular activities. By virtue of their relationships to the circulation system they also have accessibility advantages. And it takes time and effort to move furniture and equipment from one room to another, so there are advantages to keeping the uses of spaces stable – not moving things around too much.

The distinctions among these types of advantages are clear enough to be useful for our purposes here, but they are not absolute. It is worth noting, parenthetically, for example, that accessibility advantages begin to look like fixed attractions when transportation networks and activity distributions are relatively stable over long periods. Similarly, apparently fixed attractions may disappear when resources run out, when technologies change, when overwhelming competition develops from unexpected quarters, and so on.

That's how architects and urban designers like to think about it. Economists prefer an equivalent framing of the issue in terms of costs, roughly as follows.<sup>4</sup> There are *fixed costs* of locating particular activities at particular locations; think of these as yearly rents. Then there are *interactive costs*; think of these as yearly transportation bills for commuting to work, for moving raw materials to a manufacturing location and finished goods from it, and the like. Finally, there are *move costs*; think of these as mover's bills and other relocation expenses resulting from transfer of an activity from one location to another. The total yearly cost of assigning some set of activities to a set of locations can be found by summing the fixed and interactive costs. If you allow movement of activities, you can also compute the total cost of a *sequence* of assignments; take the cost of each assignment over the time for which it exists, and add the move costs resulting from the transition between each assignment and the next.

The formulation of the economists clarifies the tradeoffs. Often, for instance there is a tradeoff between fixed and interactive costs – between highly accessible locations with correspondingly high rents, and less accessible locations with lower rents but higher interaction costs. Similarly, an activity may be “trapped” at an expensive or undesirable location because the move costs are too high. And the desirability of a potential move may be evaluated by calculating the time needed for it to pay off through more favorable fixed and interactive costs.

Let us now look at VatVille in these terms. It represents a condition under which you can get anything you want anywhere, and that's just as well, since it is very hard to move. More specifically, interactive costs are independent of distance, and move costs are high. Strategies

for autonomously living off the land – collecting rain water, growing your own food, employing photovoltaics and windmills for electricity generation, indifference to the outside world – are one way of getting to VatVille; these simply reduce or eliminate the need to interact. Highly efficient networks connected to fixed delivery devices – such as high-bandwidth digital telecommunications systems connected to desktop computers – provide another way; these reduce the friction of distance. You can drop out, you can plug in, or you can go for some combination of the two.

SwarmCity, it turns out, is the converse. This pattern emerges when local attractions and accessibility advantages matter a lot and may vary dynamically, when the availability of locations for assignment of activities fluctuates, and when good intelligence combined with very low move costs provides the opportunity to respond quickly as opportunities emerge. The produce rack at Balducci's is of great interest for the fleeting moment that the celebrity is there, an alert cell phone user provides the intelligence, and fleet-footed Manhattan pedestrians can swarm to the spot to gawk. Similarly, the search for a hotel room or a parking spot goes better if you have a continually updated electronic guide to current availability and price.

Think of SwarmCity as a dynamic pattern rather than a static one – a sequence, over time, of swift reassignments of activities to new locations. (You might imagine computer RAM, with its fixed array of locations and continually reassigned contents, as the most extreme version.) It is a pattern that effectively exploits distributed intelligence (the intelligence of the individual swarmers), that allows particularly efficient use of available real estate, and that encourages management of demand for both sites and channel capacity through dynamic variation of prices.

Electronically mediated swarming can take place at a variety of geographic scales and over a range of timeframes. Pedestrians can swarm, over relatively local patches of terrain, when they have portable electronic devices such as cell phones and wireless PDAs. Drivers can swarm over metropolitan road networks when they have phones and electronic navigation systems. Office workers can swarm over temporarily assignable desks or cubicles when they have wirelessly networked laptop computers. GPS-equipped campers can swarm over national parks. And electronically networked corporations can, increasingly, swarm their operations globally in response to varying local political conditions and labor markets.

### **The Revenge of Place**

But what happens when ubiquitous digital networking, the miniaturization and mobilization of electronics, wireless technology, and other factors combine to reduce *both* interactive costs and move costs? The remaining component of the cost equation – the fixed cost of each particular place – becomes increasingly dominant. And the less the attractions of a place can be replicated or substituted for electronically, the more desirable and expensive it will be.

Take the beach, for example. There is a fixed quantity of it, you cannot reproduce it (except in very imperfect form), and you cannot move it. You have to be there to benefit from its advantages of climate, scenic beauty, and recreational opportunity. And isolation need not diminish its value as it used to; you can telecommute from the beachfront, if you want. In a world where many distinctions among places are reduced, the particular value of the beach stands out even more vividly.

Or take listening to opera. You can inexpensively download MP3s of pretty much any performance you might want, anywhere you might care to listen to it. But there is only one *La Scala*. Opera fans will continue to seek the scarce tickets, and to pay the high prices, precisely because of its unique historic associations, cultural resonance, and aura.

In an electronically mediated, networked world, places that have few unique local qualities, and decreased opportunity to take advantage of differences in accessibility, will compete (for citizens, tourists, visitors, customers, investments, and so on) in a crowded and competitive market. Their value will inexorably be driven down.

Conversely, places that have unique, irreplicable, non-transferrable advantages to offer will be the most highly desired real estate. They will be the nodes around which settlements form and swarms buzz. They will be the primary generators of new urban patterns. They will be the subjects of increasingly sophisticated, electronically executed search, pricing, and allocation strategies.

In other words, ubiquitous and efficient networks – particularly digital telecommunications networks – produce the commodification of accessibility. This reduces the capacity of places (both physical and online) to distinguish themselves by virtue of superior accessibility. To be competitive, they have to provide something that you cannot find anywhere else.

This is the revenge of place.

#### Endnotes

<sup>1</sup> This paper extends an exploration of the relationship between electronic technology and urban form that began with my *City of Bits: Space, Place, and the Infobahn* (Cambridge MA, MIT Press, 1995), and continued with *E-topia: "Urban life, Jim – but not as we know it"* (Cambridge MA, MIT Press, 1999).

<sup>2</sup> Mitchel Resnick, *Turtles, Termites, and Traffic Jams: Explorations in Massively Parallel Microworlds*, Cambridge MA, MIT Press, 1997.

<sup>3</sup> Kevin Lynch, *The Image of the City*, Cambridge MA, MIT Press, 1960.

<sup>4</sup> T. C. Koopmans and M. Beckman, "Assignment Problems and the Location of Economic Activities," *Econometrica*, 25:1 (January 1957), 53-76.