

Resilient systems and cosmopolitan localism — The emerging scenario of the small, local, open and connected space

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Landscape of development

“The historical conditions which catapulted the idea (of sustainable development) into prominence have vanished: development has become out dated. But above all, the hopes and desires which made the idea fly, are now exhausted: development has grown obsolete.”
(Wolfgang Sachs, 1992)

I first came across the work of Wolfgang Sachs in these lines from his beautiful book “The Development Dictionary” (Sachs 1992). Since then, his thoughts on development and well-being have become one of the major reference points for my own work. Now, more than 20 years later, if we go back to that statement we can see that what he wrote is more true than ever. The image of development as “a ruin in the intellectual landscape” is no longer just the view of a particularly enlightened thinker but illustrates the tangible experience of a growing number of people on this planet.

In fact, 20 years ago, discussion of the catastrophic impact of multiple, interlinked crises (environmental, economic, and social) was still mainly driven by worried “visions of the future”: of what would have happened to our Planet 20 years later, if we did not change the way we lived and behaved. Now these dystopian visions are becoming our shared present: the crisis in mainstream economic models, with their associated systems of production and consumption, is clearly here to stay. The planetary boundaries have become tangible in people’s everyday lives, and green technologies are consequently becoming driving forces for both local policies and international competition. This process reveals not only their possibilities but also their limits. The implications of globalization and connectivity are becoming evident, and are affecting social, economic and political organizations at every scale.

However, something else has also been happening in these two decades, something that shows the positive side of this picture: a wave of social innovation has begun to set free more and more social resources, such as networks of active and collaborative people, peer-to-peer organizations, diffused knowledge and skills.

The result is a dynamic picture in which the “old world” is transforming under pressure. How this transformation will proceed and what its final results will be is of course an open question. We know that economic and social crises can bring forth political monsters (as has happened at other moments in history), and that environmental problems can result in all kinds of disasters (as we have begun to learn). However, we also know that crises may take unexpected and even positive directions. In fact, something that offers hope is happening all around the world today: millions of people, driven by different combinations of wishes and needs, are starting to think and act in a new and sustainable way. Consciously or not, these people are laying the foundations for what is desperately needed in today’s uncertainty: a resilient, sustainable society.

Resilient systems in a risky society

Whatever else our future society will be, it will be a “risk society” (Beck 1992): a society likely to be affected by different kinds of traumatic events — from natural catastrophes, to war and terrorism, to financial and economic crises. The precondition for any conceivable sustainable society is resilience — its capacity to overcome the risks it will be exposed to and the stresses and breakdowns that will inevitably take place (Walker and Salt 2006). Today, the implications of this risk society are no longer only future projections. They are becoming evident all around the world in our daily life experiences and in the fragility of our socio-technical system. As a consequence,

the notion of resilience has become part of the vocabulary of an increasing number of people and organizations. Resilience means the system's capacity to cope with stress and local failures without collapsing. It urgently needs to be adopted onto the agendas of those concerned with the formulation and implementation of policy.

How do we design a resilient socio-technical system? Let's look at natural systems. We can see that their tolerance of breakdown and their adaptation capacity, meaning their ability to withstand the test of time, may point a way forward (Fiksel 2003; Manzini 2012). Long-lasting natural systems result from a multiplicity of largely independent sub-systems and are based on a variety of life strategies. In short, they are diverse and complex. These diversities and complexities are the basis of their resilience — their adaptability to changes in their environment. And it ought to be feasible to devise something similar for man-made systems. If we take this approach, these systems should be made up of a number of different interconnected elements, making them capable of adapting and lasting over time. Even if one or more of their components were to break, the whole system — given their number and diversity — should not collapse (Johansson/Kish/Mirata 2005).

How far are we from this complex, resilient, man-made system? In my view, this question has no single, simple answer: contemporary society demonstrates a contradictory dynamism that forces us, on this point as on many others, to describe what is happening as a double trend: a mainstream one, carried over from the last century, and a new, emerging one. The two trends coexist and compete. In this competition we can see, on one side, the big dinosaurs of the 20th century, promoting large production plants, hierarchical system architectures, process simplification and standardization. Their result is the reduction of biological and socio-technical diversity and a consequent increase in the overall fragility of the system. On the other side, we can see the small and connected creatures of the new emerging world moving in the opposite direction, towards light, flexible, context-related distributed systems.

Resilient distributed systems

In recent decades, a new generation of distributed systems (i.e. networks of different interconnected elements) has emerged, driven by the power of technological networks and by the enthusiasm of a growing number of people who try to adopt such systems wherever possible (Biggs/ Ryan/Wisman 2010). This trend emerged and spread in three [successive] waves of innovation.

The first of these waves of innovation occurred when the architecture of information systems shifted from the old hierarchical structure to new, networked ones (distributed intelligence). This was accompanied by radical changes in socio-technical organizations made possible by this structural shift. The result has been that, as new distributed forms of knowledge and decision-making have become more common, the rigid, vertical models that were dominant in industrialized society have started to melt into fluid, horizontal ones (von Hippel 2004; Bawens 2007). The success of this innovation has been such that today networked architecture is assumed to be a “quasi-natural” state. Of course, this is not the case: before laptops and the Internet, information systems were based — consistent with the mainstream model at the time — on large mainframe computers and their consequently hierarchical — and therefore fragile — architecture.

The second wave of innovation has affected energy systems. Here, a cluster of converging innovations has emerged to offer a new perspective for the energy sector: small, highly efficient power plants, renewable energy systems and the “smart” grids that connect them have made it possible to move towards distributed solutions (distributed power generation). These solutions are challenging the as yet mainstream systems, with their large power plants and hierarchical (stupid and fragile) grids. They now constitute a major field of investment and competition as part of the strong, ongoing “green technology” trend. So it is reasonable to assume that these technologies will have a big impact on the whole system and that eventually the whole energy system will evolve along a similar trajectory to that of information systems, moving from a hierarchical architecture toward a distributed one (Pehnt et al. 2006).

The third wave of innovation toward distributed systems challenges the mainstream globalised production and consumption systems. The signals of this trend include a variety of initiatives, ranging from the rediscovery of traditional craftsmanship and local farming to the search for small-scale, high-tech, fabrication systems capable of supporting new forms of networked micro-factories, such as the ones proposed by *Fab Labs and by the makers movement* 13.

Although this trend is still in its initial phase, we can see that it is following a new principle of localization. The trend will grow stronger and the whole production system will move in this direction — that of designing fabrication processes so that their products can be made as near as possible to where they will be used. In the spirit of distributed production, this principle can be implemented mixing different logics of design and fabrication ranging from those of traditional industry (e.g. creating networks of small-medium enterprises) to supporting a craftsmanship revival and the application of high-tech, miniaturised production systems. Similarly, there may be differing rationales driving these different logics. One of them can be seen as an almost linear evolution of the lean production approach (a manufacturing model that has dominated industrial sector innovation for the last thirty years). In fact, distributed systems can be seen in general as the lightest and most flexible of fabrication systems, able to create products for specific clients not only when they are needed (customized and just-in-time production), but also where they are needed (or, at least, as near as possible to the place where they are needed): “point of use production”.

A further driver is the desire to optimise the benefits from the use of local, renewable resources. Given that these are, by definition, highly context-specific, it follows that their best use is also by definition very context-specific. In other words, renewable resources “naturally” call for local uses. What is new today is that local production plants can be intelligently connected, creating what we call distributed systems.

A third driver is a growing interest in “the quality of proximity and self-sufficiency”. That is, the value that a growing number of people recognize in local products: the search for “zero miles” food and the success of local microbreweries are well-known examples of this attitude (Petrini 2007; Petrini 2010). This philosophy is now being extended to encompass other crafts and small-scale industrial activities, driven by both the recognition of local qualities and a political choice to support local economies and/or local self-sufficiency (in food, energy, water, and products) in order to promote community resilience to external threats and problems (Thackara 2005; Hopkins 2009).

Social innovation and creative communities

Distributed systems are the result of complex, innovative processes in which technological components cannot be separated from social ones. While centralized systems can be developed without regard to the social fabric in which they will be implemented, this is impossible when the technological solution in question is a distributed one. In fact, the more a system is scattered and networked, the larger and more connected is its interface with society and the more the social aspects of innovation have to be considered. In other words, and with regard to our discussion here: distributed systems cannot be implemented, nor can resilient systems be realized, without social innovation.

But the good news is that social innovations are spreading all around the world (Mulgan 2006; Murray/Caulier-Grice/Mulgan 2010) and that the emerging ways of living and producing they generate are largely convergent with the trend toward resilient distributed systems. In fact, in its complexity and with all its contradictions, contemporary society is incubating a growing number of experiments in new and more sustainable ways of living (Meroni 2007). For example, we are increasingly seeing groups of families sharing services to reduce economic and environmental costs while also improving their neighborhoods; new forms of social interchange and mutual help, such as time banks; systems of personal mobility offering alternatives to individual ownership and use of cars, such as car sharing, car pooling, and the rediscovery of bicycles; and the development of productive activities based on local resources and skills linked to wider global networks, e.g. products emblematic of a specific place, or the fair and direct trade networks between producers and

consumers established around the globe. Because they are localized, small, connected and open to others' ideas, culture and physical presence, these promising social innovations actively contribute to the realization of resilient, distributed socio-technical systems. And vice versa: distributed socio-technical systems may become the enabling infrastructure of a society where these kinds of social innovations can flourish and spread (Manzini 2011).

Behind each of these promising social innovations there are groups of creative and entrepreneurial people who have invented, enhanced and managed them. We can call them creative communities: people who invent and enhance solutions to everyday life problems by recombining factors that already exist, giving them new functions and meaning and achieving results without waiting for wider changes in the system such as in the economy, in institutions or in large infrastructures.

These creative communities are challenging traditional ways of doing things and introducing behaviours that often demonstrate unprecedented capacities for bringing individual interests into line with social and environmental ones. In doing so, these communities generate not only solutions to their everyday life problems but also new ideas about society, production and well-being. They can therefore be seen as promising social experiments in line with the distributed systems we introduced in the previous paragraph: initiatives that, in linking the technical opportunities of distributed systems with the wider socio-cultural trends associated with local-global interactions, become practical examples of a new kind of globalization: *the cosmopolitan localism* described years ago by Wolfgang Sachs (Sachs 1992).

Cosmopolitan localism

Observing contemporary society leads us to conclude that the joint phenomena of globalization and networking have given a new meaning to the local. The expression 'local' now refers to something very different from what was meant in the past — the valley, the agricultural village, the small provincial town, all isolated and relatively closed within their own culture and economy. Indeed, the term local now combines the specific features of places and their communities with new phenomena generated and supported worldwide by globalization and by cultural, socio-economic interconnectivity. These phenomena are often characterised by extremely negative tendencies, ranging from traditionalist stances that support local interests (including different forms of fundamentalism) hidden behind the protecting veil of traditions and identity (Bauman 1998; Beck 2000) to turning what remains of traditions and landscapes into a show for tourist purposes. This is also called a 'Disneyfication' of the local (Bryman 2004).

But luckily the overall picture is healthier. Creative communities, driven by social innovation, are creating a variety of locality-oriented initiatives: from the rediscovery of neighbourhoods and local food and crafts to strategies to enhance the self-sufficiency of the local community. In other words, by inventing and enhancing new socio-cultural and economic activities, these creative communities are also generating a new sense of place and a new idea of locality.

The emerging cosmopolitan localism can therefore be seen as a creative balance between being rooted in a given place and community and being open to global flows of ideas, information, people, things and money (Appadurai 1990 and 2001). But the balance can be upset and can tip over either into a hermetic closure to the outside world or, on the other side, into an openness to outside influences that destroys the locally specific features of the social fabric. Nevertheless, when this balance is successfully achieved, it creates a new idea of place that, in my view, is truly contemporary: a place which is no longer an isolated entity, but which becomes a node in a variety of networks. Short networks generate and regenerate the local social and economic fabric at the same time as long ones connect that particular place and its resident community with the rest of the world.

Moreover, cosmopolitan localism produces a new model of well-being: a well-being in which a major role is played by the recognition of how much socio-cultural and environmental contexts can contribute to people's quality of life and to the resilience of the overall society. The contexts I refer to may be a lively social fabric, a healthy environment, a beautiful landscape or, last but not least,

the richness of diversity that the place can express. With regard to the value of natural and socio-cultural diversity, an observation by Wolfgang Sachs seems to me to be particularly meaningful: “After all it is only from places that variety crops up, because it is in places that people weave the present into their particular thread of history” (Sachs 1992).

In my view, the reason why cosmopolitan localism is becoming a viable project is because distributed systems have changed the meaning of “local” and “small”. Thanks to them, in fact, we can say today that “the small is not small” and “the local is not local”.

The small is not small

Small-scale is an important quality for cosmopolitan localism for two sets of reasons. Firstly, it enables the actors involved to understand and manage complex social-technical systems in an open and democratic way. Secondly, it enables individuals to carry out their activities, to fulfil their needs and to build their desirable futures from within organisations where human relationships remain lively and personal (see Taylor 1989).

Of course, writing about smallness immediately calls to mind E.F. Schumacher’s book *Small is Beautiful* (Schumacher 1973). At the time, forty years ago, Schumacher advocated the small and local on cultural and ethical grounds as a reaction against the prevailing trend toward the large scale, toward standardization and the loss of a sense of place which he saw around him. Today, we can turn to Schumacher for the same reasons and for new reasons as well. However, at the same time, we have to recognize that in these four decades things have changed profoundly. What in Schumacher’s day was only a utopia is today a concrete possibility being offered to us in the most positive and concrete way by the convergence between networked systems and creative communities us.

Forty years ago, the “small” that Schumacher referred to really was small. And being so small, it had little chance of influencing things on a large scale. Something similar can be said for his concept of “local”: in Schumacher’s day, the local was more or less isolated from other locals. It must be added that, at the time, technological and economic models driven by economy of scale and the belief that “the bigger the better” still seemed to be in very good health. The prevailing thinking therefore discounted any possibility that, if economy and effectiveness were taken into account, the small could be both beautiful and at the same time viable.

Today the context is very different. Not only is the crisis of the dominant model evident at every level (in academic research as well as in everyday life experiences), but we can also see in practical terms that the small can be not only beautiful but also economically viable; that it can be influential on a large scale because of the fact that it acts as a node in a global network. In other words, our practical experience tells us that in a networked society the small is no longer small because small-scale organizations can together weave large distributed systems that point to a new concept of globalization: a global distributed system, which from a socio-cultural point of view becomes the cosmopolitan localism I introduced in the previous paragraph.

In my view, cosmopolitan localism based on distributed systems has several advantages over the globalization we have known until now. To put it in a nutshell, we can say that it is a globalization based on interconnected localities, where many important decisions are made locally by the people directly concerned, and more importantly, where for each step of the process of production and consumption, much of the decision-making, know-how and economic value remains in the hands, minds and pockets of the local community.

The emerging scenario and the need for new stories

Resilient systems and cosmopolitan localism are two sides of an emerging scenario. I will call it the SLOC scenario, where SLOC stands for Small, Local, Open, Connected. These four adjectives outline the main characteristics of this scenario. Individually, each one of these adjectives and its implications are easily understood, but together they generate a new vision of how a sustainable, networked society could take shape. In my view, this SLOC scenario could become a powerful

social attractor, capable of triggering, catalysing and orienting a variety of social actors, innovative processes and design activities (Manzini 2010; Manzini 2011).

More precisely, on the basis of what I have introduced in the previous paragraphs, we can see that the SLOC scenario is neither a dream nor a prediction. It is a motivating vision of what the future could be if a large number of social actors operated to reinforce and synergize existing trends (Manzini/Jégou/Meroni 2009). The SLOC scenario holds out the prospect of a possible future, but one which requires many converging efforts to become real.

In particular, the SLOC scenario calls for focussing and developing an array of themes outlining a possible applied research program. Some of its research questions are clear (and some answers have already been found). For instance: how to create favourable environments and develop collaborative platforms to trigger and support social innovation; how to promote traditional and high-tech craftsmanship within the framework of a network society; how to support a territorial ecology, i.e. the sustainable valorisation of the physical and social resources of a given place or region.

The full list of questions is even longer, but I would like to add a final one that seems to me crucial but little considered: if the present wave of social innovation is the early expression of a new civilization (and not merely a constellation of interesting, but limited, cases), what are its cultural foundations?

In our search for answers to these questions, Wolfgang Sachs' reflection on sufficiency offers fertile ground for further discussions and questions. For instance: how does the idea of well-being based on the sufficiency principle translate into positive everyday life experiences? What are the benefits people are looking for when moving in that direction?

We started answering these questions by looking again at the mounting wave of socio-technical innovations being driven by creative communities who are going beyond the invention of new organizational and economic models. They are also building a new set of (sustainable) guidelines for everyday life and proposing an idea of well-being that is totally coherent with the sufficiency principle. In fact they seem happy to reduce their consumption of goods and physical spaces because they compensate for that reduction with something else that they consider more valuable. This "something else" is made up of the multiple pleasures offered by their physical and social environments: the improved qualities of relationships and time; of places and scale; and of work. It is the mix of practical and cultural activities on which they build their own identity.

In my view these emerging qualities tell a beautiful story about sufficiency. The only problem is that their voice is still very soft; to understand what they are saying we must listen very, very carefully.

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