

The visibility and invisibility of pollution in the soils of (post) industrial territories: the new perspectives on the resilience and environmental justice

This article is for the *Géocarrefour* revue with the aim of examining a crucial component in industrial heritage: soil pollution and the link that local companies maintain with it. The players of old industrialized territories – which today comprise of metropolises distanced economically, socially and symbolically from industry – are confronted by soil pollution in the daily production and management of urban spaces. Heavy metals, hydrocarbons and various industrial waste are incorporated into urban soils, most often in a “silent” manner. Little studied, compared to other types of environmental problems (Barles, 1993), the question of soils emerges today in an intense manner as a part of urban renewal politics. It is mobilized as an element of resilience in urban systems (Boukharaeva and Marloie, 2011), often linked with questions of agriculture and urban food (Dansero et al., 2015). Beyond these environmental and health impacts, soil pollution affects local territorialized companies in several ways: political, in the structuring of identification systems, in decisions and management; economical, by weighing up the development methods of polluted sites; social, by crossing pollution aspect differences and mobilization capacities, and also symbolic, notably in terms of image. Inherited from the exploitation of nature by industrial capitalism, soil pollution and their consequences are more or less visible, known, measured, treated, sometimes concealed, commonplace.

In this perspective, the polluted soils and mobilizations – or lack of mobilizations – constitute to create an original analysis to question the notion of resilience, omnipresent in public debates over the last ten years by mainly referring – but not only – to the works of C.S. Holling (Holling, 2004). Intrinsically linked to catastrophic events, the resilience described how company capacities were affected faced by an event and to reconstruct – even to improve – the necessary resources for its (re)development in the relatively short temporality (Comfort et al., 2010). A number of researches tempted to moderate the enthusiasm which was provoked by emphasizing on “the theoretical problems and methodological limits” of the notion (Reghezza-Zitt et al., 2012; 2015), the paradigm connections of research developed by

C.S. Holling and the works of the economist F. Hayek, represent the neoliberal economic thesis (Walker, Cooper, 2011) and also its contribution to the development of “a neoliberal form of governing” (Joseph, 2013). For all of this, the temptation to make a “supplementary register of public actions” – even a new category of public actions – has been sensitive in French context since the end of the 2000’s (CGDD, 2014 and 2015). What can this analysis notion give to the situation of companies and deindustrialized territories? By what can it contribute – or not – to the elaboration of analyses and of pertinent politics to accompany their (re)development, by taking into account inherited soil pollution from industrial activities? Frequently associated by a virtuous and voluntary dynamic to have an effect on the crisis situation, does the resilience equally allow it to account for “ordinary” management methods or “weak” activities, swinging between mobilization, compromise or resignation in the long period of industrialization and deindustrialization?

Going back to the analysis of territorial players around the dialectic of the visibility/invisibility of soil pollution, the articles in this number equally contribute to the reflection on the notion of resilience which tends to polarize the debates on territorial evolutions perhaps to the detriment of notions which strongly pose the question of inequalities and of socio-spatial justice. The coordinators will be particularly attentive to propositions which engage such a reflection.

Several lines of questioning are suggested. They are addressed to the analyses in the case of studies situated in France or in other national configurations, as well as the more theoretic reflections on the notions of resilience and/or environmental justice. The authors will be attentive to precise the contexts and their investigation methods.

Invisible pollution?

Polluted soils are characterized by their immobility and their confinement, contributing to a material memorial invisibility of the phenomenon. Often “forgotten”, soil pollution can more rarely be the object of claims than air and water pollution, whose appearance are more tangible and apprehensible by senses (smoke, odours), which is not enough to assure a political “visibility”.

How does one explain persistent invisibility in soil pollution? Must one refer it to a global ignorance of “soil” as a substrate in social life?

Invisibility of soil pollution is also the product of logical players – even strategies – which has a significance on hiding the problem. How does one organize this invisibility? Since when? What could be the weight of this secret, industrial and/or medical?

Could invisibility also be considered as an ordinary management method of polluted soils, even as an institutional resilience strategy?

Invisibility does not refer uniquely to concealment. Can one speak of the creation of collective ignorance? Can one pinpoint the paradoxical visibility? Can one speak about pollution internalization by the local community, including the inhabitants? What are therefore the forces and the processes of this internalization that could not be analysed without an interrogation on social reports?

These interrogations equally have an epistemological dimension to address the researcher: how does one investigate hardly visible pollutions? What methods can be used to analyse the apprehension of pollution by players and/or inhabitants without for all its worth denouncing a workplace and/or living space?

Implementation and visibility of polluted soils

Soil pollution « appears » when it is transformed from plant and animal life, at the time of material movements (urban recycling, diffusion in water networks), but also when specific rules are put into place and designate the soil as polluted.

In a global manner, how does one proceed with the visibility of soil pollution? In which socio-spatial configurations? What are the capacities and strategies of action for the players (locally elected, State services, associations, specialist design offices, populations, industries) to make soil pollution a public problem? What are the legal tools, operational and cognitive, mobilized by the players to capitalize on knowledge? On which « documents » or « archives » can these approaches be supported?

The question of expertise, to access information and of its diffusion, is central to grasp the dynamics of soil pollution agenda setting. Knowledge has remained confined for a long time in technocratic circles, but the increase in strength of community ability leads to a confrontation between institutional expertise and layman expertise. What are the methods employed by this citizen or military expertise to recognize pollution and the associated environmental and health risks? What are the sociological characteristics of mobilized players? The question is relevant in (post) industrial territories sometimes subject to reinvestment dynamics and population transformation. Can one

Speak about environmental *empowerment*? Can we observe the collective construction of technical knowledge on soil pollution?

Soil pollution governance

The industrial territories have been characterized for several decades by a large movement of reconversion which restructures space, disrupts the countryside and redefines social links. The decontamination of soils or the treatment of polluted soils are an essential precondition in the implementation of urban renewal projects and to the allocation of new usage in former industrial territories.

How can the players face pollution which is often synonymous with constraints or nuisance? Can we observe, and in which territories, the set-up of player systems around soil pollution? To what level? Site level seems privileged, crystallising interests and conflicts. Is another governance level possible? Are players in the business world – bosses, employees, syndicates, Health, Safety and Working Conditions Committee, etc. – as interested in this? Do these player systems evolve in time on the same territory? At the will of factors and processes?

The implementation of urban neoliberal politics is mainly made in attractive territories, where the cost of decontamination can be profitable by financial and estate development, are these forms of resilience revealing the inequality between the territories and forms of socio-environmental injustice?

Finally the urban reconversion projects commonly integrate a development of industrial past of concerned spaces, centred in general on heritage technical dimension. Can the patrimonification nevertheless be a vector of social recognition in environmental and health battles, even though polluted soils can be considered as a negative and embarrassing heritage?

Questioning the resilience in a (post) industrial context

Considering its omnipresence in institutional, academic and media circles, its polysemic use, prescriptive and possibly divisive – resilient and non-resilient, the resilience must be integrated in its dimension and its political effects. To what does the name of resilience have in the context of transforming public action and the role of the State tempted by a « governing from distance » (Epstein, 2006) ? In addressing local companies, does this notion allow one to exceed a technical approach to the problems of pollution and others affected by the environment? Can it consist of a politicization vector to these questions in terms of public debate, the fight against the conflict of interest and the asymmetry between scholar and ignorant players, taking into account the socio-environmental inequalities? Or, on the other hand, to perpetuate the mechanisms of socio-spatial domination and contribute to justify neoliberal governing practices? Is it heuristic to make a distinction between institutional resilience and social resilience, between resilience injunction in a *top-down* logic and local manufacturing and pluralists to resilience? The proposition of C. Béné and his colleagues tries to retain the notion of its prescriptive character, taking into account strongly the question of social and political inequalities and « *the issue of losers and winners* » (Béné et al., 2012 : 48) in what sense is this implemented ? These interrogations seem all the more legitimate since, in French context, the notion of « environmental justice » tries to force its way through the public circle.

Delays and instructions

This thematic number project extended the works and reflections taken on as part of the EMIR project (Elision but inexorable to risks), adopted by the programme « Risks, decisions, territories » by the Ministry of Ecology, Durable Development and Energy, bearing on the question of urban resilience. It also follows research days of « Heritage pollution: what resilience in (post) industrial territories? » organized in March 2017 by University Jean Monnet in Saint Etienne.

The number coordinators are Christelle Morel Journal (Université Jean Monnet Saint Etienne), Thomas Zanetti (Université Jean Moulin Lyon 3), Georges Gay (Université Jean Monnet Saint-Etienne), and Cécile Ferrieux (AgroParisTech). The authors can contact Christelle Morel Journal (christelle.morel.journal@univ-st-etienne.fr) and Thomas Zanetti (thomas.zanetti@univ-lyon3.fr) to declare their interest and to ask all scientific questions in relation to this text. The articles are to be received no later than **30th September 2017** for a planned publication in 2018. They must respect the revue criterion (<https://geocarrefour.revues.org/1017>). With a maximum of 40,000 characters, spaces included (the editorial reserves the right to reject articles of more than 60,000 characters), the articles will be evaluated by a double blind test by the reading committee. The authors will receive notification of the decision (and correcting instructions) in January 2018.

BARLES S., 1993, *La pédosphère urbaine : le sol de Paris XVIII^e-XX^e siècles*, Paris, Ecole Nationale des Ponts et Chaussées, thèse de doctorat.

BÉNÉ C. and al., 2012, *Resilience: New Utopia or New Tyranny? Reflection about the Potentials and Limits of the Concept of Resilience in Relation to Vulnerability-Reduction Programmes*, September, <http://www.ids.ac.uk/files/dmfile/Wp405.pdf>

BOUKHARAEVA L. et MARLOIE M., 2011, Des sols agricoles au service de la résilience urbaine : réflexions à partir du cas de la Russie, *Espaces et sociétés*, 4, n° 147, p. 135-153.

CGDD, 2014, Villes résilientes : premiers enseignements tirés d'une synthèse bibliographique, *Etudes et documents*, n°114, septembre.

CGDD, 2015, Villes et territoires résilients, *Etudes et documents*, n°123, mai.

COMFORT L. K., BOIN A., DEMCHAK C. , 2010, *Designing Resilience. Preparing for Extreme Events*. Pittsburgh, University of Pittsburgh Press.

DANSERO E., PETTENATI G. et TOLDO A., 2016, Alimenter la résilience urbaine. Des nouvelles perspectives vers un Plan Territorial de la Nourriture pour la Ville de Turin, Construction Politique et Sociale des Territoires, Cahiers n°5, *Penser la fabrique de la ville en temps de crise(s). Rencontres franco-italienne de géographie sociale*, janvier, https://iris.unito.it/retrieve/handle/2318/1553822/118152/Alimenter_la_resilience%20finale%20Cahier%205.pdf

EPSTEIN R., 2006, Gouverner à distance : quand l'Etat se retire des territoires, *Esprit*, p.96-111.

JOSEPH J., 2013, Resilience as embedded neoliberalism: a governmentality approach, *Resilience*, 1:1, p.38-52.

HOLLING C.S. *et al.*, 2004, Resilience, Adaptability and Transformability in Social–Ecological Systems, *Ecology and Society*, 9, n°2.

REGHEZZA-ZITT M. *et al.*, What Resilience Is Not: Uses and Abuses, *Cybergeog : European Journal of Geography* [En ligne], document 621.

REGHEZZA-ZITT M. et RUFAT S. (dir.), 2015, *Résiliences. Sociétés et territoires face à l'incertitude, aux risques et aux catastrophes*, Londres, ISTE Editions Ltd.

WALKER J., COOPER M., 2011, Genealogies of Resilience: From Systems Ecology to the Political Economy of Crisis Adaptation, *Security Dialogue*, 42(2), p.143-160.