IN SEARCH OF ASSEMBLAGES

Robert A. Beauregard

We can neither comprehend nor act on the world in its entirety. Moreover, we want to avoid fixating on meaningless particulars. In fact, the dominant tendency of the social sciences is to do just that by elevating individuals to supreme status in the realm of action[1]. Humans, though, create a variety of social forms – governments, neighborhood associations, families – through which to achieve their purposes. And none of them exist in isolation; each requires other social forms and materialities to function effectively. Consider a water management agency. It depends on reservoirs, pipes to transport the water, chemicals to purify it, and meters which register its use. It also requires relationships with users, elected officials, financial intermediaries, and environmental regulatory bodies. Conceived in this way, the agency exists within a field of action that includes all of the forces operating on it.

The purpose of this article is to explore one approach – assemblage thinking – to identifying these constituent forms of reality. I begin with the intellectual foundations of assemblage thinking, provide an example from New York City that illustrates how an assemblage might be imagined, and conclude by reflecting on the approach's applicability to planning.

1. Assemblage thinking

Currently, a small group of urban scholars is debating whether something called an "assemblage" is a useful way to think about cities (Bender, 2010; Brenner, Madden, Wachsmuth, 2011; McFarlane, 2011a; Tonkiss, 2011). The concept's attractiveness is its explicit acknowledgment of the heterogeneity and fluidity of reality. The claim is that we live in a world whose constituent forms are comprised of heterogeneous elements. Such elements consist of humans, technologies from web sites to escalators, inanimate objects such as desks, and the various things we assign to nature: air, water, animals, insects and plants. To create one of reality's constituent forms, a variety of diverse elements have to be brought together.

These forms, however, are unstable and, thus, temporary. Some (for example, the United States government) might persist for centuries and others for a mere moment (like a European Cup final), but none last forever. To persist, they have to constantly reinforce the relationships in which they are embedded while also developing new ones. The United States is not the same government it was in 1800. To endure, it had to nurture alliances, enroll various groups and nations in its projects, and manage its many involvements across racial divides, business interests, natives and immigrants, religions. This is reality as fluid, contingent and indeterminate.

For my purposes, this assemblage thinking emerged at the intersection of four theoretical perspectives: actor-network theory; science, technology, and society studies, critical political ecology, and policy transfer[2].

Actor-network theory is associated with the French historian of science Bruno Latour (2005; see also Madden, 2010). Latour describes a world made up of networks with these networks comprised of disparate elements whose

capacity to act is dependent on the "who" and "what" that are included in the network. To act is to mobilize others in service of one's intentions. Consequently, action is networked and heterogeneous, with networks populated by both humans and non-humans.

For networks to be effective, they must enroll other actors who can help them achieve their interests while also stabilizing the network. This means forming alliances. But, since actors have multiple interests and consequently are involved in multiple networks, any one of which will receive more or less attention depending on the flow of events (Pressman, Wildavsky, 1973), alliances are fragile. Effort has to be expended to keep networks together and to adapt them to an ever-changing world.

One of the most important contributions of actor-network theory is the recognition that non-humans – animals, buildings, wetlands, laptop computers – are also actors in networks. No theory of action in the world, Latour maintains, can exclude non-humans (including non-living things). Such an exclusion falsely separates culture and nature. Rather, we are encouraged to recognize how the presence and actions of non-humans are essential for the networks to persist. Non-humans (for example, a plague of locusts) have consequences for how networks behave and thus how action unfolds. One of my favorite Latourian examples is the automatic door opener (Latour, 1992). It opens the door for you and relieves you of the obligation of holding the door for the person behind you. The door opener is thus that a key part of a temporary assemblage that enables people to enter and leave buildings. It also mediates personal relations[3].

The second body of literature is "science, technology, and society" studies (commonly referred to as STS) (Law, 2008). STS originated in Thomas Kuhn's *The Structure of Scientific Revolutions* (1970). Kuhn argued that science was done by individuals embedded in intellectual communities not by automatons recording and interpreting the measurements produced by their instruments. Science is a practice and a culture, not a disembodied logic.

STS scholars have extended this line of thought to argue that the instruments of science – the technology used to do it – are complicit in what is discovered. Humans do not act alone; they act with tools. In this way, the distinction between humans and technologies is blurred to the point at which cyborgs become of interest (Gandy, 2005)[4]. Technologies enable experiments to be done and findings interpreted, fluids monitored, chemicals analyzed, and seismic shifts recorded. This leads STS scholars to cast the land, water, atmosphere, planets, and animals of the material world as active participants in scientific studies.

Further arguing for attending to nature are those who write under the rubric of urban political ecology (Keil, 2003; Swyngedouw, 1996). Here, center-stage, is the dialectic of the social and the ecological – culture and nature – with each mutually constitutive. The city is viewed as a hybrid, always comprised in its functioning by heterogeneous elements. Urbanization, thus, becomes a political process by which humans constantly push at the ecological frontier while contending with the relentless incursion of nature into the human habitat (Gandy, 2002). Cities are not the opposite of nature. Rather, they and nature are interdependent. Such understandings lead to a focus on the metabolism of the city: for example, the flows of water from hinterlands to kitchen faucets.

Finally, the notion of an assemblage draws from the literature on policy transfer (Dolowitz, Marsh, 2000). This literature asks how it is that policy ideas and practices travel. It is interested in everything from how certain places become the preferred sources of policy ideas (e.g., Germany as regards brownfield remediation) to how these ideas and practices are discovered, carried from place to place, and then

adopted, adapted, transformed, or rejected at their destination.

From this perspective, Eugene McCann (2008) has written a fascinating case study of drug policy in Vancouver, Canada, a policy that has received international attention for its treatment, education, enforcement, and harm reduction, with the last objective – harm reduction – being the most innovative. Harm reduction's originality can be traced to innovations in drug programs in Frankfurt, Amsterdam and Liverpool with the policy transfer network comprised of policy entrepreneurs, web technologies, single-room occupancy hotels where addicts live, tour buses, syringes, drug advocates, books and public debates. Together, these disparate elements explain how these organizations learned.

2. Assemblage qualities

Four qualities define an assemblage: 1. network formations with 2. heterogeneous elements that engage in 3. fluid relationships, and 4. achieve consequences through their mutually, constitutive interaction. Of these, I want to emphasize the second quality – the heterogeneity of elements. My objective is to develop a way of thinking about reality that does not assume that humans are active and the rest of the world passive, that recognizes that humans do not act alone (that is, without tools or without meaningful interactions with non-humans) and that proposes, therefore, that any significant action in the world involves heterogeneous elements. My focus is on four of them: 1. humans; 2. non-human things; 3. tools or technology and 4. ideas.

3. Stalled projects: An urban assemblage

In the early 2000s, the New York City economy was recovering from a recession, a new mayor was in office, and the city was once again attracting immigrants from abroad and migrants from across the country. On entering office, the mayor asked the City Planning Department for population projections. The best estimate was that just over one million people would be added to the city by 2030 and that the labor market would grow by 750,000 jobs. This posed a challenge. The housing market was already tight – vacancy rates were low and prices were rising precipitously – and little land was available on which to build new housing. Any real estate development would have to intensify already developed sites. Moreover, given the high housing costs, the city was in danger of losing its working class population; affordable housing was desperately needed.

In response, the City Planning Department re-zoned various areas of the city to allow more housing to be built (Buettner, Rivera, 2009). Re-zoning involved both up-zoning (that is, increasing the density of development) and down-zoning in adjacent areas. (When up-zoning, the City increases the allowable floor-to-area ratio, or FAR, thus enabling more space to be built and more profits to be made from new construction.) The up-zoning occurred along major avenues and the waterfront. To assure that affordable housing would be built, the City drew on two programs: the Inclusionary Housing Program wherein developers are granted a higher FAR, if they agree to include affordable units in their buildings, and the 80-20, program that provides long-term property tax abatements in return for making 20 percent of the building's units affordable. The result was a wave of property acquisitions by developers and the demolition of existing buildings on what were now under-valued sites. Combined with the tight housing market and with a strong economy, the re-zoning produced a building boom.

With the crash of the national economy in 2008, the building bubble burst. Banks stopped issuing mortgages, rising unemployment dampened demand for home purchases and rental up-grades, and developers

found it difficult to pre-rent or pre-sell units. Seeing the possibility of losses, financial institutions withdrew financing from developers thus leaving them without the money to finish their projects. With financing gone and demand having disappeared, the developers were forced to halt construction. The projects were stalled.

The number of stalled projects rose rapidly. In 2009 there were approximately 360, by late 2010 the total had risen to nearly 700, and even though the housing market began to revive in late 2011, the number still stood at 692 (Fung, 2009; Fung, 2011). Most of the stalled projects were residential and many were located in areas that had been up-zoned. Developers responded in a number of ways (Satow, 2012). Some tried to sell their "distressed" properties. Others searched for new equity investors who could provide an infusion of capital. Another group restructured the finances of the project and re-designed the interiors to turn them from cooperatives or condominiums to be sold to apartments to be (more easily) rented. A small number of developers simply opted to wait-out the recession and re-commence construction when it was over.

In 2009, the city government (City) intervened. The Department of Buildings established a task force to work with the developers and the City Council passed legislation that required comprehensive site safety plans (New York Construction Outlook, 12 October 2009). The Safety Monitoring Plans would insure that the sites would be made secure against vandalism and unwanted uses of or incursions onto the site. In return, the developers would be able to renew their building permits for up to four years rather than going through the permitting process a second time.

In July of that same year, the City Council approved the Housing Asset Demand Pilot Program along with an appropriation of $20 million dollars (Haughney, 2009; Press Release, 2009). The program authorized the City to negotiate with developers and banks to secure gap financing for stalled sites[5]. In return, the developer would provide affordable housing units. The City estimated that the $20 million would produce 400 affordable apartments.

Few developers expressed interest. By 2011, only 20 projects of the hundreds that were eligible had signed up for the program (Fung, 2011). Banks were uninterested in lending and developers were reluctant to reduce the number of market rate units in their buildings.

Let us now return to the issue of constituent form. How might this case be re-cast in assemblage terms?

To begin, consider how the City government viewed the "stalled projects." City officials interpreted it as a relationship mainly among the municipal government, bankers and developers. In this network, gap financing makes sense; it re-establishes the developer-banker relationship that is viewed as key to successful construction. Such a network consists almost solely of human actors: government negotiators, bankers, and developers. From an assemblage perspective, it lacks heterogeneity. No thought is given to the enrollment of other actors who might facilitate the re-starting of the stalled projects. The Program does, though, acknowledge the need for a technology – the gap financing mechanism.

One way we might re-constitute this network as an assemblage is to add heterogeneous actors. Missing from the City's ill-formed assemblage are the buildings and the sites. The Department of Buildings did concern itself with securing the site, but this only hints at the issues related to the physicality of these projects. The buildings are half-finished (sometimes not even beyond their foundations) and scaffolding wraps around the floors that have been partially built. The sites are littered with construction debris, portable toilets, and construction sheds and ringed by plywood and chain-link fencing.

We know something about what happens when construction halts (Edensor, 2011). First, the materials

in place begin to deteriorate as they are pelted by snow and rain, wind and bird droppings. Exposed reinforcing bars rust, foundations fill with rainwater, exposed concrete flakes off, and water-soaked wood begins to rot. Living things begin to occupy the site. Birds nest, rodents use the site for refuge, and mosquitoes breed in standing water. Seeds are carried onto the site by the winds or dropped by birds and take root in what soil they can find; the tentacles of the plants find cracks in the concrete and further push forward their deterioration. In one season alone, small plants and trees can easily appear. Humans are also a threat. Vandals deface or even damage the construction fence or enter the site in search of materials to steal. Teenagers scale the fence with potential damage to the site and themselves.

Other actors are implicated in what is happening to the building and the site: city agencies, bankers, the developer, and insurance companies. The developer now needs to add the costs of clean-up and repair to her financial assessment. She also has to contend with the police if vandalism occurs or the insurance company if someone enters the site and is hurt, not to mention the concerns of people who live near the site who complain about the rats and mice. Because the building and the site are in flux, City inspectors are also drawn to a new set of issues.

Then, there are the construction companies, labor unions and building suppliers who have been affected. Building contractors from electricians to plumbers to furniture installers have had contracts terminated, laborers have been let go, unions have been unable to provide jobs and suppliers have cut back operations. The general contractor responsible for the total building project has lost work and has to consider how to address the

deterioration and remove the plants and animals before re-starting construction. Construction schedules have been thrown into disarray, repairs will have to be made and costs will rise.
Then, there are the real estate agents who were chosen to market the apartments and sell the condominiums, companies hired to manage the building, and bankers who were going to be re-paid. The tax revenues projected by the City now have to be re-calibrated. There are also the residents who live nearby and businesses which operate adjacent to the site. A construction project underway is a symbol of hope and prosperity, a stalled project is a nuisance and an eyesore and a likely irritant in the daily lives of residents.
This accounts for the human actors, the non-human things and the physical site; still to be included are the technologies and the ideas without which our assemblage is incomplete. The technologies include the gap financing, the safety monitoring plans, the internet where neighborhood bloggers comment, the City's tax revenue projection tools, the developers' financial spreadsheets, the general contractors' construction schedules, neighborhood meetings where complaints are made, the industry journals where the sites are discussed and the sealants and coverings used to weatherize the unfinished buildings. The ideas include the belief that the municipal government has an obligation to aid developers; knowledge about recessions, assumptions about market signals, and expectations of how and when the economy will rebound. Only when all of these elements – humans, non-humans, technologies and ideas – have been put together will we have an assemblage.

4. Conclusion

I began by asking how we might conceive of the material world. My objective was to identify the constituent forms of reality and my proposal is that we think in terms of assemblages. Such spatial orderings are realistic as well as being connected to a rich array of intellectual arguments. Most importantly, they are also practically useful; if properly constituted, assemblages contain all of the actors (and forces) relevant for the design of a planning intervention.
One of the more useful and also debilitating distinctions of modernism was between objects and subjects. Within planning and policy analysis that distinction posits two worlds: one a world out-there and the other a world in-here. The world out-there is the world that is the object of planning and policymaking. It is the world of contaminated industrial sites, drug addicts, international trade and stalled projects. The world in-here is the world of subjects: planners, policy experts, policymakers, architects, government bureaucrats, elected officials, bankers and developers. The world in-here is the world of actors who shape the world out-there.
This is a false distinction. It relieves the actors in-here for any responsibility for the world out-there, as if the New York City government through its re-zoning had no responsibility for the stalled projects and as if bankers were merely responding to market signals. Moreover, it falsely diminishes the contribution that the world out-there makes to action. Assemblage thinking rejects this distinction; in the assemblage there is no in-here and out-there but only the action-oriented space of the assemblage.
As a constituent form of reality, then, an assemblage offers a number of benefits to planners. First, by focusing on action, it reflects the contemporary understanding that planning extends beyond directives to implementation. Second, it recognizes that no actor – be it an individual or an organization – is autonomous. Humans and their groupings are always embedded in relationships and thus all action – all action of interest

to planners – is collective action. Collective action, moreover, inevitably involves tools and technologies as well as non-humans (Beauregard, 2012). Third, assemblage thinking strives to define the field of action. Fourth, no *a priori* judgment is made as to who has or does not have power and thus control. Planners treat each assemblage as contingent. Only by grasping the assemblage in its specifics can one know how to intervene. Action is contextualized.

To conclude, it should also be obvious that space plays a significant role in any assemblage. In the stalled projects example, the sites, the re-zoned areas, and New York City are central to both the problem and any solution. An assemblage, though, is a spatial ordering of a particular type. It cannot be reduced to a socio-spatial pattern. Rather, it defines space through the actors (and actions) that enable the network to function and persist. Such a constituent form fits well with a planning that acknowledges, and hopes to improve upon, a complex and ever-changing world.

Notes

1 Consider one example: the false attribution of the "Bilbao effect" solely to the architect Frank Gehry. For a critique of this argument, see Ponzini and Nastasi (2011, pp. 22-43).

2 Scholars also trace the origins of assemblage thinking to the philosophers Gilles Deleuze and Félix Guattari (Dewsbury, 2011).

3 As another example, consider the consequences for automobile-owning residents of a dense urban fabric and a lack of parking facilities. In certain historical neighborhoods of Naples, the residents use plastic chairs, drying racks, and iron poles to signal their claims to the parking spaces in front of their homes (Lieto, *forthcoming*), a story that resonates also in such American cities as Philadelphia.

4 For an insightful reflection on the impact of technology on the city, see Martinotti (2009).

5 Gap financing fills the "gap" between the amount of equity and borrowed capital and the total cost of the project.

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