

## Habiter la pollution industrielle. Expériences et métrologies citoyennes de la contamination

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Christelle Gramaglia, a sociologist of science and the environment, studies polluted areas, focusing on the multiple attitudes to pollution. Her book *Habiter la pollution industrielle. Expériences et métrologies citoyennes de la contamination* investigates the everyday experiences of residents who must cope with industrial pollution. Analyzing why most of them prefer to endure the difficult living conditions of a polluted territory rather than relocate to an unfamiliar city, the author reveals the emergence of multiple modes of cohabitation, the reinterpretation of contamination, and the reshaping of pollution detection, potentially influencing its scientific recognition and governance.

Gramaglia carried out her ethnographic research in Viviez (Aveyron), Salindres (Gard), Fos-sur-Mer, Port-Saint-Louis-du-Rhône (Bouches-du-Rhône), Estarreja (Portugal), and Sierra Minera (Spain). Four excerpts from the field diary accompany four empirical chapters to answer some questions: how do residents protect themselves from pollution? Why do they accept the risks? How does pollution become part of their daily lives? The analysis focuses on the dietary, social and hygienic behaviors implemented to limit costs. Christelle Gramaglia proposes to study the *ethnomethods*, i.e., people's social practices aimed at determining the impact of pollution on their daily lives, as well as their perceptions of these practices, and their governance implication.

Pollution dirties and damages the environment. Contamination affects the air, soil, water, human and non-human bodies, weaving into a network of relations that erases any distinction between industrial and uncontaminated areas, between zones degraded by productivism and those seemingly untouched.

The author foregrounds the analysis of complexity and paradoxes within a network of social relations encompassing humans and non-humans, pollutants, and technological remnants that are simultaneously intrusive and viscous ("*intrusifs et visqueux*"). Her analysis focuses on everyday micro-interactions to open a space for a critical examination of knowledges and resignification practices, as well as the epistemic frameworks that citizens enact within their interactions with an environment that is, by definition, contaminated. In doing so, the study enables a nuanced exploration of resistance to prohibition and

sanction-based norms as a methodological avenue for understanding the emergent dynamics of the social in its situated, material, and relational dimensions.

The volume is based on exploring the role of *résidus technologiques*, understood as proliferating and intrusive materialities (Boudia et al. 2018) and *viscous* entities (Morton 2013). This definition serves as the foundation for analyzing the relationships between humans and *résidus technologiques* as sources of pollution. The value of this work is significant in multiple respects, particularly in its ability to draw from a broad spectrum of academic debates to identify epistemological resources that restore meaning to the complex reality of everyday cohabitation between humans and non-humans and dangers and sources of pollution. Moreover, it highlights the often overlooked yet politically meaningful array of everyday practices in highly polluted areas.

Local populations blame industries for the deterioration of their living environment. Cohabitation with factories is experienced as a constant nuisance by the residents (dust emissions, odours, smoke, noise, etc.), and doctors warn about the abnormal development of diseases, respiratory disorders, and the poor quality of water and air. In the author's view, environmental mobilizations and health risk mitigation are part of the picture but only tell one side of the story. The book critiques the mobilization scholarship that overlooks the epistemological value of everyday, less overtly confrontational practices in understanding citizen science based on attachment and daily routines in polluted sites. Indeed, pivotal, in Gramaglia's investigation, is the reliance on the historian of science Michelle Murphy's (2008; 2017) works *Chemical Regimes of Living and Alterlife* and *Decolonial Chemical Relations*. Murphy emphasizes the deep interconnectedness between society and its relationship with pollutants, arguing that there is no ontological basis for assuming a strict separation between contaminated and uncontaminated sites or categorizing certain bodies as anomalies while attributing healthier conditions to others. In every chapter, Gramaglia investigates the intricacies of such contaminations.

Chapter 1 focuses on the implications of various forms of pollution on the social and ecological relationships leading to the deterioration of networks of solidarity and cohesion. The grounding is on pragmatism, which intends to reconfigure the spectrum of analysis on the role of various groups of organized citizens, scientific researchers, and local administrators. Such an approach, in the author's intentions, allows the identification of types of pollution both from industrial production activities and from the narratives, constructions, and definitions that the various social groups give of them. In this sense, the chapter stresses the relevance of citizens' perceptions by virtue of their living on the contaminated territory, even if they do not participate to specific political mobilizations.

In Chapter 2, Gramaglia delves deeper into citizens' lives and their caring dimensions in polluted areas. Drawing insights from feminist scholarship, she focuses on citizens' profound, experiential insights into the alterations of their surroundings, shaped by daily practices such as gardening, fishing, or hunting. Borrowing the concept of *altervies* ("alterlife") from Murphy (2017), the author investigates how citizens' daily life is shaped, altered, and entangled with persistent chemical exposures and toxic legacies, by means of adaptation, resistance, and everyday negotiation with pollution. Despite lack of any political mobilization, people don't passively accept contamination but develop personal ways of everyday coexistence. Borrowing

also methodological support from Actor-Network Theory (ANT), the author bypasses any epistemological dualism to define “attachment” as the imbrication between dimensions of pollution and domination while configuring new forms of knowledges on their environment.

In Chapter 3, Gramaglia relies on the *ethnomethods* (*ethnométhodes* in French) to study the minor mode ways of cohabiting with contamination and pollution when the public sphere or authorities cannot provide a frame of interpretation, let alone a solution. Drawing from Garfinkels’ ethnomethodology, *ethnomethods* refer to the informal, everyday strategies developed by people in polluted environments to understand, navigate, and make sense of contamination. Here, we meet with Gramaglia’s approach recognizing the political dimensions inherent in diverse forms of citizen engagement with polluted site. By refusing any reductive understanding, she deliberately extends full political citizenship to more nuanced practices of reconfiguring attachment, acknowledging how everyday adaptations, knowledge-building activities, and relational adjustments to contaminated environments constitute legitimate forms of political engagement that transform both individual subjectivities and collective understandings of place. Conscious residents’ choices are to be found in accepting pollution as a necessary trade-off for jobs in industrial zones or the proactiveness in elaborating makeshift air filtration methods at home, such as placing wet cloths over windows. Gramaglia situates these participatory practices within an *intra-political* framework, drawing on the arguments of Michel De Certeau and James Scott. While these practices do not necessarily bear immediate social or political transformations, she argues that they nonetheless embody a transgressive and challenging stance toward norms, public policy, and authorities. The ethnomethods shed light on the multiple adjustments and reconfigurations of daily routines (whether collecting mushrooms and fruits or fishing), also reshaping the networks from which local and embodied knowledge emerges. These modifications offer the opportunity to build better informed analyses of citizen science. Indeed, the analysis in the following chapter serves not only to deepen the debate on *technical democracy* but, more importantly, to contribute to a radical rethinking of risk perception and governance.

In Chapter 4, Gramaglia examines a characteristic dynamic of citizen organizations in contaminated areas: the intertwining between citizens knowledges with scientific knowledge, mostly in the efforts to demonstrate causal links between pollution and disease, and the progressive search for not only pecuniary but existential compensation to the damage to health and social life. Two participatory biomonitoring experiments in the Fos area showed that including the perspectives of various sentinel organisms greatly enhanced the accuracy of environmental measurements. This approach generated new, locally relevant knowledge, representing what she defines as a “bottom-up” science that addressed affected populations’ needs. Beyond more precise pollution data, the experiments also fostered new social and ecological connections. The collaboration between volunteers and lichens led to altered perceptions and practices, making pollution more tangible and highlighting how to live in environments impacted by excessive productivism, reshaping people’s understanding of contamination. The occasional meetings, particularly among fishermen, revealed the links between industrial practices, technological residues, and contamination, showing that all organisms, from the smallest to the largest, including humans, are exposed to the same environmental threats (p. 238). In this context, the experience of the *Institut Ecocitoyen* (Ecocitizen Institute), a research and activist organization

dedicated to enhancing scientific understanding of pollution and its impacts by incorporating the perspectives of local populations, environmental protection groups, and other stakeholders, emerges as a particularly successful example, one which the author claims to be a part of. As she describes, the Ecocitizen Institute, on one hand, conducts its own research and shares the results through scientific conferences modelled after popular universities, to stimulate public debates. On the other hand, it engages with industrialists who occasionally seek assistance in measuring unregulated emissions, for which no standard methods exist. While some criticism may arise regarding the Institute's reluctance to challenge the power imbalances that drive pollution, the emergence of a transmission network, linking pollution sources, knowledge, and measurement, can pave the way for the development of new standardized methods for pollution detection, where affected communities have a more prominent voice.

The book is a rich source of information regarding some very well-known polluted areas in France, as well as Spain and Portugal. Still, a few additional observations merit discussion before concluding.

At times, the focus shifts ambiguously between *résidus technologiques* and industrial production, the latter receiving less attention, to the detriment of a deeper understanding of the ontological link between the capitalistic logic of production and the redefinition of the roles of citizens, workers, fishermen, researchers and experts. While it is of utmost importance to challenge narratives of citizen passivity in the absence of overt mobilization, the analysis proves defective as it fails to propose a coherent alternative framework for understanding the dynamics and mediating actors that have compelled communities to cohabitate with polluted sites. Chapter 2 appears to be the most problematic. It raises questions about the necessity of employing the ANT methods, if it merely serves to overcome an epistemological dichotomy that favours mobilization over everyday human-contamination cohabitation. It remains unclear whether the ANT framework meaningfully advances the analysis of human-non-human relationships, and, if so, in what form and through which actants reality is ultimately reconfigured. As a matter of fact, it is unclear where the "actants" are, in Latourian terms, within the scene. It falls short in accounting for the heterogeneous networks of human and non-human actors – regulatory bodies, industries, technological infrastructures, scientific discourses – whose associations in the history of sites generate the socio-material assemblages compelling communities to cohabitate with *résidus technologiques*. At the same time, by reaching the fourth chapter, it becomes clear how the quality of the ethnographic descriptions allows for a refined analysis of living in polluted areas in the present. Everyday practices of adaptation and attachment to the contaminated lands, the reconfiguration of neighbourhood, social, and political ties, confirm the epistemological need to analyze what mobilization literature often overlooks: citizen science, though not new, deserves more informed assessment through institutions that actively bridge citizen knowledge and scientific expertise. The relevance of the study lies precisely in the correlation between the rich ethnographic material and the mediating role played by the Ecocitizen Institute, with strong relevance on new socio-material assemblages and reconfiguration of knowledge production towards a co-production focus on governance dynamics. While the ANT framework appears fragile or not fully operationalized, the last chapter and the conclusions allow for better informed investigations and actual engagement on cohabitation between humans and contaminated territories.

## References

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