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# **Cultivating Attention to Fragility: The Sensible Encounters of Maintenance**

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## **Abstract**

In this chapter, we explore the attention to fragility at play in two urban maintenance settings: graffiti removal and water networks management. Drawing on ethnographic fieldworks, we show that maintenance activities consist of situated sensorial explorations by which maintainers carefully scrutinize the state of things and become attentive to their tendency to alter and transform. Paying attention to maintainers' attention outlines ways to elaborate a specific ecological posture. Maintenance appears indeed as a situated and political process that engages materials, bodies, instruments and texts, and is accomplished through provoking and cultivating encounters within emerging ecologies wherein what acts, and what interacts, is never completely known in advance. Exploring attention to fragility thus helps to reconsider how humans interact with things beyond 'cultural' or 'symbolic' relations. Furthermore, drawing its value from repetition and constancy, the continuous attentional work that fragility requires performs a reparation that cannot be 'settled' once and for all. Far from fixing the state of things, maintenance inextricably participates in their becoming.

## **Keywords**

ecologies • material entanglements • maintenance • sensorial knowledge

Maintenance practices have been an object of growing interest in recent years, and numerous researchers working in a variety of disciplines have made stimulating forays into a vast continent of jobs and ordinary activities which still appears largely unexplored (Jackson, 2016; *continent*, 2017; Strelbel, Bovet and Sormani, 2019; Denis and Pontille, 2020b). This body of research works has notably played an active role in acknowledging the importance of material “reproductive work” in the constitution of social life, bringing to light the omnipresence of mundane practices dedicated to making things last. Among these “maintenance and repair studies”, some have also initiated a fruitful dialogue with feminist theories of care, especially the work of Tronto (1993), whose definition of care, articulated with Fisher, famously refers to “everything that we do to maintain, continue and repair our ‘world’ so that we can live in it as well as possible” (Fisher and Tronto, 1990: 40). Extending the empirical and analytical gesture aimed at “surfacing invisible work” (Star, 1999), this conversation between maintenance and care has made two important contributions to the ways in which social sciences approach the relationship between humans and artefacts. On one hand, it has participated in decentring the traditional focus on stability and persistence towards material fragility and its various manifestation (Denis and Pontille, 2015; Domínguez Rubio, 2020; Henke and Sims, 2020). On the other hand, it has emphasized, and documented, the ethical and affective dimensions of maintenance (Houston and Jackson, 2017; Puig de la Bellacasa, 2017).

In this chapter, we propose to further these reflections by exploring a less known, though complementary, aspect of maintenance: its sensorial dimension. If maintenance is a matter of affect, it is also a matter of attention. Material fragility is indeed anything but a transparent feature. In fact, when it appears obvious to anyone, this generally means that maintenance has failed. Fragility of things is thus something that one needs to become sensible to. Making things last entails cultivating a special relationship with them, keeping careful eyes and hands on their condition, and scrutinizing, even sensing, their transformations. Even though some scholars have highlighted the sensory skills involved in specific maintenance activities (Dant, 2008, 2010; Cálén and Sánchez Criadio, 2015), little is known yet on how maintainers concretely become attentive to fragility. What is this attention made of? What does it take? How is fragility experienced? How is it dealt with?

Answering these questions implies describing maintenance activities as closely as possible, taking maintainers’ preoccupations seriously, as mundane as they may seem. This is what we propose to do throughout the next sections, drawing on two recent investigations, the first one on graffiti removal in Paris (Denis and Pontille, 2020a), the second one on water systems management in France (Florentin and Denis, 2019). By looking at contrasting maintenance situations (urban maintenance articulated to city cleanliness on the one hand, infrastructure maintenance in utilities on the other), our aim is not to produce a systematic comparison, obviously. Rather, we take the opportunity of these two ethnographic inquiries to put to the fore various ways of cultivating attention to things, and of enacting fragility during maintenance interventions. As we will show, in both cases, maintenance operations do indeed take the form of situated explorations through which maintenance workers become sensible to the state of things, deal with their tendency to deteriorate and disintegrate, and foresee their capacity to progressively mutate. Such “material politics” (Gregson, 2011) paves the way for a particular “ecological thinking” (Puig de la Bellacasa, 2016), which in the case of urban settings and infrastructures broadens two well-known approaches: the human ecology of the Chicago School (Park, 1936) and the ecology of infrastructures (Star and Ruhleder, 1996). Accompanying maintainers at work, and describing the encounters they cultivate within emerging material entanglements, enables

us to consider further how humans interact with things and their environment. Such an ecological approach accounts for the daily presence and vitality of heterogeneous biological, animal, mineral entities in mundane urban practices, and the active “capacity of relation-creation, to how different beings affect each other, to what they do to each other, the internal ‘poiesis’ of a particular configuration” (Puig de la Bellacasa, 2016: 52).

## **Sensorial explorations**

In order to understand how the maintenance workers’ explorations are performed, and to familiarize the reader with the domains in which they take place, let’s start by following the course of two interventions.

[Intervention 1]. Étienne starts the visit of a site on a mountainside where a reservoir, a valve room and a technical facility are located. For the past two years, he has been travelling the roads in the area to inspect the drinking water system works that are managed by the public utility hiring him. His visits also have an inventory function: the agency has recently incorporated many small municipalities and faces a considerable lack of knowledge about the nature of the facilities and their condition. His intervention starts outside. He goes around the elements that are directly accessible, inspecting the walls, ventilation ducts and roofs when they are visible. He takes pictures with his phone, and uses a voice recognition program that allows him to dictate his remarks: a moved tile, a crack in a wall, a spot of moisture. He enters the valve room and roughly draws the installation on his phone. He then goes down inside the reservoir, which has been emptied in preparation for cleaning by two agents who greeted us on arrival. Once downstairs, he explains: “The first thing to do is to stay put and look down, all the way across. Sometimes there are slopes or trenches where you can fall and get hurt. Then I look at the walls”. He sweeps the beam of his flashlight across the floor, then over the walls. He approaches and passes his hand in several areas (figure 1). He then concentrates on the ceiling and finishes by sweeping the raft, which he walks over, still holding the flashlight. Once back up, he adds a few comments to his list and then takes some time to talk to the workers who are former employees of the municipality and who are still operating the facilities on site. He asks them some questions about the history of the site and the interventions that have been carried out in the past. Back at his office, Étienne transfers his photos to his computer and prints out his notes and sketches. He slips everything into a folder on which the name of the site is written, and which already includes a description form that he will fill in later. The file joins the stack of “to be processed” files that Étienne will eventually record in a database that he himself configured and which gathers all the items of each visit. This data informs the other people of the agency of the condition of the structures and makes it possible to prioritize interventions throughout the year.

**Figure 1.** Inspecting a water reservoir: touching (© J. Denis)



[Intervention 2]. This morning, Tom starts his round at Place de la Nation. After a quick glance at the printed map of the neighbourhood that he has taken out of his pocket, he chooses a street, then he goes into it, phone in hand, staring at the building facades. As a full-time “detector”, he has been roaming the streets of Paris daily since 2005, in search of all forms of graffiti. Each of his detections initiates another round, that of an operator in charge of removing the unwanted inscriptions he has noticed. That’s why Tom scrutinizes the facades so meticulously: the more accurate the information he provides, the easier it will be for his colleagues to proceed. As soon as he spots graffiti, he opens the dedicated application on his phone: “I create a file for each intervention by filling in the different categories”, he explains. “The address and its geolocation, the time of intervention (including opening and closing times for stores), the type of vehicles to be used (for parking), the surface properties, the size of the graffiti calculated by square meters, the recommended intervention technique... Then I take a photograph, and I validate my entry (figure 2). Everything is directly transmitted and connected to the database”. Despite the experience accumulated over the rounds, detection is not always so straightforward. Depending on the spread of the graffiti, Tom sometimes takes some time to reflect further before indicating the total surface to be processed. He may also come closer to the facades and frequently touches the graffiti, passing his hand over several times, before filling in his file. Some stone surfaces may be covered with a thin layer of almost invisible paint and require a specific removal technique. Others, made of porous material, may have been degraded over removal interventions and require careful reflection to avoid further deterioration.

**Figure 2.** Reporting graffiti presence (© J. Denis & D. Pontille)



Apart from their specificities, these two scenes share several important features. They show inspection sessions, common to most maintenance occupations, which consist for the maintainers in making sure that “all is well” and, if not, in identifying what is called in the vocabulary of professional maintenance “disorders”. These inspections are linked to a variety of documents (laws, standards, contracts, guides, etc.) that define some of their aspects, and guide part of their accomplishment.

Regarding water networks in France, for instance, the so-called Grenelle I (Article 27) and Grenelle II (Article 161) acts, which were followed by local regulations, have designated water network maintenance as a major national issue, notably by setting objectives in terms of reducing leaks and developing a sound knowledge of the network’s components. Together with a profound reorganization of local governance that has redistributed the responsibilities among authorities at different scales, this legislative framework has contributed to transforming maintenance practices by placing them at the forefront of the management of water infrastructures. Etienne’s activity is an integral part of this political and managerial agenda, as it draws on numerous forms and texts that identify a series of elements he has to pay attention to, and the main signs of failure he must take into account.

Graffiti removal in Paris is part of a municipal policy that is closely connected to the “broken windows” thesis initially formulated in the United States by Wilson and Kelling (1982). This doctrine instantiates a very particular maintenance epistemology (Denis and Pontille, 2020a) that makes any visual sign of disorder (a broken window, litter on the street, graffiti...) a disturbing element which, albeit minimal, must be taken care of as quickly and systematically as possible, at the risk of their proliferation. This is translated in legal documents and contracts in which it is stipulated that removal must be carried out at a steady pace: every day Tom’s inspections are mandatory, and each graffiti he reports has to be erased within ten days.

These political, legal and technical documents, together with the situated inspection activities, emphasize how maintainers’ attention combines a slow and routine mode of perception during rounds and a much more pressing and tense organizational rhythm.

These temporalities of maintenance point to distinct, and potentially conflicting, ways of paying attention to fragility. They are an important aspect of the heterogeneous assemblage through which specific features of things come to matter more than others. The expert exploration that maintainers engage in to appraise the condition of things is crucial in this process. Ethnographic observation is a good way to appreciate this expertise. Indeed, the maintainers' ability to perceive certain marks or minute traces contrasts sharply with that of the observer, who is absolutely incapable of distinguishing certain imperfections on the surface of things they struggle to examine scrupulously. During their rounds, maintainers demonstrate "connoisseurship", a form of knowledge, both intimate and skilled, which tends "to an appreciation of details rather than of the [thing] as a whole" (Ginzburg, 1979: 274). They spot sometimes infinitesimal clues, "details usually considered unimportant or even trivial" (p. 280), thanks to which they manage to assess the gaps between what things are and what they should be. This ability to explore the condition of the world is practiced through professional experience, sharpened into a "skilled vision", much like the cattle farmers observed by Grasseni (2004), who learn to estimate herds and cows by breaking away from the habits of ordinary perception.

As the very idea of "rounds" suggests, inspection is also a matter of both proximity and displacement. To take care of things, maintainers get close to them, which tells us that maintenance goes beyond the loose vocabulary of observation. The sensibility to fragility is activated through the encounter between the maintainers' body and that of the things. A matter of co-presence, of "staying with" (Jackson, 2016: 183), such proximity is all the more valuable as it goes with constantly reiterated displacements. The attention cultivated during the rounds is indeed enacted in motion: Etienne walks around the site he is visiting before moving into the tank, and once inside, he never stops walking around; Tom roams streets, his gaze meticulously focused on one building facade after another. These displacements are an attention operator in their own right. Repeated regularly, they fuel the emergence of salient features among things and the identification of material variations, and eventually fragility to manifest itself. In our cases (and in numerous other situations), maintainers' attention relies thus heavily on what Gibson (1986) termed the ambulatory dimension of perception.

Importantly, as researchers who have focused more specifically on diagnostic practices have shown (Orr, 1996; Dant, 2010; Sanne, 2010), such expert exploration is largely multisensorial. The use of hands, of course, is crucial for most maintenance workers (one of the origin of the verb to maintain, *maintenir* in French, is the latin verb "manūtenēre", which means "to hold with the hand"). In our cases, touch allows to appraise substances through manipulation, specify the identified problems, and anticipate further interventions. Though hearing and smelling are more rarely involved, they sometimes allow the detection of signs to which one must be able to pay attention to (an unusual smell that indicates infiltration in a structure for instance), or to supplement the first inspection steps (for example by striking against a wall whose resonance helps to identify its composition). Apparently insignificant and characterized by the monotony of their repetition, these gestures belong to what Dant (2010) calls "sensual knowledge", which both aims to produce knowledge about what happened and to guide the flow of the intervention as the close examination goes on.

The expert exploration at play during inspection sessions is actually twofold. On one hand, it is oriented towards the series of features and signs that are more or less precisely identified in technical documents. Never fully exhaustive, of course, these lists nonetheless constitute important resources for developing a careful scrutinization. On the other hand,



maintainers cultivate a more “floating” kind of attention, which is genuinely open to discoveries.

Étienne has just finished his round. He is talking to the two cleaning agents who washed the tank after he made his inspection. One of them is leaning against the outer wall of the valve room. As he lifts his back from the surface of the wall, Stéphane stops in the middle of a sentence and looks at him, puzzled. He exclaims, “Wait, what’s that noise there? Do it again...” The agent puts himself back in place, amused, and then pulls himself off the wall again. A loud “ploc” resonates. Étienne steps forward and feels the surface of the wall in several places with his hand, reproducing the suspicious noise (figure 3). “I can’t believe it. What the hell is that thing? The paint’s completely peeling off”. He turns around and explains to the observer: “See, the colours are a bit different, here, it goes up very high. I would never have guessed. Maybe it means that there is an infiltration problem, or simply that the paint has been badly applied. It’s outside, so it’s not a big deal anyway. I still need to discuss this with my colleagues at the headquarters”. He then grabs his phone to take pictures. After several shots, he hesitates, then: “Actually, I’m going to film, it’s the only way to make them understand”. He records a video of his hand pressing on the wall and reproducing the sound.

**Figure 3.** Ploc, ploc, what’s that sound? (© J. Denis)



What is at stake in this form of attention is to let unexpected events happen. Taking into account how material objects “surprise” the people who deal with them, Yaneva (2008) shows, allows to reconsider material agency, beyond the idea of inert artefacts that human can turn into powerful and stable resources to do “politics by other means” (Winner, 1980). Surprise emerges from “what is being added, above and beyond what is done and expected” (Hennion, 2015: 50). By leaving room for surprises, maintainers let walls, paint, doors or pipes act and “speak” (Sanne, 2010). They acknowledge the capacity of things to demonstrate “a heightened presence” (Hennion, 2015: 39), and disturb the course of human action in manifesting their own signs of existence and transformation. Each maintenance inspection is therefore both a test of conformity and an opportunity for the thing to “makes itself knowable and lets itself being known” (Yaneva, 2008: 17).

## Ecologies of fragility

Once inspections are completed, maintenance interventions go through even closer relationships to things, in the course of which maintainers encounter a great variety of materials: plastic, wood, marble, concrete, plaster, bricks, water, sand, cement, stones... as well as soil, plants, various pollutants, in the case of water networks management; and inks and paints (from graffiti itself or already on surfaces) in the case of graffiti removal. Among these heterogeneous materials, some are clearly part of the thing that has to be maintained, while others compose its environment. Some others, in contrast, cannot be easily distributed into this binary categorization beforehand. Much more than identifiable objects with stable properties, maintainers deal with what Bennet (2010) and Ingold (2012) call an “ecology of materials”, in which they try to sense the behaviour of material entities.

For instance, before removing a graffiti, the workers we observed spent several minutes touching the graffitied surface so as to estimate the degree of penetration of the graffiti paint into the stone, examine the invasiveness of an acid-based ink on a shop window, or anticipate how well the covering paint will hold in contact with the surface’s components depending on the weather conditions (figure 4).

**Figure 4.** Touching the graffitied surface (© J. Denis & D. Pontille)



Materials are apprehended not so much for what they are, their physical-chemical properties at rest, but for what they do and, even more so, for what they generate together and might become, as part of what Edensor (2011) terms “entangled agencies”. Conversely to a sign of passivity or a lack of agency, material fragility is thus apprehended during these sensible encounters as the result of the active, uncertain, and even surprising relationships between materials. From this point of view, maintainers come close to the figure of the “craftsman” that Deleuze and Guattari (1987: 409) have defined as “one who is determined in such a way as to follow a flow of matter”, rather than interacting with previously stabilized entities whose characteristics are clearly circumscribed. They cultivate a careful attention towards material variations, modulations and movements, feeling these singularities in the making, engaging with the flow of matter so they can temporarily reorient its always transitory course.

The metaphor of flow “monitoring” should, however, be used with precaution. It could indeed give the impression of an asymmetrical confrontation between a human being in a situation of detached “perception” on the one hand, and an inert world that would be “apprehended” and transformed by the former on the other. In fact, each intervention involves not only the eyes and sensory organs of the maintainers, but also their flesh, muscles and bones, which are entirely part of the material ecology of the situation. These material relations between workers’ bodies and things become particularly salient when tensions arise. For example, removing graffiti involves handling tools (high-pressure water spraying guns, extension arms for paint rollers, spatulas for manually mixing sometimes very thick paints, etc.) which, as for many “physical” jobs, can lead to pain or even musculoskeletal disorders, notably in the back and hands. To these potential sources of pain is added the harmfulness of the solvents the removal workers sometimes use without wearing their protection: without a mask, their prolonged inhalation causes lung problems, and without a cap or gloves, the burn is instantaneous on the skin and hair. Water networks management comes with its own physical stresses, starting with those generated by the very access to the facilities and infrastructures: going down ladders, moving in confined spaces, walking on soils with uncertain surfaces, and so on (figure 5).

**Figure 5.** Inspecting a water reservoir: the descent (© J. Denis)



Just as the bodies of the maintainers, the tools they handle and the products they use obviously participate in the material ecology of maintenance. In the case of graffiti removal, taking into consideration the particular sources of transformation they may generate is a constant concern. For instance, a table included in the particular technical specifications of the call for tenders of the City of Paris (Annex 1, for the 2018 version) lists compatible materials and helps to select the appropriated removal technique by identifying forbidden combinations. Beyond these main principles, the practical implementation of techniques and the use of instruments require adjustments to be made in situation. From one intervention to another, some maintainers pay special attention to the reactions that the tools and products they use are likely to trigger among the heterogeneous elements at play.

Jules walks up to a door full of graffiti, and touches it: “That’s baked paint, it’s strong, it’s factory-made! Nothing has been added to it, I can go straight with bubblegum [one of the four chemical solvents at his disposal]”. He pours some product on his scraper and carefully rubs the door, alternating quickly with a cloth pass, without pressing, while specifying: “It is necessary to wipe quickly so as not to let it act too long. Even on this paint it would make a much lighter stain”. While he continues (figure 6), he insists on the quality of the rags: “The choice of rags is important. They must not scratch the paint. The recent purchase order they made doesn’t work, the new cloths damage the surfaces. It’s the same with the scrapers, by the way. I keep some old, tired ones that hardly scratch anymore, for cases like this one. Because on a dark paint, black like here, it scratches very easily. You have to be really careful”.

**Figure 6.** Chemical solvents and the dance of rags (© J. Denis & D. Pontille)



Solvents, paints, rollers, rags: maintainers’ “intuition in action” (Deleuze and Guattari, 1987: 409) unfolds from the fine-tuning of the gestures that accompany the action of tools and products, to the accuracy of the rhythm of their passage and coating, to the adjustment of their own material qualities. This is what makes Jules prefer here the use of certain worn scrapers whose softened action makes it possible to preserve the paint on the door. The choice of removal instruments and their careful handling are intended to “leave as few traces as possible of my passage”, as Jules later explained to us. This meets a professional requirement: the technical specifications of the contract prohibit the removers from producing “cleanness stains” (p. 14, for the 2018 version), under penalty of sanction by the municipality or litigation on the part of the facades’ owners. But their level of precision is also a matter of personal meticulousness. On several occasions, Jules showed us traces of intervention by colleagues that he described as less “serious”. Whatever the fine-tuning of these gestures and the level of operators’ personal commitment, it is in the course of this complex choreography that the “material politics” (Gregson, 2011) of graffiti removal is actualized, in the intertwining of facades, graffiti, workers’ bodies, the instruments they handle and the products they use.

The attention to fragility that unfolds during maintenance interventions is thus a matter of pace, gestural coordination, balanced rotation between the action of tools and products, and the reactions of the maintained thing itself within a material ecology whose boundaries are never fixed once and for all. During these reciprocal transactions where sensibilities are distributed, a lot of materials may interact with each other, those that are maintained as well as those that maintain, those that must be preserved as well as those that must be eliminated. Far from being a stable and intrinsic quality against which maintainers should struggle, material fragility is ecologically enacted through these close encounters during which the decay of some entities (here, Jules' rags) and the destruction of others (the graffiti) are used as means to preserve a thing (a surface in the city), while the degradation of yet others (the very maintainers' body) appears as the unevenly distributed price to pay for this thing to last. In this sense, these ecological encounters are always simultaneously political, affective, sensual and, ultimately ontological.

### **Thinking with maintenance**

By sticking as close as possible to the gestures and words of the maintenance workers, we seek less to produce knowledge *about* maintenance, though, than to develop a way of thinking *through* and *with* it. What does it mean concretely? If "thinking-with" is a way to making worlds happen (Puig de la Bellacasa, 2012), what kind of world emerges when thinking with maintenance? Mierle Laderman Ukeles' work offers a fantastic inspiration to answer this question. Author of the pungent *Manifesto for Maintenance Art, 1969!* Ukeles, a feminist conceptual artist, dedicated her whole career to bring maintenance in the realm of arts, questioning in return what has so far prevented modernity from taking maintenance practices into consideration. In the catalogue of the major retrospective that the Queens Museum dedicated to her work in 2016, Phillips (2016) describes Ukeles' performances as a gesture which incites spectators to pay attention to the maintainers' own attention. Placing maintenance in its very mundaneness operates thus what she calls a "transfusion of attention" (p. 99).

Ukeles' very first performance is particularly telling in this regard. Entitled *Transfer: The Maintenance of the Art Object: Mummy Maintenance: With the Maintenance Man: The Maintenance Artist, and the Museum Conservator*, it consisted in inviting two museum employees in front of the glass vitrine protecting a 5000-year-old Egyptian mummy at the Wadsworth Atheneum in Hartford, Connecticut. The performance was organized in three successive moments. It began with the cleaning of the vitrine surface by the maintenance worker, who did it as he had done every day since the piece was present in the museum. In a second step, the worker's gestures were repeated identically by Ukeles, who had carefully observed them. Ukeles then stamped the vitrine with the words "Maintenance Art Work" written in ink. Such a gesture, directly inspired by Marcel Duchamp's work, turned the pristine vitrine into evidence that this protective furniture of art display had become itself a work of art. In a third step, the conservator was then compelled to authenticate it and write a report. Above all, he became the only person responsible and authorized to carry out future cleaning operations. Through this performance, attention has thus been concretely and even legally transferred: the conservator had now to perform the careful gestures of maintenance the maintenance worker used to do.

Such a posture is highly political, since attention engages specific power relationships. Just as the responsibilities between those who "bear the burdens (and joys) of care" and those

who “escape them” are distributed according to social and institutional contexts (Tronto, 2013: 32-33), there is a big difference between those who can afford not to pay attention to the fragility of things, and those who have no choice but to be sensible to it. Ukeles’ work invites to reduce these asymmetries and redistribute both attentional abilities and responsibilities.

This is also what we try to do, in humble terms, in our own research work. By making ourselves attentive to the attention of maintainers, by conducting inquiries alongside their own inquiries, and then write about it, we strive to produce the conditions for what Citton (2016) calls a “meta-attentional engagement”, in which the reader “is found to be plugged into the attentional experience of another more or less strongly subjectivized perception of the world, through which a certain reality is revisited” (p. 139).

In the particular context of this collective volume, we believe that exploring maintainers’ attention helps to grasp two important aspects. First, it outlines ways to assume a specific ecological posture. As a situated and political process that implies materials, bodies, instruments and texts, maintenance also draws on a delicate art of provoking and cultivating encounters within emerging material ecologies wherein what acts, and what interacts, is never completely known in advance. This consideration for material ecologies implies to become aware of the constant mutations things are made of, from micro-variations to dramatic transformations, and the flow of materials that animate them. Maintainers, we argue, can help us to cultivate “deep attention to materiality and embodiment in ways that rethink relationality, in ways that suggest a desire for tangible engagements with mundane transformations” (Puig de la Bellacasa, 2017: 112). They are among the best positioned to shed light on the incessant material metamorphosis that characterize every object, which “are continually becoming in the course of their lives” (Gregson et al., 2009: 250).

But cultivating such attention to fragility is also ecological in the sense that it is a matter of relationships and connections. Understanding how maintainers engage with the objects they take care of leads to reconsider how humans interact with things, even the most insignificant ones, way beyond “cultural” or “symbolic” relations. Maintenance both acknowledges and enacts the vital interdependencies and “attachments” which hold that or who is cared for and the ones who care for them together (Hennion, 2017).

Since it invites to be simultaneously attentive to the maintainers’ careful physical explorations and to the degradation of their bodies, this ecological approach resonates with Jackson and Houston’s call to “think [the] poetics and political economy [of maintenance] together” (Jackson and Houston, 2021: 246). Thinking ecologically helps indeed to identify the intricacies of material fragilities and thus to tackle some of the ambivalences of care (Puig de la Bellacasa, 2017). In our case, this consists in exploring how urban maintenance articulates capitalist and disciplinary considerations with the aesthetic and affective dimensions of maintainers practices. Such posture has theoretical, but also methodological implications. As Domínguez Rubio (2020) has stated in his careful exploration of the worlds of art conservation, because it evolves in the “ecological nexus” (p. 8) through which things are made to last, maintenance (and care) requires imagining ways of conducting ecological inquiries. And what better guides to initiate this kind of inquiries than those who engage in it on a daily basis, those who have become experts in material mutations and entanglements by constantly taking care of things?

Finally, the second aspect maintainers attention invites to reflect on concerns the idea of reparation itself. Round after round, intervention after intervention, maintenance performs a kind of reparation that has no end, and cannot be “settled” once and for all. Lying at the

core of maintenance, such a form of repair is always in the making (Denis and Pontille, 2023). Fragility requires a continuous attention: routine and uneventful work, which gains its value from repetition and constancy and acknowledges its never-ending modest, though vital, contribution. What maintenance can teach us is that, just like the artwork Souriau (2009; Latour, 2011) wrote about, things from mundane artefacts to spectacular pieces of urban infrastructure always remain “to-be-done”.

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