

Chapter 2

The Contribution of Green Criminology to the Analysis of Historical Pollution

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The past is never dead. It's not even past.

(Faulkner 1951).

Contents

1	Towards a Hidden Geography: A Criminological Proposal	22
2	Love Canal: A Prototypical Case of Historical Pollution?	26
3	Clues About the Phenomenology of Historical Pollution in Italy: Caffaro Industry in Brescia as a Case in Point	29
4	The Case of Huelva, Spain: A Situation of Organized Irresponsibility?.....	34
5	Some Relevant Questions Useful for Approaching Historical Pollution	39
6	An Opening to the Ambiguity of the Observed Phenomena.....	41
7	What Are the “Discovered” Sensitive Points of a Hidden Geography?.....	42
8	The Interdisciplinary Relevance of the Process of Definition.....	44
9	Assessing the Perceived Seriousness of Environmental Crime: New Paths in Criminological Research	47
	References	50

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1 Towards a Hidden Geography: A Criminological Proposal

Scientific and technological developments have introduced into our late modern societies a new type of vulnerability, which translates into risks likely to lead to serious consequences—often irreparable¹—for human and natural environments. Environmental disasters such as Minamata,² Seveso,³ Love Canal,⁴ Chernobyl,⁵ Exxon Valdez, Deepwater Horizon, and Fukushima bear names that reflect what Laura Centemeri (2006, p. 59) defines as a “shared geography of prototypical disasters”—a sort of collective memory of such events—that has led to an acknowledgement of industrial, technological, and environmental risk on a global scale. It is along these paths that social actors have started to become aware of the dramatic consequences of the human–environment relationship.

The aim of this contribution is to map out, from a criminological perspective, some contextual and theoretical scenarios that help to interpret and properly situate the phenomenon of “historical pollution” within wider cultural and scholarly frameworks. Like a lump of naked rock that is worked little by little to uncover a hidden shape, just such an attempt will be made to outline a number of relevant criminological facets of historical pollution. In its narrowest meaning, this expression refers to industrial processes that have ceased but whose effects and impacts—harms and threats to the environment and human health—continue to emerge and to manifest, even dramatically, after many years. On the other hand, according to a wider definition of the phenomenon, the expression may also include activities still in progress, as long as they are waning.⁶ More specifically, “historical pollution” denotes

the pollution of sites and natural resources (intended as the relevant *behaviour*), which started or took place in the past, due to industrial activities or other production-related activities. Historical pollution usually entails the emergence—or the persistence—of

¹On this aspect, see South (1998), Beck (2009 [2007]), Brisman and South (in press). See also Centonze (2004).

²The acknowledgement that harm to human health and the environment had been caused by mercury contamination deriving from the chemical plants of Minamata (at the end of the 1950s) marked a true turning point for Japan. From that moment on, efforts to reduce pollution could not be ignored.

³See in this volume, Chap. 4.

⁴See in this volume, current chapter, and Chap. 8.

⁵See Galli and Nigro (1987) on the perception of radioactivity following the Chernobyl disaster.

⁶For the purposes of our research, the concept investigated also includes the phenomenon that is named “legacy pollution”. The concept of “ongoing pollution” will not be used in opposition to it, but rather will be treated as a type of legacy pollution, identifying past conducts whose effects are still ongoing. Moreover, since the concept may refer to a wide range of hypotheses, it is necessary to limit the extension of the phenomenon on which the research is focused: attention has to be paid only to pollution caused by industrial and other production-related activities. See in this volume, Chap. 1.

contamination of sites and natural resources (meant as the *effect* of such a conduct) a long period of time after the original pollution took place.⁷

If criminology has had difficulties in viewing itself as a “prospective” discipline (Brisman and South 2013b, p. 412), this temporal myopia⁸ has also concerned the “historical” depth of its own gaze, normally limiting it to the best-known crimes that do not require a radical rethinking of the horizons of space and time through which we approach crime and its consequences. On the contrary, this criminological contribution could be useful in promoting increased knowledge and theoretical reflexivity about what can be defined as the “historical inheritance” of industrial development.⁹ By following the outline and entering the boundaries of what can be defined as a hidden geography, the traditional boundaries of the criminological discipline will be breached, in order to inaugurate connections with and within *green criminology*. Green criminology allows the meeting of a wide range of theoretical orientations aimed at connecting a series of issues of crucial importance for today’s world: environmental crimes, harm, and various forms of (in)justice related to the environment, the animal species, and the planet. Without becoming a single unity, these approaches come together within an increasingly broad perspective (see, for example, South 1998; Lynch 1990; Lynch and Stretesky 2003; Walters 2010; White 2011; Sollund 2012; Natali 2013a) that examines the bio-physical and socio-economic consequences of the diverse sources of environmental harm, such as pollution, the deterioration of natural resources, the loss of biodiversity, and climate change (see South et al. 2013, pp. 28–29; Natali 2015a).¹⁰

With this background, I will focus on some thematic nuclei helpful in observing and defining the phenomenon of historical pollution under the heading of complexity. Keeping away from a deductive approach, I will take a “photograph” which sums up within itself some clues concerning the object under consideration,¹¹ and remains sensitive to its variegated aspects. I will do this by considering three

⁷See in this volume, Chap. 3, Sect. 2.

⁸On this, see also Brisman (2014b, 2015b).

⁹“Unlike other forms of crime, green crime’s effects tend to be persistent and long term. Ordinary crimes or street crimes usually cover short durations in time. [...] The time span of green crimes, however, tends to be measured in terms of decades or even centuries since pollutants may last and accumulate in the environment. Once a pollutant is emitted into the environment, the life course of that crime begins and continues until the pollutant is cleaned up, or until it becomes inert” (Jarrell et al. 2013, p. 423).

¹⁰It can certainly be said that even before the contributions of green criminologists, criminology did deal with the environment, albeit in an indirect way. The object of study was, in these cases, organized crime and corporate crime. For example, one can think of waste management or the construction industry, where the environment is adversely impacted through illegal business patterns and practices, yet the criminological inquiry focused on the illegal acts and omissions, not the ensuing environmental harm. On the various typologies useful to deepen our understanding of environmental crimes and harms, see South et al. (2013). On the value positions that shape green criminology, see Potter (2015).

¹¹The research into these “clues” directly recalls the type of inference known as “abduction” (see Verde and Nurra 2009; Ceretti and Natali 2009, pp. 387–395; Eco 1983).

different scenarios of historical pollution: Love Canal (USA), Brescia (Italy), and Huelva (Spain). In describing these particular contexts—just three examples among the various cases of historical pollution—it will be possible to highlight some common features of this phenomenon and, at the same time, to see its global relevance.

Before describing the contextual scenarios, a few methodological points are in order. Every researcher knows full well that the choice of a certain method implies a series of decisions as to which research questions to formulate and pursue, which theories to explore, which data to collect, and how to analyse and interpret the data acquired (Cardano 2011). With regard to the distinctive features of environmental crimes, an eco-global criminological perspective (Heckenberg and White 2013, White and Heckenberg 2014) suggests that we consider: (1) *who* is the victim: humans, non-human animals, an entire ecosystem; (2) *where* the harm takes place: at a local level, globally, or somewhere in between; (3) what is the *context* in which the harm manifests itself: the natural or the built environment—urban or rural; and (4) what is the *temporal frame* within which the consequences of the harm can be analysed: immediate, delayed, or intergenerational. In this regard, the first question to be asked concerns the exact “when” of the environmental phenomenon that is to be researched: *before* the harm happens, *while* the harmful consequences are developing, or *after* the harm has occurred (assuming that there is a “stopping” point).¹² In the case of historical pollution and contamination it seems essential to keep together more temporal perspectives in relation to single cases, matching the analysis of the harmful consequences caused by the pollution of the area over the course of time with the study of environmental harms as they are developing here and now.¹³

Moreover, the meeting between two emerging sensitivities such as green criminology and cultural criminology¹⁴ could prove useful in positioning these phenomena on the cultural and historical level. In the convergence of those two theoretical orientations—a middle ground that Brisman and South (2014) refer to as “green cultural criminology”—one might find those studies that analyse the intersection of crime, environment, culture, and justice, also including the significant dimension of socio-environmental conflicts.¹⁵ As Jeff Ferrell (2013, p. 349) writes:

By the nature of their subject matter, both green criminology and cultural criminology push against the conventional boundaries of criminology, and so tend to upset the definitional and epistemic order of the discipline. Likewise, both are open to exploring a range of social harms and social consequences, whether these harms are conventionally defined as

¹²On this, see Heckenberg and White (2013, p. 86).

¹³Heckenberg and White (2013, p. 86) write: “If we choose to examine an event that is *a number of years in the past* (e.g. poisoning of waterways over many years), then the historical method can be utilized, drawing upon documents, maps and photographs and site records that facilitate a retrospective analysis of the phenomenon in question.”

¹⁴Since its inception, cultural criminology has called for the development of a form of criminological *verstehen* that is capable of exploring the universes of sense and the emotional processes related to crime and to its control. See Ferrell et al. (2008).

¹⁵On this topic, see Brisman et al. (2015).

“criminal,” currently left outside the orbit of law and criminality, or even themselves propagated by the criminalization process. At their best, both link their overt substantive concern—environmental harm in the case of green criminology, meaning and representation in the case of cultural criminology—with broader issues of power and inequality. And certainly both attempt to situate their subject matter historically, both in terms of its long-range development and its current residency within the crisis of late modernity and late capitalism.

Historical analysis thus becomes crucial. In this regard, environmental historian Simone Neri Seneri (1990) points out how academic culture has for too long ignored the processes that have over time led to present-day environmental deterioration. In order to develop an appropriate “environmental history” it seems necessary to: (1) pay attention to the relationship between historical and biological time; (2) go beyond a rigidly anthropocentric and modernistic view of the relationship between humans and the environment; and (3) deepen the “history of conscience” that historical actors have with respect to their action on the socio-ecological context, including not only severe threats to the environment and to human health, but also apparently less significant behaviours which, when repeated, produce effects in the long run (Neri Seneri 1990, pp. 891–893). From such a standpoint—and recalling an international conference of economic historians in Milan in 1994 (Saba 1997, p. 466)—Neri Seneri (1990) highlights how the environmental historian should not only analyse and explain the past, but also warn or *alert* us about the future. The respective roles of the environmental historian and the green criminologist find here an important place of convergence.¹⁶ Another point of contact with historical knowledge is found not only with reference to “macroscopic, obvious and calamitous transformations (acute environmental crises)” but also to “gradual and diffused ones, harbingers of equally dangerous alterations for the ecosystem where the human species lives” (Neri Seneri 2005, p. 69).

More importantly, strengthening the historical ties between events that are distant from each other in time (past and present) implies the adoption of a method that is open to the complexity and to the oxymoronic character of such ties; it also means bringing to light a plurality of narratives (Natali 2013b) and saving them from oblivion. It means, ultimately, academic and cultural work on memory—from both a historical and criminological viewpoint—with profound consequences for our present and possible futures. Even from a purely historical perspective—essential to the investigation here described—only an interdisciplinary method can adequately interpret the complexity of the observed phenomena (Saba 1997).

Finally, as the relationship between temporal and spatial analysis refers directly to the dialogue between historians and geographers,¹⁷ it is also essential to decide upon a geographical starting point, in order to catch the particular features of the context considered.¹⁸

¹⁶On the role of the criminologist, see Forti (2000, p. 318), and Natali (2015a, p. 30).

¹⁷On this aspect, see Neri Seneri (2005, p. 17); see also Armiero and Barca (2004).

¹⁸To this end, one can access the online *Environmental Justice Atlas*: <http://www.ejolt.org/maps/>. This online platform is also useful because environmental crimes and harms of considerable

2 Love Canal: A Prototypical Case of Historical Pollution?

In 1978, the Love Canal disaster resonated nationally in the US media, changing forever the awareness of environmental risks and of contaminated sites (Szasz 1994; see also Rotolo 2016). Love Canal is certainly “one of the most discussed and influential case studies in environmental history” (Blum 2008, p. 148). Its story might be summarized as follows:

Hooker Chemical dumped large amounts of some very nasty stuff in a hole in Niagara Falls, New York, and then covered it up—literally and figuratively—before selling the property to the local school board for \$1. In the 1970s, large amounts of rainfall caused some of the buried waste to leak out of its containers, flow to the surface, and contaminate homes in the area. The oozing waste generated vocal complaints, which led Michael Brown, a Niagara Falls reporter, to investigate the contamination. After reading Brown’s articles, Lois Gibbs, a shy young housewife, connected the chemicals to her son’s numerous illnesses. Gibbs then single-handedly began a crusade to get the entire neighbourhood relocated, manipulating the media to her advantage. She became a savvy political leader, extolling the dangers the chemicals posed to children and pressing for safety above all else. She gained the attention of the nation and the president, and as a result, the state and federal government agreed to purchase all the homes in the beleaguered neighbourhood. Congress later passed the Superfund legislation to help others in similar situation. (Blum 2008, p. 1)

This description, however, like many others, is just a “standard version of the Love Canal story” that almost inevitably disregards the deep historical context of the place¹⁹ and the complex dimensions of grassroots activism (Blum 2008, p. 2). With respect to the history prior to 1978, it suffices to remember that, since the middle of the 1700s, the Niagara Falls have epitomized an *ambivalence* that represents a common tension of the human–environment interaction: on the one hand, they were admired for their “natural magnificence”, which takes one back directly to the experience of the sublime; on the other, they were appreciated for their power-generating potential for various types of industry (Blum 2008, p. 18). In fact, it is really because of this new source of power that “industry sprung up along the banks of the Niagara River in the late 1800s and early 1900s” (Blum 2008, p. 20). It is within this historical and environmental context that the

Hooker Electrochemical Company (later Hooker Chemical Company), founded by Elon Hooker, began to produce chemicals in the Niagara Falls area. Over the next seventy years, Hooker Chemical became an integral part of the community, providing jobs to residents and tax revenue to the local governments. In 1942, Hooker Chemical obtained the right to dispose of its chemical wastes in the old Love Canal, and it later purchased the property from the city. This development continued the long-standing tradition of exploiting the land of Niagara Falls. (Blum 2008, p. 21)

(Footnote 18 continued)

seriousness (such as historical contamination) may be intertwined with environmental conflicts. On this, see Brisman et al. (2015).

¹⁹See also Colten and Skinner (1996).

The second aspect normally ignored by “standard” accounts concerns the environmental activism that characterized the citizens’ response to the socio-environmental disaster of Love Canal. An in-depth study endowed with a historical sensitivity to context cannot but emphasize the complexities and the “complications of race, gender and class in grassroots activism” (Blum 2008, p. 2). Each social actor involved in that story had a unique, personal perspective and told a “different version of the truth about what really happened” (Blum 2008, p. 3; see also Levine 1982, pp. 1, 193–194). This means to bring to light and recognize the multiplicity of voices and actions that have given form to the interpretation and the social construction of the reality of the disaster and of the following response. The personal histories and the changing definitions of the situation therefore make complex a macro history that could appear clear, straightforward, and compact in a less reflexive analysis.

Focusing on the peculiar aspects that make the case of Love Canal a paradigm for the study of cases of environmental pollution, it is possible to identify some significant points:

- The Love Canal disaster developed over several decades: the impact of leaching chemicals was uncertain and slow in developing, the visible effects limited and difficult to detect (Levine 1982, pp. 1, 14).
- Love Canal may be defined also as a “conceptual event”: “[t]he physical phenomena are out there, present in the world. Equally important, so are the social processes whose consequences are very real” (Levine 1982, p. 219). In fact, the physical manifestations of the disaster have been “readily overlooked, ignored, denied, and minimized” (Levine 1982, pp. 1, 170).
- In the Love Canal story, “there was no crisis or disaster until authorities defined it publicly and the event was reported in the world press. Unlike more familiar disasters, with known and uncontrollable moments of impacts, the Love Canal emergency could have been defined earlier or later” (Levine 1982, p. 1).
- Love Canal represents a clear example of the “complex ethical dilemmas we face in balancing human health and well-being against economic costs and benefits” (Levine 1982, pp. 1–2).
- The social awareness of the ongoing, creeping disaster was a lot less clear than told by the “standard versions of the Love Canal story”. For example, “[b]y the mid-1970s, only a few old-timers remembered the whole history of the canal that had turned into a schoolyard and open fields. Most of the people there had arrived in the mid-1960s and later, after the school and road construction was complete, and were unaware of the early history of the place” (Levine 1982, p. 13). Furthermore, “the mental process of moving from a condition of ignorance about the chemicals, to belief in the possibility of personal danger from them, to sharing the beliefs of others and joining in activities—some of them unaccustomed ones—with organized residents was rather slow and uneven overall” (Levine 1982, p. 193).

- The temporal dimension therefore assumes a peculiar sociocultural and institutional connotation: “Both individuals and institutions reacted to Love Canal with slowly dawning awareness of the far-reaching consequences of past activities: burying chemical waste and encouraging people to live in homes and send their children to school close to the disposal site. The consequences might or might not have been anticipated by the people who decided long ago to bury and to build, or who allowed these things to be done. Their decisions and actions affected the future, but the individual decision makers were not accountable at the time of their actions. The day of reckoning was deferrable, with the impact and responsibility to be borne by someone else in the distant future” (Levine 1982, p. 2).
- Scientific studies “became part of an emerging interpretation of what happened to and what was done for the people of Love Canal” (Levine 1982, p. 115).²⁰ The role of science acquires a decisive meaning in a highly complex context, such as the environmental one, that is inevitably open to scientific uncertainty and to conflicting scientific interpretations (see Natali 2015a; Hall 2014, p. 104).

The story of Love Canal, briefly summarized above, is, then, the story of the “loss of innocence” of a community with respect to the environment in which it is situated, but it is also a “success story” because it demonstrates that “ordinary citizens”, if organized, can gain power and force corporate and governmental accountability.²¹

Exploring now two other historical–geographical contexts involved in phenomena of historical pollution, it will be possible, on the one hand, to trace the thin lines which relate them to a prototypical disaster such as that of Love Canal; on the other hand, we will see how the peculiar developments that have characterized the “success story” told so far—that is, the social and institutional answers prompted by the “discovery” of the disaster—do not find significant correspondences in the cases that will be described.

²⁰“From the very beginning, the definitions of the Love Canal health and environmental problems—where they are, what they are, how serious they are—have varied considerably, depending on who defined the problem, when, to whom, and what they stood to gain or lose from the definition. The words, however, were usually spoken in the language of science” (Levine 1982, p. 168).

²¹A victimological approach becomes extremely useful in this case (see Williams 1996). From a historical–sociological perspective, Levine (1982, pp. 176–177) pinpoints some shared beliefs about the dramatic turns the inhabitant of Love Canal experienced: (1) we are the blameless victims of a disaster; (2) the problems we face are too large for us and thus we need help; (3) we are good citizens and we deserve help from the government; (4) the government can and should help us now; (5) we are being treated unfairly; (6) we must stick together to take care of ourselves; (7) family and community help is not enough for our needs; (8) no one but the government has enough resources for our pressing needs; and (9) we must work together to force the government to provide us that with which we are entitled.

3 Clues About the Phenomenology of Historical Pollution in Italy: Caffaro Industry in Brescia as a Case in Point

It is well known that Italy's changeover to industrialization involved peculiar costs and socio-environmental consequences that emerged in all their complexity only after a long period of time.²² Compared to other European countries, the process of industrialization that took place in Italy during the twentieth century started slowly and belatedly, making it a "latecomer" country. Its delayed start explains, at least in part, why both legislative regulations and social awareness of environmental issues in Italy arose comparatively late.²³

The Italian industrialization process was, in many respects, a dramatic and ambivalent transformation (Ginsborg 1989). Particularly after the Second World War, Italy underwent a period of great business upheaval and industrial development: "In a very short time our country was able to conquer the poverty of centuries" (Ferrero 1999, quoted in Coltorti 2011, p. 143). The Italian economic miracle (1952–1963) was characterized by a decisive increase in production and by an important process of accumulation, in the basic economic sectors and in heavy industry. Because of a complex set of factors (which cannot be summarized here), after 1975 what happened was a "marked slowing-down of the role that big businesses performed in the overall development of the Italian economy" (Coltorti 2011, pp. 143–145).

Very briefly, it is possible to describe the specific nature of Italian industrialization as follows: the industrial revolution took place between 1896 and 1914 with the development of the iron and steel industry and mechanical engineering, but it only really took off after the "economic miracle" of the 1950s—first in the industrial triangle in the north-west (Lombardia, Piemonte, Liguria), then in the north-east, and finally in the centre (Amatori 2000, p. 66; Giannetti and Vasta 2003, pp. 9–41, 183; Zamagni 2005, p. 84; De Simone 2014, pp. 286–288); one can observe a territorial and structural polarization (between geographical areas and between large and small industries) (Neri Seneri 2005, p. 37); in the steel, petroleum, and petrochemical industries, businesses were subsidized by the State or belonged to it (e.g. the Istituto per la Ricostruzione Industriale or the oil and gas company Eni); in the 1970s, the big businesses declined; in the 1990s, privatization processes began.

In the Italian context, certain researchers were pioneers in the field, for they moved from a perspective of history of industry to the analysis of specific case studies which were "particularly exemplary of the environmental and territorial impact of the large industries, as they are the source of serious and repeated

²²On the traffic of toxic waste in Italy, see also an interesting piece of investigative journalism by Pergolizzi (2012).

²³See Neri Seneri (2005, p. 42). See also in this volume the quadripartite chapter on Italy, by G. Rotolo, B. Venturato, E. Greco, R. Sabia, and C. Micciché. Obviously, there are examples in which latecomers to industrialization address environmental issues earlier in their histories as a result of seeing what has transpired in other locations.

phenomena of industrial and urban pollution” (Neri Serneri 2005, p. 36).²⁴ More specifically, the scenarios relevant for this investigation can be found in three different parts of the country: the industrial triangle of north-western Italy (Lombardia, Piemonte, Liguria), the centre and the regions of the Triveneto (Veneto, Trentino-Alto Adige, Friuli-Venezia Giulia) and, finally, the south and the islands.²⁵ Within this tri-partition, it is possible to start identifying the “hot spots” of historical pollution in Italy, albeit with a cartographic exercise still in progress. On the basis of the defining premises shared with the research team²⁶ and the sources that may be employed (e.g. the Istituto Superiore di Sanità and its epidemiological study SENTIERI²⁷), we can distinguish three distinct scenarios.

The first context is represented by the petrochemical industries of Porto Marghera,²⁸ Ravenna, Ferrara,²⁹ Taranto,³⁰ Brindisi, Priolo-Augusta (Siracusa, Montedison), Gela, Cagliari (Saras), Crotone (Pertusola Sud)³¹—a far from

²⁴See, for example, Ruzzenenti (2001), De Luigi et al. (1995), Poggio (1996).

²⁵Ginsborg (1989, p. xii) writes: “this tri-partition seems to me more effective than the traditional North-South division in illuminating the physiognomy of the processes of development that affected [...] the nation.”

²⁶See in this volume, Chaps. 1 and 3.

²⁷It is essential to make reference to the Istituto superiore di sanità (ISS, the Higher Institute for Health). For the past few years, this institution has been concerned with measuring the level of contamination of industrial areas, both used and disused, focusing also on the possible risks for any residents. The project, called SENTIERI (Studio Epidemiologico Nazionale dei Territori e degli Insediamenti Esposti al Rischio da Inquinamento—National epidemiological study of territories and settlements exposed to pollution risks), confirms some correlations between certain substances (e.g., asbestos) and specific pathologies. It was first carried out in 2010 and an account was published in a supplement of *Epidemiologia e Prevenzione*, 34 (5–6), September–December 2010; it was updated in 2011 and can be found in *Epidemiologia e Prevenzione*, 35 (5–6), September–December 2011. The project was the result of a collaboration of CNR and La Sapienza University of Rome with the World Health Organization (WHO). The SENTIERI project assesses the health status of residents of Italian polluted sites through the analysis of mortality for the period 1995–2002, to set priorities in remediation intervention and so prevent environment-related diseases, for a total of roughly six million people in 298 municipalities (twenty-one in northern Italy, eight in the centre, and fifteen in the south). One of the limitations of the study is that when considering landfill sites it only took into account the legal ones, when it is well known that the illegal ones are more harmful, given the total absence of restraint. Only in the case of dumps in the provinces of Naples and Caserta was the study also expanded in this direction; it highlighted a close link between illegal dumps and certain cancers, beside some forms of congenital malformation (Pergolizzi 2012, pp. 156–158). In any case, even with these data, we are still very far from a substantial mapping of the critical environmental issues of our country (Pergolizzi 2012, p. 160).

²⁸On this, see Stella (2000, 2003), Centonze (2004), and Perini (2002). See in this volume, section II of the Chap. 5 on Italy, by B. Venturato and E. Greco.

²⁹On the chemical plants of Ravenna and Ferrara, see Pergolizzi (2012, pp. 23–24).

³⁰On the Taranto case, see Rotolo (2012, pp. 90–103).

³¹In 1930, the petrochemical complex Pertusola Sud (Eni Group) started manufacturing at Crotone (Calabria), bringing (as in many other similar scenarios) work opportunities and wealth on the one hand, and contamination and health hazards on the other. Once the industrial activities were wound down, all that remained were the disastrous consequences of the industrial past.

exhaustive list. But think also of the events related to the reclamation of the Italsider at Bagnoli (Naples) whose productive activity definitively ceased in 1992, or of the industrial area of Porto Torres (Sardinia), or of the Ilva at Genoa-Cornigliano. In Tuscany, the Tioxide at Scarlino (Grosseto)—a British multinational corporation that took over the old complex of Montedison in order to manufacture titanium dioxide—had discharged the residual waste of its manufacturing for years (from 1978 to 1985) (Pergolizzi 2012, p. 163). In addition, one could also think of the scenario of the Bormida Valley, which very clearly illustrates long-term environmental harm and devastation. From the end of the 1800s, at Cengio, in the province of Savona, Acna (Azienda coloranti nazionali e affini) manufactured explosives and nitric acid; in 1990, it came under the control of Enichem and manufactured bon acid, beta naphthol, Schaeffer's acid, and phthalocyanines. On 23 July 1988, the plant was closed down, leaving as a lasting legacy environmental harms that are nearly impossible to remedy. Data gathered by the WHO prove the seriousness of the situation, which has also had direct effects on the health of the resident population.³²

A second scenario that pinpoints specific phenomena of historical pollution concerns landfill or dump sites, both legal and illegal.³³ One of the best-known cases is that of the Pitelli dump, on the so-called poison hill at La Spezia. The dump started in 1976, and over time, new installations were added which extended it out of all proportion. It was closed down in 1996.³⁴ In this instance, the connection between the disposal of waste and the ensuing socio-environmental harms presents such extremely high levels of complexity that it is even difficult to identify victims. Another “exemplary” case is represented by the dumps at Bussi on the Tirino (Pescara), discovered in 2007 by the National Forest Rangers (Corpo Forestale dello Stato). The “poison dumps” at Bussi are the most extensive in Europe, with twenty-five hectares of toxic wasteland.³⁵

Finally, a different scenario that is part of the possible phenomenology of historical pollution is the so-called brownfield.³⁶ “Brownfield” is a word coined and used in the USA to describe those sites whose expansion, re-qualification, or reuse are complicated by the possible, or effective, presence of contaminating sources. They are mainly the legacy of processes of industrialization (often carried out at an accelerated pace) that have affected various areas of the planet. The area of Santa Giulia-Montecity (Milan) which is built on what was left of the Montedison and of

³²See also Pergolizzi (2012, p. 133).

³³In these contexts, it is important to stress that the often irreparable socio-environmental harms that follow are caused by legal as well as illegal dumps (Pergolizzi 2012, p. 155).

³⁴In the Pitelli area, there would also have been buried waste from the factory of the Union Carbide Unisil Spa Termoli (Pergolizzi 2012, p. 141).

³⁵See in this volume, section II of the Chap. 5 on Italy.

³⁶See also Lynch and Stretesky (2014, p. 164).

the ex-steelworks Radaelli, is only one example,³⁷ but the same problems of reclamation concern the former area of Falck (a steelworks) and the railway station at Sesto San Giovanni, as well as the SISAS (Società Italiana Serie Acetica Sintetica) at Pioltello, still awaiting reclamation since 1985, or the Eternit factory at Casale Monferrato.³⁸

If we move around the map provided by the website *Environmental Justice Atlas*, we find, in Italy, a “hot spot” that gives focus to some profiles that are of interest for this investigation: Caffaro industry in Brescia (Fig. 1).³⁹

From the end of the 1930s until 1984, Caffaro industry (Brescia, Italy) produced enormous quantities of polychlorinated biphenyls (PCBs), spilling them, as well as dioxins, into the surrounding environment. After fifty years of pollution, the level of social and environmental harm is particularly serious, so much so that in 2002 the site was included among the fifty-seven sites of national concern identified by the Ministry of the Environment as contaminated and in need of reclamation and clean-up.⁴⁰ Research carried out by Paolo Ricci, an epidemiologist of the Azienda Sanitaria Locale of Mantova, in the context of a collaboration between the Istituto

³⁷The area should have been reclaimed before building the residential neighbourhood, removing the contamination produced by decades of industrial activity. Because of irregularities in the reclamation work, part of the area was confiscated in 2010, including the park and the kindergarten, which were built on mercury- and chloroethylene-contaminated ground (Pergolizzi 2012, p. 147).

³⁸Eternit opened its first asbestos production plant in Italy in 1907. Altopiedi (2011, 2013) analyses this case from a criminological perspective. The sociologist explores on the one hand the strategies of denial through which those responsible for the crime facilitate the process of decriminalization of their actions and, on the other, the process of the social construction of victimization. On this, Ruggiero and South (2013, p. 20) write: “The use of asbestos was banned by the European Union in 1999, 101 years after the discovery of its danger. One of the reasons it took so long to ban the substance was because asbestos ‘kills slowly’ and, in many cases that were ever actually brought to court, lawyers as well as pathologists could easily dismiss the association of asbestos with lethal respiratory conditions”. Concerning the Eternit factory in Casale Monferrato, “[p]opular mobilisation and citizen action played a major role in bringing this history of harm into the arena of media news and the courts. A long-running and contentious affair was eventually transformed by popular political protest from a matter officially deemed an ‘accident’ into a trial [...]”. On this point, see also South (2015, pp. 18–19); see also in this volume, section II of the Chap. 5 on Italy.

³⁹To offer a case in point, suitable for highlighting some sensitive points that arise when speaking of historical pollution, I did not look at contexts in which a present pollution event is added to a past one. The observational field would be too wide and would complicate the definition of some essential aspects that I intend to highlight. On the other hand, it is evident that cases of ongoing pollution, such as that of the Ilva of Taranto, will provide some useful cues because of the presence of analogous dynamics. As for the possibility of generalizing from the results drawn from a case study, Heckenberg and White (2013, p. 96) recall the concept of “naturalistic generalization” described by Melrose (2010). See also Stake and Trumbull (1982).

⁴⁰There are fifty-seven contaminated industrial sites which, because of their dimensions, have been declared of national concern, but according to the ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale—the Higher Institute for Environmental Protection and Research), there are more than 15,000 areas in Italy affected by more than a century of industrial history. The best known, as already mentioned, are the iron and steel industry at Bagnoli, the chemical industry at

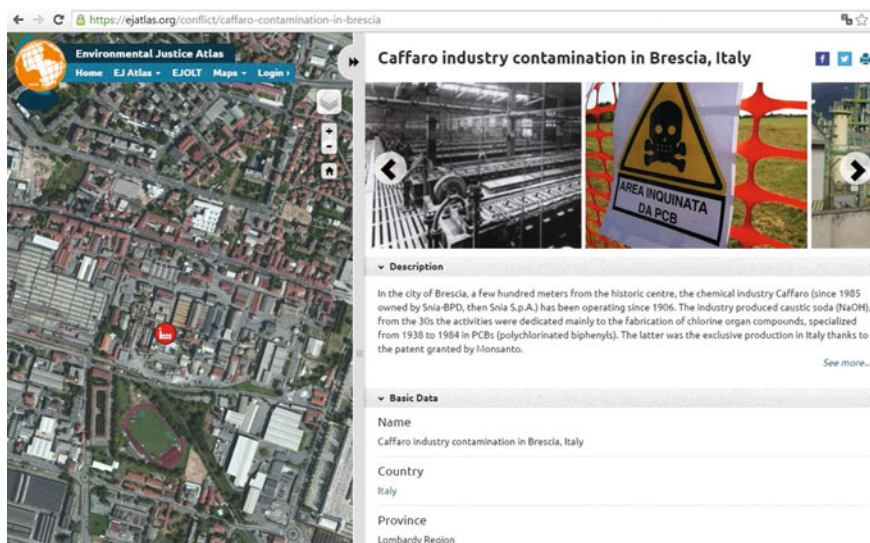


Fig. 1 Caffaro industry in Brescia, Italy. Source <https://ejatlas.org/conflict/caffaro-contamination-in-brescia> (Environmental Justice Atlas)

Superiore di Sanità and Airtum (Associazione Italiana Registri Tumori—National Register of Cancer Cases), highlights the heightened risk to inhabitants of Brescia of contracting various form of cancer (thyroid cancer, liver cancer, breast cancer, lymphoma). As in many other similar cases, however, asserting that certain illnesses are linked to the environmental contamination is anything but straightforward. Proving causation is a huge hurdle in many environmental cases.⁴¹ While there is a Municipality Order forbidding the inhabitants of contaminated areas to walk on any areas not covered in tarmac, the clean-up itself never in fact began, because Caffaro industry went bankrupt.

The points that make this case interesting for a socio-criminological exploration are the following:

- (1) The Caffaro is part of the history of the Italian chemical industry (Ruzzenenti 2001) and therefore becomes a tangible example of the present consequences of activities carried out during the historical development of industrialization in Italy.
- (2) Production and pollution started eighty years ago and ceased thirty years ago. The effects of contamination continue up to the present.

(Footnote 40 continued)

Marghera, the petrochemical sites at Gela and Priolo, and the asbestos industry at Casale Monferrato.

⁴¹See also in this volume, Chap. 3.

- (3) Today, production of PCBs is forbidden because they have been recognized as powerful carcinogens. When the Caffaro was in operation and producing them, however, their toxicity was not known.⁴²
- (4) There is greater scientific uncertainty around PCBs compared to other substances already recognized as carcinogenic (e.g. asbestos).
- (5) There is still little information about the contamination of the site.
- (6) The scenario resembles a bomb that explodes in slow motion, that is, a creeping environmental disaster (see Williams 1996, p. 16; Williams 1998).

All of this echoes similarly serious phenomena found in other countries:⁴³ oftentimes they are “crimes”—in the broad meaning proposed by green criminology (Brisman 2008, p. 731)—that develop silently and slowly, as creeping disasters, contributing to build a sort of “banality of industrial evil” (Pergolizzi 2012, p. 41).

4 The Case of Huelva, Spain: A Situation of Organized Irresponsibility?

A further scenario useful to highlight certain crucial aspects of the phenomenon of historical pollution is situated in south-west Spain. Huelva is a town seriously polluted by the presence of a massive industrial complex, established at the beginning of the 1960s and composed of a great number of chemical and energy corporations.⁴⁴ The plant was constructed close to the town, in what could be described as its “backyard”. Figure 2 shows the most critical areas affected by pollution.

Right from the early years of industrial development, life for the inhabitants of Huelva—and the very image of the town itself—started to change dramatically. While material comforts had finally reached them, over time, destructive and

⁴²In Italy, PCBs were banned in 1983.

⁴³In describing a case of PCB waste in Warren County (North Carolina), Jarrell et al. (2013, p. 437) write: “The use of PCBs was significant to the economy and to the expansion of production [...]. Over time, PCBs became less important to production because of changes in mining technology and the decreased use of transformers and capacitors. In addition, PCBs were discovered to be highly toxic to the ecosystem, and by the 1960s scientists were reporting that PCBs were a global threat [...]. There was considerable political activism surrounding environmental hazards such as PCBs and environmental organizations pushed hard for their ban [...]. Eventually, the United States Congress banned PCB production (but not their use) in 1979 [...]. The ban of PCB production is not the end of the story, however. While PCBs were no longer critical to manufacturing production and natural resource withdrawals, they still persisted in the environment where they were causing significant harm when released in the form of ecological additions”. They add: “While the production of PCBs was not defined as criminal prior to the ban, changes in production and pressure from the public redefined the disposal and use of these chemicals. When the law finally caught up to the harm the chemicals caused it created a market that led to their illegal disposal” (Jarrell et al. 2013, p. 438).

⁴⁴On this case, see also in this volume, Chap. 10.



Fig. 2 Huelva (Spain) and its backyard: (1) the industrial and chemical plant; (2) the beach of Punta del Sebo; (3) the so-called *balsas de fosfoyesos*. Source <https://ejatlas.org/conflict/huelva-industrial-chemical-complex-spain> (Environmental Justice Atlas)

irreversible consequences, both for the environment and for people's health, began to take hold and to darken the promise of prosperity brought by the factories.

This critical situation, dominated by the presence of industrial activities that, starting from the 1960s, released their effluent into the Río Tinto, was further aggravated when some of them started discharging the *fosfoyesos* (phosphogypsum)—a waste product of the phosphoric acid production process that contains concentrations of uranium series radionuclides and is stored in piles, the so-called *balsas de fosfoyesos*, extending over an area of 1200 ha, just a few hundred metres from the town (Natali 2010, 2014, 2015a, 2016).⁴⁵

⁴⁵See also Dueñas et al. (2007) and Pérez-López et al. (2007) for a scientific discussion of these aspects.

In the final analysis, both because of the seriousness of the pollution of the territory⁴⁶ and due to the lack of an answer from the institutions, it appears that the general picture of Huelva—here only sketchily drawn—would fit, if only at local level, what Beck calls “organized irresponsibility” (Beck 2009 [2007], p. 31). The town of Huelva is truly an “open-air laboratory” where no one is responsible for the results of the experiments.

Many of the inhabitants are convinced that the situation is irreversible, settled in time, and feel at the mercy of powerful actors against whom it is impossible to fight. They often want to regain their living spaces in the local environment and to protect their health. When these factors are weighed against the jobs generated by the industry, however, the question becomes: how is it possible for these people to achieve a balance, faced as they are with such a tragic and unjust dilemma?

Worrying though this scenario might be, it appears to be marked by a surprising degree of invisibility.⁴⁷ In this context, it can be noted that, in spite of the untiring work of an association that fights for the gradual recovery of the polluted areas (Mesa de la Ría), neither a common understanding of the problem nor a common course of action can be found among the inhabitants. Living in a polluted environment is, in fact, an extremely complex experience built from many interacting spheres: from the personal to the social and extending as far as the political. The result of this interaction is often a slow, gradual process of “attuning”, through which the inhabitants of these places, with the passage of time, negotiate the contaminated reality, though still in conflict about how to interpret it, its seriousness, and the responsibilities related to it.

These are some “snapshots” of the social awareness (or of the lack of it) of the inhabitants of Huelva about the complex drama they are still experiencing, as a consequence of a long history of industrialization:⁴⁸

- *Transformation of a territory and collective memory.* The beach of Punta del Sebo represents the “before” that was “there”—present in the collective memory of all the locals, either through personal experience or through the stories of those living at that time—which no longer exists and stands in stark contrast to what is now there, the reality of the factories. Side by side with these beliefs, by far the most numerous, there are others that challenge the authenticity of the version of reality conjured by this collective memory, going so far as to deny its existence, and labelling it as utopian, given that the area has always been

⁴⁶See also Benach et al. (2004) and Monge-Corella et al. (2008).

⁴⁷See Davies et al. (2014) for a discussion of the link between invisibility and crimes. See also in this volume, Chap. 3.

⁴⁸These “snapshots” are analysed in greater depth in previous works (Natali 2010, 2014, 2015a, 2016), where I explored how the inhabitants of Huelva relate to the “uncomfortable truth” of pollution, noting that they themselves do not always agree on the definition and interpretation of that reality. Starting from a viewpoint in tune with the experiences and the narratives of the inhabitants of Huelva, as actors placed within a well-defined network of symbols, social interactions, practices, and power relationships, I tried to reconstruct and understand what directs their “definition of the situation” of pollution and what might motivate their action or inaction.

polluted because of the mines dating back to Roman times.⁴⁹ Capturing these ambiguities in the discourses of the people who live in these contexts is an essential task in order to enter into the symbolic complexity running through the multiple experiences of environmental victimization.⁵⁰ These narratives are obviously influenced by discourses circulating in the public sphere through communication media, structured by those who have the power and the means—and not only economic means—to impose or neutralize a certain definition of reality (see Tellechea Rodríguez 2004; Luque 2006).⁵¹ A glaring example is represented by the action of the local press—supported by the chemical industries—that, faced by the mobilization and the fight for the social imagery realized by the Mesa de la Ría, has, on various occasions, denied that the Punta del Sebo was ever an important leisure area for the inhabitants of Huelva (Luque 2006).

- *Work versus health and environment.* The first factories were built in the early 1960s, and within a few years the inhabitants of the area were living in the aftermath of this drastic transformation of the territory. The “flow of pleasure” (Halsey 2006, p. 52) achieved with economic development has long since been overrun and thwarted by real flows of pollution and contamination, as many of the inhabitants of Huelva have realized, leaving them unable to decide whether the plant has been more beneficial or damaging for them. Like many socio-environmental conflicts, the one in Huelva, between those who are for the factories and employment and those who speak up for health and the environment, concerns much more than the single objects of contention (employment, environment, health) and raises important questions regarding who they—the inhabitants of that territory—are (subjectivity), what they can do (power), what they can know (epistemology), and who they might become (desire) (Halsey 2006, p. 4).
- *Environmental perceptions, denial, and time-scape.* The most commonly recurring beliefs concerning the perception of contamination and of its risks fell into the following pattern: “We know about the pollution, but ...” This premise is then followed by various explanations to justify inaction in the face of such awareness, including: (1) the mechanisms of denial (Cohen, 2001), which, together with habit, combine to mellow the drama of the reality endured,

⁴⁹See also Ruiz-Ballesteros et al. (2009). The authors develop an interesting study about the transformations occurring in the representations and social perceptions of the environment in certain areas of Andalusia, following the closure of the mines.

⁵⁰On this, see also Waitt (2010, pp. 235–238), and Altopiedi (2011, p. 116).

⁵¹Starting from a discourse analysis that refers to Michel Foucault’s thinking, the geographer Waitt (2010, p. 239) writes: “it is crucial to understand that while discourses may manifest themselves in ways that bring order to social life as rules, maxims, common sense, or the norm, they are always unstable and may be ruptured. Discourse analysis requires remaining alert to such instability, ambiguity, and inconsistency. Well-conducted and thoughtful discourse analysis enables insights into the resilience and rupture of multiple and sometimes conflicting discourses that give meaning to our everyday lives.”

allowing people to familiarize themselves with it and adapt to it, making it more acceptable and ever less detectable; (2) the huge expansion of the temporal horizon concerning the contamination phenomena, which, stretching beyond human and industrial times, contributes to evaporating and dispersing the perception of risk (Adam 1998, p. 10); (3) the doubt and the uncertainty of the “reality” of contamination (Auyero and Swistun 2009), which impel people to unceasingly weave the web of a vanishing reality. Moreover, during the unending process of interpreting and defining the reality of pollution, the body becomes for many the main tool for knowledge (Auyero and Swistun 2009) to prove to oneself and to others the rationality of one’s convictions about the seriousness of the situation.

- *Differential victimization and the experience of environmental injustice.* In confronting the reality and extent of the correlation between contamination and health problems, a significant narrative emerges in the social accounts of this complex situation, relating to the different forms of victimization that pollution can cause. Some people highlight the equal distribution of the damaging effects among all the inhabitants of Huelva, regardless of proximity to the industrial area; others, instead, trace precise qualitative differences, according to individual state of health, holding that those already carrying diseases were affected more seriously by the damaging effects of pollution (see Williams 1996). If this victimization is perceived as equal or differentiated, the theme of injustice seems to emerge clearly in the reflection that what is happening in Huelva would not have happened in another place—the recurring question being typical of any (collective) victim: “Why us?” “Why right here, in our backyard, and not somewhere else?”

Along these lines, the socio-environmental disaster of Huelva may, indeed, be described as a truly creeping disaster (see Williams 1996), developing in “slow motion” (Auyero and Swistun 2009, p. 4; Natali 2015a, 2016). These expressions are appropriate to highlight the extended temporal dimension and the slow pace—at least with respect to the rhythms of individual biography—with which the harmful and destructive effects have pervaded the environment and the bodies of those who inhabit it. “Green” and cultural perspectives on the processes of environmental victimization prove to be extremely important in showing that experiences of environmental suffering are not simply individual: they are actively created, starting from the position that the residents as a group occupy in the wider social and cultural macrocosm (Auyero and Swistun 2009, p. 159). In particular, focusing on the mechanisms of denial (Cohen 2001; Pulcini 2013) may contribute to understanding silence, apathy, and a range of other possible responses by those who witness daily the destruction of the environment that they inhabit (Williams 1996; Brisman 2012; Natali 2013a; White and Heckenberg 2014, pp. 186–192). In fact, in the face of the dramatic environmental transformations that shake their daily life, environmental victims sometimes learn to accept irreparably altered landscapes, and sometimes they simply “delete” them, as one does with an illness or death (Settis 2010, pp. 73–74; Natali 2015b).

5 Some Relevant Questions Useful for Approaching Historical Pollution

The peculiar phenomena of “historical pollution”, only briefly sketched out here, clearly show the traces of an uncomfortable past, impossible to eliminate, its other, dark, side intruding over and over again into the present. Just when everything seems to be finished, the “behind the scenes” of production processes reappears, unexpectedly, back on stage.

After the description of these three scenarios, it should be clear that in order to deal adequately with the toxic legacies left by the industrial past it is necessary to turn our attention to:

- (1) changes in production processes over the course of time (industrial history);
- (2) areas where the industries and their waste are located (geographical dimension);⁵² and
- (3) changes in social awareness and in environmental legislation.

A historical–geographical reconstruction is essential because over the course of a century of industrialization, production processes (and the goods being produced) have changed, and with them the residues and the waste, and therefore the various types of pollution and contamination. In other words, through time and in different places, the kinds of contamination have altered according to technological and production changes. To offer just one example, up until the 1950s all chemical production was based on the use of coal, so the characteristics of chemical industry waste depended on the characteristics of coal. These characteristics changed when petroleum took the place of coal as a raw material.

To fully address these complex issues, one would have to retrace the industrial history of the country considered from the beginning of the last century to the present, taking into account the varying cultural and social environments, the different legal contexts, and the multiple social sensitivities that went with them.⁵³ This huge task falls outside of the specific focus of this criminological exploration. A few, short observations of historical and social character seem to be appropriate, however.

Beginning in the 1800s, the processes of industrialization transformed societies and economies in radical ways. This transformation, which up to a certain point remained gradual, was perceived by those living at that time as “overturning” the world they knew up to then. It was a truly momentous change in the human–

⁵²From this viewpoint, “the possibility of capturing within a unitary vision the sense of the problems of space can only come from geography” (Muscarà 1967, p. 16). The *esprit géographique* will prove useful as a “call back to the concrete in the face of the abstract fragmentation of systematic sciences, a call back to unity in the face of the fictitious separation between man and environment, finally a call back to the complexity of inter-dependence in the face of the division of the earth’s surface into ‘islands’ of space” (Muscarà 1967, p. 19).

⁵³On this, see Ginsborg (1989); see also Amatori and Colli (1999).

environment relationship (Neri Serneri 2005, pp. 57–58). All at once, industry started to pour the waste and residue of manufacturing processes into the environment, in ever-increasing quantities, “proportionate to a production capacity undergoing continuous expansion” (Neri Serneri 2005, p. 59):

It consisted largely of solid materials, often stinking, full of toxic minerals or sulphurous residues: they were usually thrown out in heaps upon the ground in large quantities, till they became small hills, and, in time, they released the toxic substances which, mixing with rain and surface waters, soaked into the ground and poured into the waterways. Similarly harmful were the discharges dispersed into the air as fumes and vapours, often acrid, irritating and stinking, most commonly because they contained the sulphurous residues produced by the combustion of coal and the hydrochloric residues of the soda industries, the basic produce of the original chemical industry, used to make bleach and soaps for the textile industry. The picture was completed by liquid discharges which, together with wash waters, poured out into rivers and canals huge quantities of acid and alkaline substances and of toxic metals, among which were arsenic, chromium and silver, widely used in the metallurgical and chemical industries. (Neri Serneri 2005, p. 60)

The introduction of industry into the environment thus developed along particular trajectories:

- There was a dichotomy between “inside” (the factory) and “outside” (the environment from which the natural resources were taken and into which the residues were discharged).
- The legislations that dealt with such questions from the first decades of the 1800s, in France and Germany, had little effect: “Mostly they limited themselves to order that the toxicity to be tolerated was quantified according to the so-called ‘state of the technology’—that is of the available technology—accepting, in fact, the existing situation” (Neri Serneri 2005, p. 61).
- The limitations of these countermeasures were mainly due to the following factors: the interests seen as priorities were those of whoever derived an income from the industries (ideological and economic priority of industrial development); scientific and technological knowledge did not perceive the specifically ecological dimension of the problem; the idea prevailed that it was sufficient to *remove* the toxicity of the industries from the towns (moving them out into the country or dispersing the fumes using high smokestacks, for example) to neutralize them and make them harmless.
- The main concerns were about health, hygiene, and aesthetics, not environment and ecology.
- More generally, a “tunnel vision” was prevalent in regard to the paradigm of progress and to a providential image of nature, capable of absorbing the waste of industrial manufacture and infinitely mouldable by man (Neri Serneri 2005, pp. 62, 65).

It is possible to explore and reconstruct such historical stratifications in many contemporary landscapes: in fact, they appear dynamic and heterogeneous, as they imply history and conflict, the material dimension and the structure of feelings and of awareness, the concrete links between cultural forms, power, ideology, and

imagination. All these elements “are, literally, *crossings* that leave footprints” (Bonazza 2011, p. 79).⁵⁴ In this way, the historical–sociological and geographical approaches can be combined in order to provide a qualitative account of the genealogy of historical pollution in the different scenarios of the planet.

6 An Opening to the Ambiguity of the Observed Phenomena

In addressing historical pollution, one question has silently but unceasingly accompanied our exploration throughout: through what processes does the “gift” (industry) change into “poison”, assuming the ambiguous form of a “deadly gift” and thus becoming something disastrous on the social as well as the environmental level?⁵⁵

Different historical times often become part of the collective imagination and memory through the form of the oxymoron: when we reason, in the present, about different periods of our personal and collective history, we often tend to level out the most diverse temporal dimensions in order to reassemble them into a coherent picture, eliminating anything that seems to contradict the linearity of the observed historical period. This is a “normal” mechanism through which we try to order, select, remember, or forget—practicing various forms of denial, whether institutional, social, or personal (Cohen 2001).⁵⁶

Forgetting the many and distinct narratives that developed around our industrial story, however, does not help us to see clearly either the present or the future that lies in wait. On the contrary, it risks further exacerbating any binary opposites and monolithic dilemmas (environment and health versus jobs, for example) that hinder alternative and innovative visions and solutions. To overcome this frozen and one-dimensional narrative, it is important to adopt a “time–scape” perspective that will distinguish, and at the same time connect, the different times—industrial times, juridical times, times tied to social perception, and the times of nature. Such a perspective will avoid the pitfall of easy simplification.

Thus, in approaching historical pollution scenarios, it seems crucial to concentrate our focus on those tensions and frictions that arise between different temporal

⁵⁴The following observations by Bonazza (2011, p. 6), with reference to cultural geography, are also valid in a criminological perspective: “each point is determined by geographical, ideological, political, economic coordinates: this way what I see (or represent) depends on the vantage point from ‘where’ I see (or represent).”

⁵⁵The gift is also what is dangerous to accept (Mauss 2002, p. 109). In fact, it is never simply free: the donor always expects a return gift. Somewhat predictably, the demonstration of superiority and power expressed by the donor is a counterpoint to the recipients making themselves smaller and more subordinate, especially when the gift is one that cannot be refused. This dependence towards the donor—a dependence, moreover, that gains tenacity over time—permeates many cases of historical pollution.

⁵⁶On this, see also Brisman and South (2015), Kane and Brisman (2013), and Natali (2013b).

fractions (“broken” or “fragmented” time), born of the meeting between a past that enjoyed a sort of environmental naivety and the recent awareness of the serious consequences of environmental contamination—an awareness that has transformed our own reflexivity. We are faced with different times that unfold at different speeds: on the one hand, the speed of industrialization and of its momentum towards an apparently bright future, and, on the other, the speed of today, which has to deal with the residue of that initial impetus.

Regarding these aspects, Neri Serneri (2005, p. 43) speaks of the “incorporation” of nature to underline how the social and natural worlds, even though they are distinct areas, live at the same time within each other, participating in the same dynamics. Even more significant for my discourse is the following:

The more intense the ways of “incorporation” of nature into social dynamics, the more the ecosystems’ assets are modified by them. “Environmental crises” are born of conflicts between the diverse speeds of change of social systems and ecosystems, in particular of those with which the social systems are in more direct contact. (Neri Serneri 2005, p. 44)

It is indeed the intensity, speed, and spatial extension of these processes that marks the historically new character of today: for the first time, industrial technologies have allowed the separation of production processes from the rhythms of nature. The asynchrony between historical and biological times is thus pushed towards catastrophic levels (Neri Serneri 2005, p. 57). In particular, a decisive passage in the modalities of management and exploitation of natural resources was produced by changes in industrial technology—specifically with the development of the mechanical, chemical, and electro-technical industries—during the second industrial revolution (Neri Serneri 2005, p. 39). To confront these temporal frictions, we will need theoretical approaches and legal instruments that are capable of grafting new outlooks onto different profiles of responsibility for the consequences of actions placed in the past, in “history”.

To all this, another level of complexity is added by the fact that the expression “historical pollution” contains within it meanings that present a certain amount of ambiguity and uncertainty. In the end, it is possible to say that it is the very phenomenon called “industrialization” that presents a high level of complexity and ambiguity:

Everybody is prepared to admit that it is a process, that is, a dynamic phenomenon. However, as soon as one tries to find its place, and its sense, within historical times—not to mention a value judgment—the differentiations emerge in an instant and in the full light of day. (Mori 1977, p. 15)

7 What Are the “Discovered” Sensitive Points of a Hidden Geography?

At this point, in my analysis the following question is to be posed and answered: What clues originate from socio-criminological research on historical pollution in a global context? Exploratory research on this phenomenon seems to show some recurrent and common themes.

First, the harmful consequences do not materialize immediately, but only over extended periods of time.⁵⁷ When the environmental problems prove to be progressive and accretive rather than being immediately catastrophic, then our ability to perceive and read them fails and is no longer a reliable guide to understanding the phenomenon under observation. In such cases, it is important to employ a complex temporal perspective. As previously outlined, environmental contamination is the result of processes that occur over varying periods of time; it is the outcome of several polluting behaviours repeated through time that may be illegal, but may also be legal so long as they remain within the authorized limits, and yet still harmful to the environment. In the majority of these contexts, even if the polluting behaviours were to be immediately stopped, their harmful effects would still continue to be produced, because of the long periods of latency⁵⁸ of the illnesses with which they can be linked.

Second, causation can be extremely difficult to prove, both because of the temporal distance between the behaviour and the production of its harmful consequences (see also Hall 2014, p. 100) and because of the complexity of the social and ecological context representing the background scenario of historical pollution. The consequences may be *visible* today, but their *origin* goes back to a (remote or near) past that is very difficult to appreciate in its reality. Instead of an “origin”, we should speak of a *process* which has unfolded itself over time, generating complex reactions and counter-reactions within the concerned environment. Among some of the obstacles on the path to recognition of an environmental harm could be nature’s capacity to absorb the harm and reveal the most destructive and visible consequences only after an extended period of time. Moreover, even when the harm is already visible and evident, attributing a cause can be extremely complex—one has only to think of the link between exposure to chemical agents and the illnesses of workers and/or inhabitants of the contaminated areas.⁵⁹ Also, some powerful actors may exercise their influence to delay and/or mitigate the law and institutional response (Szasz 1994).

Third, phenomena of historical pollution are often described as “victimless crimes”, because the victims are not easily identifiable⁶⁰ and sometimes cannot speak for themselves (as is the case with forests and non-human animals). Those who live in contaminated habitats may offer “multiple, confused, and contradictory”

⁵⁷In different contexts, environmental harm occurs quickly, but their effects are felt immediately and for a long time afterwards. An example might be the Deepwater Horizon oil spill.

⁵⁸“Latent” describes something that has not yet clearly manifested itself. In particular, latency is the period that intervenes between, and links, a stimulus (cause/origin) and the response to the stimulus (effect).

⁵⁹On the basis of the work of Slapper and Tombs (1999), Altopiedi (2011, p. 100) underlines how, in corporate crimes (one of the categories to which certain destructive actions on the environmental level can be attributed) the space–time distance between the action and its harmful consequences can be great, entailing “significant implications in terms of awareness and of proof of victimization”. See also Cottino (2005).

⁶⁰See Bisschop and Vande Walle (2013, p. 40); see also Geis and Goff (1987, p. xviii).

points of view about it (Auyero and Swistun 2009, p. 65). This “nebulosity” also invests the effect of the contamination upon people’s health and on the natural environment. The ensuing confusion seems linked strictly to different variables: the constitutive uncertainty regarding the toxicity of some substances present in the environment; discursive spheres dominated by those social actors—businesses, the State, mass media, local and national newspapers, local and national authorities—who have the power to achieve an effective work of obfuscation and confusion concerning the issue of contamination; and finally, the relational and physical anchoring of the perception of risk on the part of the residents (Auyero and Swistun 2009; Natali 2010, 2014). Moreover, environmental victimization is anything but a neutral process from the societal point of view: some groups of people suffer more than others when other conditions of social vulnerability are added (White 2013a; see also Brisman 2014b, 2015b). White (2011, p. 110) reminds us that there are differential risks—and therefore, differential victimizations—within the same “at risk” population.⁶¹ In these circumstances, the relevant question will be not only how many people will be harmed but, above all, *who* will be, as well as who will not.⁶²

Finally, if it is true that it is extremely difficult to go from the “the mute physical fact of damage” that constitutes environmental harm to its social, political, and juridical salience—a salience understood as the measure of how much an issue truly matters to the social actors involved (Szasz 1994, pp. 30, 40)—it becomes crucial to facilitate the social and political recognition of eventual harms linked to the production process (Natali 2015b).⁶³ This result may be achieved by shedding light on that “twilight zone” where environmental harms emerge, come to life, as facts not yet in existence in the social and institutional sphere.⁶⁴

8 The Interdisciplinary Relevance of the Process of Definition

Faced with the great complexity that characterizes human–environment interactions, anthropologists, city-planners, criminologists, economists, geographers, historians, lawyers, and sociologists often employ diverging languages and models of

⁶¹On this aspect, see also Brown (1991) and Bullard (1990).

⁶²This is evident in relation to variables such as age, gender, or health. See also Williams (1996), Hall (2013), and Abignente and Scamardella (2013, pp. 66–72).

⁶³In this regard, Altopiedi (2011, p. 94) again underlines how is it necessary to carry out an adequate reevaluation of the victimological perspective in relation to corporate crime, analysing in detail “careers of victimization”.

⁶⁴Activism from an environmental justice perspective plays a decisive role, in making visible the issues tied to the phenomena described (Szasz 1994, p. 31). Szasz (1994, pp. 165–166) underlines how the grassroots activism of US social environmentalist movements has extended the demographic basis of environmentalism, teaching people who were initially only concerned about the near and immediate threat they perceived to re-frame their problem in a much wider context.

interpretation (Settis 2010, pp. 287–288). There are many scholars, however, who point out that it is really not possible to start from a single disciplinary approach in dealing with the social and political complexity of our relationship with the environment (see Lanzillo 2013, p. v). An interdisciplinary approach—one which refers to a possible communication among disciplines—will also therefore be particularly useful in exploring specific environmental scenarios of criminological relevance (Hall 2014). The expansion of the criminological imagination into the field of green criminology (White 2003) will help to incorporate into our criminological and juridical narrative a past that is still present in its most harmful effects on both the social and environmental levels, with a full awareness that a great part of the socio-environmental harms and threats caused through time is inscribed in historically situated lifestyles and models of production (Szasz 1994).

Criminological research has highlighted the ways in which social acts are labelled “deviant”, “harmful”, or “criminal” according to the historical period, the geographical location, and the social world under examination. In fact, about the same event, different and sometimes conflicting definitions, rooted in different social and juridical times, may exist (see also Natali 2015a).⁶⁵ Recognizing these temporal differences also means articulating a certain value judgment.⁶⁶ With specific regard to historical pollution, the polluting activities could have been, *at the time*, completely legal or not subject to any regulation, even if *today* they would be considered illegal (see also Brisman 2015a). The temporal perspective thus takes on a critical relevance in the interplay of multiple, intimately linked levels of reflection: time and responsibility, time and complexity, time and crime are only some of the pairs that can bring new life to a theoretical outlook that is adequately attentive to the environmental challenges of our times.⁶⁷ In this context, enhancing the multiple narrative capabilities of the criminological imagination will allow us to keep alive the connections between micro-stories and macro-stories,⁶⁸ that is, to keep together the biographical dimension of individual lives and the historical legacy of the great industrial transformations.

⁶⁵These aspects are highlighted by critical, cultural, and interactionist approaches to crime and deviance.

⁶⁶According to our shared definition, “historical pollution is characterized by the presence of a *distance in time between the polluting behaviors and the emergence of harm*” (Chap. 1, in this volume).

⁶⁷On this, see Adam (1998, 1999), and Leccardi (2009). Resta (2008, p. 182) writes: “our time: it belongs to us while we belong to it, it binds us and we bind it, it shapes us and we shape it. It defines our expectations and it constructs the space of our experience; it is made of many times that intersect within it and are not measured in the same way. They decompose and re-compose in a cubist picture”. From this angle, all systems live off a “contradictory and paradoxical plurality of temporality” (Resta 2008, p. 184).

⁶⁸See also Ferrell (2013, pp. 350–351) and <http://www.studiculturali.it/dizionario/lemmi/microstoria.html>. On the Love Canal case, Levine (1982, p. 5) highlights the point that “the sociological imagination helps to show us how individual troubles and individual behaviors reveal the larger social world”.

The basic idea behind this chapter is that the historical reconstruction of a “complex”⁶⁹ event—which we have called “historical pollution”⁷⁰—cannot happen only by way of definition (however, appropriate) but through empirical investigation and socio-historical exploration. Therefore, it seems crucial to promote a “cross-pollination between legal scholarships (and especially scholarship on criminal law) and more sociologically-derived accounts of offending and the criminal justice system in its operational context” (Hall 2014, p. 96).⁷¹ This idea is accompanied by the conviction that when one chooses a perspective it is not because it is the only correct one, the only right way of seeing the situation, but because this way of considering things lets one see things that from a different perspective remain hidden (Becker 1982; see also Natali 2015a). In such fluid scenarios, the exploration of the single cases investigated will throw light upon the main aspects of the defining proposals developed, which in their turn will interact with the empirical scenarios, thus starting an interdisciplinary process of co-construction.⁷²

More importantly, the judgment that allows us to define an event as “historical pollution” cannot take place in a vacuum. Like any other process of definition, it develops within a context that is already socially, juridically, and scientifically constructed.⁷³ A possible definition of “historical pollution” will have to be rooted in the changed environmental sensitivity typical of the time defining it; insofar as it concerns our late modern times, it will come to maturity following the new experiences of destruction and vulnerability linked to human manipulation of the environment. Within the complexity of “post-normal science” horizons (Tallacchini 2005, 2012), it seems crucial to continue taking a stance on the reality status of events as elusive and hazy as environmental events. In this sense, from an eco-global criminological perspective (White 2011, p. 14), considering the issues of environmental (and global) harm does not only mean looking at specific cases of

⁶⁹On the paradigm of complexity, see Morin (1993, 1999).

⁷⁰See above in this chapter; see also in this volume, Chap. 3.

⁷¹More importantly, “in the field of green criminology other areas of law (especially civil and administrative law) are also integral, and perhaps pivotal. This is largely because to some extent criminal law and criminal justice systems tend to be ill-suited to the specific problems and features of environmental ‘offending’ and victimisation” (Hall 2014, p. 99).

⁷²If it is true, ultimately, that the law always has to take into account the reality that it intends to regulate and within which it chooses its own relevant objects, then in order to accomplish this approach to the “world of facts” it will be necessary, first of all, to go through disciplines which are outside the law, establishing a rapport with fields of knowledge which focus on significant amounts of the world of experience with reference to the knowledge of our times. See also Pulitanò (2006, p. 800).

⁷³This is a theoretical position that calls directly upon the “social constructionism” that assumes a peculiar relevance in the environmental field (White 2008, p. 33). In any case, what we “name” socially with the expression “nature” *exceeds* our attempt to define it, and goes beyond the social worlds themselves, with *their* meanings, with *their* times. Therefore, if is true that we can only intervene on a socially constructed level, it must be done always keeping in mind what is beyond it and inevitably escapes us (Natali 2015a).

environmental destruction; it also, and above all, means building new backgrounds for reading the world in which we live (White 2010, pp. 5–6; Natali 2015a). This proposal is essential to an analysis of environmental harms built upon new theoretical perspectives that promote complex thoughts which are in tune with the new (environmental) needs of a changing world (South 1998, pp. 225–226).

These new areas of investigation are opened up to criminology by the green perspective with which our discipline is attending to the disastrous relationship between humans and the environment—including the harmful consequences of behaviours far back in time. Specifically, the importance of turning our attention to the phenomenon of historical pollution and studying it in depth arises from the acknowledgement of the scarcity—in the field of green criminology as well (White 2013b)—of adequate cognitive and learning tools to approach this dynamic reality. Furthermore, from a criminological perspective, the issue of historical pollution fits directly into the patterns set out, through time, by economic-productive processes, and cannot therefore be judged on the basis of traditional notions of crime. This particular point of view challenges the common idea that the “real” issues of crime and society pertain only to the lowest social levels, and instead gives new importance to political economy in the analysis of criminal behaviours (see Greife and Stretesky 2013; Lynch et al. 2013; Jarrell et al. 2013, p. 440; Lynch 2015).

9 Assessing the Perceived Seriousness of Environmental Crime: New Paths in Criminological Research

Studies like the present one are also crucial for exploring the polyhedral nature of the concept of the gravity of the crime, which cannot be reduced to the legal definition, which says very little about the gravity that the behaviours under consideration can in reality assume. To this is added another level of complexity, given that the expressions “environmental crime” and “environmental harm”—from a criminological perspective—include meanings that present a certain ambiguity and vagueness of definition (see also Hall 2014; Potter 2015); hence, the importance of probing the intricate tangle of the social and natural worlds called into question by the empirical dimension of the phenomenon. To this end, it seems essential to adopt a dynamic conception of society, which recognizes the mobility of social values with respect to the norms and sanctions provided: above all in the environmental field, the valuations of legislators and judges do not always necessarily agree with the social conscience of our day.

More generally, an early criminological contribution that tried to “measure” the social perception of the gravity of crimes was that of Sellin and Wolfgang (1964).⁷⁴

⁷⁴In 1964, they published their work *The Measurement of Delinquency*, which led to the creation of the National Survey of Crime Severity (NSCS). That study, as with the numerous studies that followed, highlighted a general (normative) consensus concerning the gravity of crimes,

In Italy, Sellin and Wolfgang's study was repeated in the 1980s by Delogu and Giannini (1982), with a sample of 1600 subjects (students, police, magistrates, ordinary citizens, religious, convicts, members of parliament). A subsequent study on white-collar crime by Wolfgang et al. (1985) also included some scenarios that clearly suggest environmental crimes: for example, a factory that pollutes the water sources of a town, causing the death of twenty people. Studies in the late 1980s and 1990s took into account some socio-environmental consequences of harmful behaviours ("polluting factories causing assorted amounts of harm"), but largely left environmental issues in the background.

Only recently have we witnessed the publication of the first studies focused, in particular, on the social perception of environmental crime (Martín et al. 2013) and of punishment for environmental harms (Shelley et al. 2011).⁷⁵ Continuing this trail, we might pose some of the following questions: Are environmental crimes perceived as serious crimes? How are they evaluated, also with respect to "non-environmental" crimes? Is there a (normative) consensus in relation to their gravity, or does the social perception of the gravity vary according to socio-demographic characteristics? More specifically, are social groups more exposed to environmental harms (differential victimization) also more inclined to perceive such crimes as serious, compared to other groups? For example, a person who judges as less serious certain environmental crimes might do so because of a greater sense of safety derived from the possibility of *isolating* themselves from the contaminated places—of neutralizing the danger in a manner akin to environmental sociologist Andrew Szasz's notion of "inverted quarantine" (Szasz 2007). As a possible new path in future criminological research on historical pollution, I suggest taking into account the way social perceptions modulate themselves according to the qualitative peculiarities of the socio-environmental harms; to explore the question of the normative consensus or disagreement on the gravity of crimes involving the relationship between humans and the environment; and to investigate the tendency of the public to support sanctions of a penal type rather than administrative or civil measures of control in relation to the non-desirableness of certain socially and environmentally harmful behaviours. Understanding the ways in which people perceive and evaluate environmental issues of criminological relevance is a crucial means of extending the experience, information, and data

(Footnote 74 continued)

irrespective of ethnicity, gender, age, or social class. In brief, violent crimes were considered more serious than crimes against property, and the latter, in their turn, were seen as more serious than "victimless" crimes. A wider normative consensus corresponded with a higher degree of severity. See also Forti (2000).

⁷⁵To date, any studies that have focused on the social perception of environmental crimes and harms have been primarily quantitative. The main methodological questions addressed by this research have essentially concerned three aspects: the criminal facts to submit to social evaluation, the composition of the samples of the subjects to be interviewed, and the measurement scales to be used.

needed when one has to imagine, plan, and put into practice public and governmental environmental policies fit for the challenges that await us.

In the contemporary horizon of our late modern society, it has become increasingly clear that industry (in its different forms) has generated economic growth and employment as well as, over the same period of time, highly contaminating industrial waste. Considering that there is no eschatological way out of the described dilemmas, the questions then become: What levels of risk and potential consequences are we prepared to tolerate? Which goods are we ready to sacrifice and in what measure? And again: who is responsible for the present situation? How to confront *what is left* of our industrial past? In this chapter, I have suggested that it is not possible to answer these unexpected temporal juxtapositions, which often produce contrasting oxymorons that are difficult to approach, without taking into account a century of industrial history and its ambiguous legacy. Facing the damages produced by this temporal disjunction between “cause” and “effects” is a task that can no longer be postponed. Naturally, if it is indubitable that the recognition of a specific historical pollution and contamination scenario must not impose today’s consciousness and knowledge on yesterday’s—a gap that we must still bridge—it is also certain that such recognition should not become a way to avoid responsibility, *shifting* it onto others (see also Gaarder 2013).

In conclusion, a criminological approach aimed at carrying out an in-depth analysis of the phenomenon of “historical pollution” will have to tune into and synchronize with the rising importance of these criminal scenarios, until recently largely overlooked. A work of this kind will help to collect the traces of an ignored geography and to imagine policies that take into account its complex physiognomy (see also Franzini Tibaldeo 2013). Only if we can promote a rich and interdisciplinary dialogue between different fields of knowledge (particularly between green criminology,⁷⁶ environmental history, and legal scholarship) in order to *make visible* the multiplicity of historical pollution phenomena that emerge at different times and speeds all over the planet, will we be able to see clearly that “the past is never dead” and that, ultimately, “it’s not even past” (Faulkner 1951, quoted in Colten and Skinner 1996).⁷⁷ These are points and open questions that a policy-oriented criminology, theoretically robust and at the same time empirically grounded, may suggest.⁷⁸

⁷⁶On the role of green criminology, see in particular Brisman (2014a, p. 29).

⁷⁷Colten and Skinner (1996, p. xi) write: “Although Faulkner never had to concern himself with the issue of hazardous waste, his observation aptly applies to this topic. For seldom has society had to grapple with a more enduring problem than long-lived deposits of industrial residue.”

⁷⁸In terms of criminal policy, it is necessary to abandon the misleading belief that, in order to arrest “the alliances, personal habits and institutional routines that sanction a more generalized mode of environmental decay” (Halsey 2004, p. 837), it would be enough to capture the “environmental criminals”. Along these lines, Hall (2014, p. 98) remarks: “the idea that any law (much less criminal law) can or should constitute the *sole* solution to the problems of environmental harm is surely wrong. For legal commentators, the difficulty with a field that is apparently so wide is that it sits uncomfortably with classic doctrinal legal ideals of certainty and predictability”. More concretely, “the legal debate may boil down to a basic question of what combination of civil,

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(Footnote 78 continued)

administrative, mediation-based, criminal justice or other legal—versus extra-legal—approaches to the issue of environmental harm will minimize the risk of such harm occurring or reoccurring” (Hall 2014, p. 103). See also Ayres and Braithwaite (1992), Natali (2015a), Bisschop (2010), and Forti (2003, 2007).

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