PLURAL INNOVATIONS
in search of the rebalancing effects of innovating

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1 Introduction: can we learn something from the growing heterogeneity of innovative solutions?

In recent years, different solutions to different types of needs have emerged that seem difficult to categorize. If it can be agreed that these solutions may fall under the broader umbrella of "innovations" (mostly corresponding to a neo-Schumpeterian view), they cannot easily be ordered with the help of the main categories scholars usually refer to when it comes to identifying, measuring and analyzing innovations. What can be stated is that new types of participatory innovation have emerged, gained prominence and have become prevalent in different countries around the world. Sometimes enabled by new technologies, more and more citizens have joined firms and other innovating organisations in open and interactive processes of innovation.

Some examples are provided by recent products, services or applications. The list encompasses collaborative solutions such as AirBnB, car sharing, Urbeez, Honey Bee Network, etc. To a certain extent, micro-currencies, block chains based cryptocurrencies, etc. can be added to this list. In other fields MOOCs, Citizen Science (SETI), Grandpa TV and Facebook Alert constitute (positive) divergent uses of existing artefacts or services. Furthermore, this list may even be extended to activities such as pirate gardening (also known as "green urban guerilla"), collaborative use of 3D printing, micro-childcare, developing alternative cooking or collaborative teaching and learning about unconventional subjects via YouTube.

It can be observed for instance that, in the case of FabLabs, Makerspaces and similar initiatives, new ideas, if not prototypes, are fed into large companies' internal thinking who in turn try to source knowledge by engaging with ‘Makers' and ‘Lead Users' in novel ways. Arguably, the long-established dichotomy of producing companies and consuming individuals is in the process of being overrule.

More generally and from a theoretical point of view, it can be assumed that these very heterogeneous solutions provide a form of "improvement of a previously given situation" and generate *de facto* changes (mostly of a non-technological nature). In this respect, it could be useful to introduce a new dimension into the analysis beside the usual ones related to technologies, markets, etc. We call this dimension "rebalancing effects"

2 Sectoral plurality and the need for rebalancing according to Mintzberg

Against this background, our ambition is less to define a new variety of innovation (on top of "frugal innovation", "social innovation", etc.). Instead, we wish to focus the analysis on a specific aspect we call the "rebalancing effect". In this respect, the adjective "plural" refers to recent works by Henry Mintzberg (Mintzberg 2015a, 2015b) devoted to what he calls the "plural sector". According to Mintzberg, the plural sector has mainly been ignored by debates and analyses due to a vision opposing public and private sectors: "*There are three consequential sectors in society, not two. The one least understood is known by a variety of inadequate labels, including the "not-for-profit sector," the "third sector," and "civil society*." *Calling it "plural" can help it take its place alongside the ones called public and private, while indicating that it is made up*

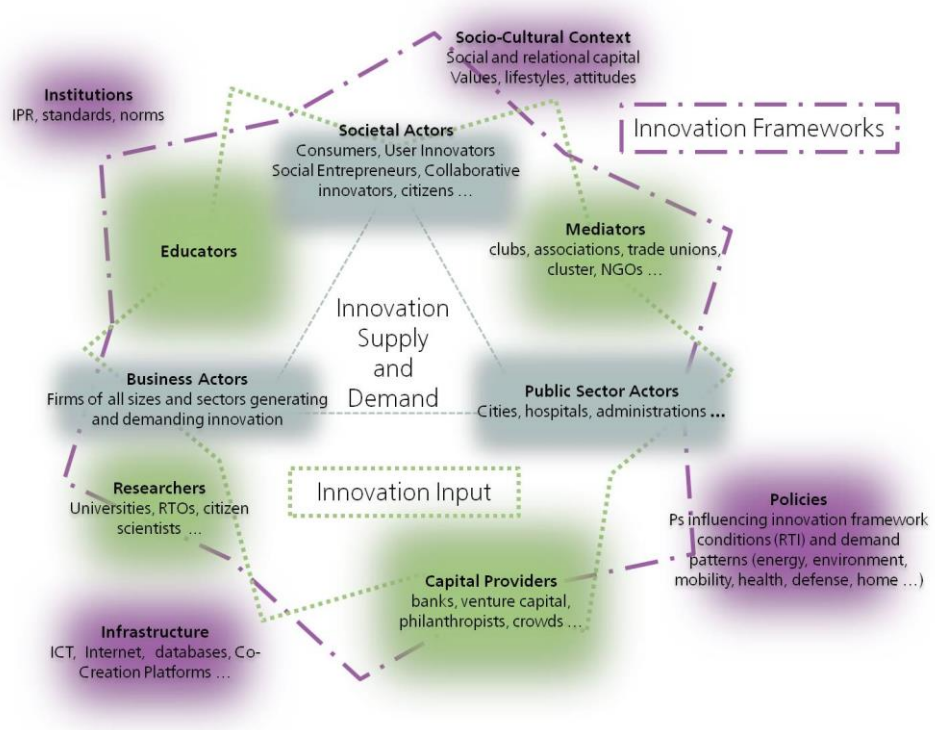
of a wide variety of human associations." (Mintzberg 2015a, p. X). Mintzberg's core argument is that Western societies need to be rebalanced and that the plural sector has a tremendous role to play in restoring the balance between public and private sectors.

3 A plurality of solutions

When we talk about plural innovation we do not consider the whole spectrum of issues addressed by Mintzberg but we focus on the aspects linked to innovation and more generally to socio-economic evolutions. In other words, the analysis is encompassing all the forms of innovations that tend to rebalance equilibriums between private, public and plural sectors. As a consequence, "plurality" should not be understood only as "innovations generated by the plural sector". In fact, in the approach we propose, plural innovations consist of new solutions that induce an evolution of the equilibrium between private, public and plural sectors. As such, plural innovations can be generated by any of the three sectors.

The ideas we attempt to develop correspond (at a micro-level) to current approaches which challenge the usual (macro level) visions of innovation systems (see Nelson 2010). For instance, Warnke et al. (2016) propose a vision considering innovation systems as reflexive systems (cf. figure 1).

Figure 1: Revised innovation system analytical framework



Source: (Warnke et al. 2016, p. 33)

Besides the "usual actors" that have been considered as pillars of (regional, national and supra-national) innovation systems such as business companies, public administrations and research-oriented organizations, this analytical framework puts forward elements such as "society" (e.g. social entrepreneurs), "mediators" (e.g. NGOs)" or "culture" (e.g. lifestyles).

In this respect, the "plurality of solutions" is rooted in the diversity of possible innovative actors as well as in the heterogeneous nature of the innovations themselves. The core characteristic of plural innovations remains nevertheless in their rebalancing effects.

4 The rebalancing effect of plural solutions

From a theoretical point of view, it can be considered that plural innovations may emerge in one of the three sectors and may be adopted and adapted in another one. Nevertheless, the most important issue about plural innovations is not *where* they are "born" but *what* they do "change".

In this respect, and in order to go beyond examples, it is possible to formulate the research proposition that plural innovations display three core "rebalancing" characteristics which could be put forward as smallest common denominators:

- The rebalancing effect of plural innovations results (at least partly) from the application of creative solutions that can be reproduced or spread easily (within or "outside" the market).
- The plural character of solutions derives from the fact that they are mostly designed (or re-designed, adapted, transformed, diverted, etc.) by the users rather than determined for a closed exploitation by suppliers. Again, rebalancing effects are at stake here.
- The technological content of plural innovations is not at the core of the rebalancing solution, even if technology may play a supporting role for the design or the application of the solution (for instance in the form of web platforms, laser-based tools, sensors, etc.). In contrast, innovative developments that tend to be "closed" or "frozen" by a given technology (or the intellectual property rights attached to it) are everything but rebalancing.

5 Similar concepts helpful for grasping the rebalancing effects of plural innovations

Another way to grasp what plural innovations may be about is to examine some other forms of innovation that display common characteristics in terms of rebalancing effects. Again, our ambition is not mainly to try to define a new variety of innovation (on top of existing ones.) but to understand how rebalancing effects may be generated by plural innovations.

Consequently, the following three types of innovations that can be found in the literature (cf. Table 1) are examined in order to identify characteristics that induce rebalancing effects in the meaning of Mintzberg. This list is not intended to be exclusive since further types of innovations could to a certain extent also be considered. For example, this could be the case for open innovations (Chesbrough 2010), user-centered (or democratic) innovations ((Hippel 2005) or social innovations (Mumford 2002).

Table 1: Determining characteristics of plural innovations that are common with other forms of innovation

Innovation types	Definition	Example	Characteristics inducing rebalancing effects
Common innovation	Common innovations results from innovative activities of ordinary people in their everyday life (Swann 2015)	Low interest loans to local buyers who could commit to restoring derelict properties	Low-tech character, solution for an "immediate" or "ordinary" need
Frugal innovations	"Making more with less for more people" (Radjou et al. 2012)	(Radjouetal.ÉJaipur leg (affordable rubber-based prosthetic leg for people with below-knee amputations)	Easy to reproduce and/or to adapt, generated out of scarcity
Inclusive innovations	Innovating initiatives that serve the welfare of lower-income groups, including poor and excluded groups (OECD 2015)	Biogas based milk cooling unit for small holder dairy farmer	Inclusion of social groups that are usually excluded from innovation processes and/or benefits

From these observations, a set of questions is asked in the following sections. The first question is if plural innovations constitute a rethinking of the access to innovation. The second one addresses the linearity of innovation processes. The last one deals with territorial disparities.

6 Rethinking the access to innovation?

The premise behind plural innovation is a fundamental rethinking of access to innovation. In simple terms, we claim that a radical opening of innovation processes would infuse a hitherto unknown element of diversity into innovation-oriented efforts, creating more productive overlaps, prompting co-creation, leveraging synergies and thus triggering more emergent processes that might ultimately lead to more and better innovation outcomes. At the same time, plural innovation (re)balances the different elements of producers' and users', experts' and laymen's, collective and individual knowledge that are articulated by various actors in the innovation system – be they concerned with innovation proper or with defining framework conditions relevant to innovation. As a result, instead of just forming one neatly delimited subsystem of society, plural innovation extends into as many areas of the societal system as possible, making innovation a function of people's everyday life and a source of societal transformation in which every citizen feels empowered to take part.

7 Breaking linearity of innovation processes?

By forming a nexus between multiple inputs and multiple outcomes, plural innovation forms a room for the iterative, evolutionary reflection on ideas, problems, and solutions, replacing a target-oriented process for the benefit of a specific actor by a room of mutual engagement and

interaction – financed jointly, based on the premise that, eventually, everyone benefits. Importantly, this does by no means imply that at certain stages, or from a certain stage, innovation processes should not be transferred into environments driven by individual, gain-oriented motives. Certainly they should. It is, however, suggested that more traditional R&D processes should become well connected to arenas of plural innovation. Hence, the notion of plural innovation does not imply the call for a paradigm shift that replaces proprietary innovation. It does, however, suggest that the systemic involvement of (relevant) citizens will lay the foundation for more desirable future for society, but also economically more profitable innovation.

8 Using spatial diversity for rebalancing territorial disparities?

Quite commonly, areas of "local buzz" in specific regions are connected by global networks of knowledge exchange. So far, however, many such networks focus on an exchange among leading regions, disconnecting areas in between. When it comes to plural innovations, one could hypothesise that in peripheral regions, specific competences of local societal groups become pivotal in making innovations effective for everyday application in the business sector. In that sense, the notion of plural innovation connects with an extended notion of entrepreneurial processes of discovery that take forward an initially broad-based exploration of opportunities into the concrete pursuit of new, additional domains based on a consideration of local, societal needs. Nevertheless, this remains a hypothesis as long as no empirical proof can be given, we need to be very cautious in this respect in order to avoid "wishful thinking". In fact, large urban areas may much more - due to the concentration of heterogeneous actors with specific competences and agendas - foster plural innovations than typically poor and/or peripheral and/or rural regions.

9 Further issues to be explored

Numerous further issues, yet only assumptions or even just intuitions, could be investigated in the line of the ideas exposed below. In particular, the issue of concrete societal benefits of plural innovation could constitute a starting point. The following hypotheses should be tested:

- Plural innovations raise a broader interest among citizens in innovation and in turn increase their overall innovation competencies.
- Plural innovations allow a higher relevance of innovation outputs, especially through earlier responses to societal trends and challenges.
- Plural innovations lead to increased productivity due to broader and more diverse knowledge inputs.
- Plural innovations alleviate feelings of exclusion in peripheral areas by involving local actors in producing subjectively better and more relevant solutions for such areas.
- Plural innovations favour easier commercialisation comparrd to non-rebalancing innovations through channels that initially spurred development.

10 Conclusion: a manifesto for plural innovating

The central proposition deriving from the ideas expressed above is that a set of conditions for innovations are necessary in order them to be rebalancing and in this respect relevant for society. Plural innovations must involve citizens' creativity and need to fit to their application environments to the greatest extent possible. This will, ultimately, be just as relevant as the degree of technological progress in specific fields.

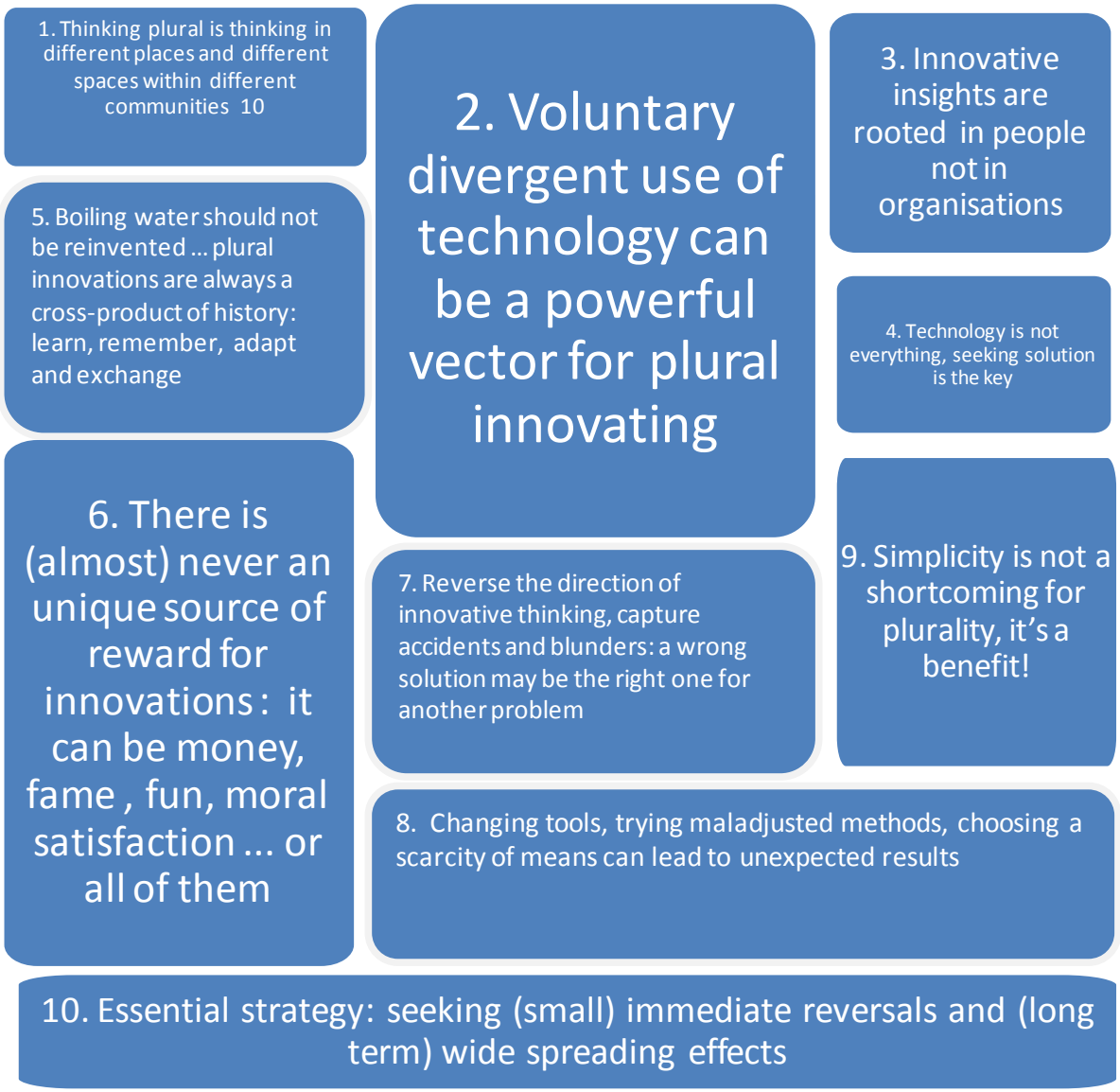
Summarizing, the research avenues deriving from the concept we attempt to develop encompass several dimensions. First, it appears important to deepen aspects related to the delimitation and overlapping with other forms of innovations. Second, a typology of the actors concerned (with regards to the approach developed by Mintzberg) could be helpful, in particular regarding the motivations of "plural innovators". And third, how to investigate factors fostering and hampering plural solutions?

From a policy perspective, the questions to be asked may be different by nature. In fact, it seems possible to summarize them in one sentence: Is there a real need for the support of plural innovation and if yes can it really be supported (or even should it be supported) and if yes, how?

In our view, far from a self-fulfilling prophecy, the concept of plural innovation is a normative proposition, based on the (well-founded) belief that support to greater openness and freedom of contribution in the innovation process provides the best option to exploit the opportunities provided by the current technological transformation.

Finally, we intend - as an alternative way to the academic one - to propose a manifesto for plural innovations (see figure 2). This manifesto is to be understood as an attempt to present plural innovations with the help of a set of assertions. Naturally, these assertions are so far only based on intuitions, neither on theoretical developments nor on empirical investigations. Slightly provocative, these assertions are thought to initiate and nourish further discussions.

Figure 2: Plural innovations – a manifesto



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References

Chesbrough, Henry William (2010): Open innovation. The new imperative for creating and profiting from technology. [Nachdr.]. Boston, Mass.: Harvard Business School Press.

Hippel, Eric von (2005): Democratizing innovation. The evolving phenomenon of user innovation. In *JfB* 55 (1), pp. 63–78. DOI: 10.1007/s11301-004-0002-8.

Mintzberg, Henry (2015a): Rebalancing Society. Radical Renewal Beyond Left, Right, and Center. San Francisco, US: Berrett-Koehler Publishers. Available online at http://gbv.eblib.com/patron/FullRecord.aspx?p=1784172.

Mintzberg, Henry (2015b): Time for the Plural Sector. In *Stanford Social Innovation Review* (Summer), pp. 28–32.

Mumford, Michael D. (2002): Social Innovation. Ten Cases From Benjamin Franklin. In *Creativity Research Journal* 14 (2), pp. 253–266. DOI: 10.1207/S15326934CRJ1402_11.

Nelson, Richard R. (Ed.) (2010): National innovation systems. A comparative analysis. New York: Oxford University Press. Available online at http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=140859.

OECD (2015): Innovation Policies for Inclusive Development. Scaling Up Inclusive Innovations. Paris. Available online at https://www.google.de/search?q=Innovation+Policies+for+Inclusive+Development&ie=utf-8&oe=utf-8&client=firefox-b&gfe_rd=cr&ei=vWYMWcflLIbIXt7ZmOgD.

Radjou, Navi; Prabhu, Jaideep C.; Ahuja, Simone (2012): Jugaad innovation. Think frugal, be flexible, generate breakthrough growth. 1st ed. San Francisco, CA: Jossey-Bass. Available online at http://www.esmt.eblib.com/patron/FullRecord.aspx?p=822008.

Swann, G. M. P. (2015): Common Innovation. How We Create the Wealth of Nations. Cheltenham: Edward Elgar Publishing. Available online at http://gbv.eblib.com/patron/FullRecord.aspx?p=1890447.

Warnke, Philine; Koschatzky, Knut; Dönitz, Ewa; Zenker, Andrea (2016): Opening up the innovation system framework towards new actors and institutions. Fraunhofer ISI Discussion Papers Innovation Systems and Policy Analysis No. 49.