
Beyond the Triviality of the Trace

1.1. Preamble

The roadmap and terminology provided in the Introduction set up the landmarks whose relevance will be developed chapter by chapter. In everyday language, the term trace seems to have become “trivial”. In this context, triviality is interpreted in the sense of: “familiar to all”, a “commonplace term whose interpretation is obvious.” This differs from the concept of triviality of which Yves Jeanneret recalls the meaning in Volume 1 of *Penser la trivialité – la vie triviale des êtres culturels* (2008).

The term “trivial” comes from the Latin *trivium* (“crossroads of three roads”). In the Medieval Ages, the *trivium* referred to the study of the three minor liberal arts (grammar, dialectic and rhetoric). Hence, “speaking of triviality does not mean one is particularly interested in the banal, hackneyed or even lowly” (Jeanneret 2008, p. 14). In a scholarly sense, triviality implies “a way to represent to oneself the circulation of ideas and objects like a sort of path taken by cultural beings through the crossroads of social life” (Jeanneret 2008, p. 14). In this context, “trivial” objects are an integral part of the crossroads of social life with its “social processes, which are both diffuse and concrete, producing social knowledge and representations, and using multiple resources, techniques, symbolisms and handed-down feats” (Jeanneret 2008, p. 15).

In this sense, everything that has a cultural status in society experiences a crossroad “trivial/*trivium*” destiny because it is through cultural appropriation that objects acquire value (Jeanneret 2008, p. 15). This narrow concept of “triviality” induces productive practices well beyond one-way transmissions of cultural artefacts. Indeed, the process of triviality requires taking into account a particular

type of procedure, an understanding of its transforming capacities, and a definition about how cultures are created (Jeanneret 2008, p. 61). What is at stake with such “practical trivialities”, i.e. the circulation of tangible, concrete objects handled by social practices and interpretations, is the need for a specific form of planned and careful elaboration (Jeanneret 2008, p. 49).

According to Jeanneret (2008, p. 70) the elaboration of “trivial” cultural objects works on two levels. The first level is that of the *practical efficiency* of the inventions of objects, gestures and operations. This level of *practical efficiency* creates bodies of work and assures their physical presence, controls their accessibility and adapts their form to the conditions of usage. The second level of elaborating “trivial” cultural objects is the *symbolic and social operationality* where symbolic entities are constructed beyond its own operations “starting with the text itself, which is a complex and constantly redefined being” (Jeanneret 2008, p. 70).

At this stage of the book, the term “triviality” indicates the extent to which use of the word “trace” – together with its associated meanings – has become banal. However, alluding to the Latin etymology of *trivium* (*tri-via*), the place where three paths meet (Jeanneret 2008; Rey 2009), three dimensions meet at the crossroads of the concept of triviality/*trivium*:

- a pre-existing Real;
- an opening of a living being’s senses which constructs a reality to make the purported Real perceptible, and;
- a human being, who experiences the Real via their body, considers the discovery of the Real as a “*conséquence-trace*”, that is to say, as a consequence of a previous event.

This threefold approach of triviality indicates traces understood from the perspective that only differentiates “primary traces”¹ from “secondary traces”^{2,3}, whose meanings here are considered commonplace.

1 *Primary traces*: those that have not been subject to an individual’s deliberate intervention, for example, representing the consequences of vital exchanges between an individual and a surrounding environment, or a body’s motion (traces of passage).

2 *Secondary traces*: those corresponding to *artifacts* having suffered a transformation and bearing its traces; the object thus produced can be analyzed as a trace of a trace (for example, photography, or, more generally, that which is related to technology). Please note that in anthropology, “Artifact” refers to a product which has undergone a transformation, albeit a slight one, by human intervention, and which is thus different from another transformation caused by a natural phenomenon (source: <https://www.larousse.fr/dictionnaires/francais/artefact/5512?q=artefact#5487>).

3 For more information see Galinon-Mélénec (2011a, pp. 364–369).

1.2. Contact traces

First, it is worth noting that the contact between an individual's body and the *milieu* around them leaves traces: the simple fact of living prompts exchanges for maintaining and renewing the body's cells, which consequently modify the *milieu*.

This observation makes it possible to introduce the concept of *corps-trace*, with its accompanying *cross-flow exchange* – *be it directly visible or not* – between this body and the *milieu*:

– *from the inside towards the outside*, for example: the emanation of air from the body, causing a visible form of vapor when in contact with cold air, sweat, having an impact on environmental odors, etc.;

– *from the outside towards the inside*, for example: air pollution causing breathing difficulties⁴, leaving *conséquences-traces* on the body in the form of biochemicals which are invisible to the naked eye.

1.2.1. “Corps-trace” and Locard’s principle

Locard’s principle is another way of illustrating the notion of *corps-trace*. Used in criminal investigations, it states that “it is impossible for a criminal to act, especially considering the intensity of a crime, without leaving traces of this presence [...]”⁵. A well-known example is that of *papillary traces*⁶.

Papillary traces are primary traces in that they represent the natural consequences of touch. This makes fingerprint patterns all the more interesting for criminal investigations, since they are lasting (as such, they represent “imprints”) and are specific to every human being, which makes identification particularly reliable, as they are:

- immutable from intrauterine life until the body disintegrates;
- unalterable (they are reproduced identically in the event that the epidermis is superficially destroyed).

4 Examples: allergic rhinitis; hay fever. Illustration available: <https://pixabay.com/fr/photos/allergie-médicales-allergique-1738191>.

5 See <https://www.prefecturedepolice.interieur.gouv.fr/Nous-connaître/Services-et-missions/Missions-de-police/La-direction-regionale-de-la-police-judiciaire/La-police-technique-et-scientifique>.

6 See <https://pixabay.com/fr/vectors/détective-indices> and at the address: <https://pixabay.com/fr/vectors/empreintes-digitales-détective-146242>.

Both an imprint and a mark^{7,8}, their collection becomes a priority in any criminal investigation. To this end, they can be:

- photographed when they are directly visible, due to material deposit (for example, blood) or material removal (for example, a finger trace in the dust);
- molded, thanks to friction ridge skin impressions on fingers (as the mold obtained can be transposed);
- detected, thanks to a specific technique (for example, fingerprint powder when papillary traces are latent).

Such forensic techniques and readings make it possible to certify that a specific person has been at a given place, in contact with a certain object. Nevertheless, this proof of their presence prior to the investigation is not sufficient in itself to conclude that such traces designate a criminal. As will be shown later⁹, the interpretation of a trace pertains to processes whose complexity should not be underestimated.

1.2.2. Technology-assisted papillary trace reading

Since the papillary imprint is specific to an individual, it is used extensively in property recognition systems by connected objects that integrate their owner's fingerprint reader.

This interpretation appears to be reliable; for ergonomic reasons, however, only a portion of the finger is placed on the object. As the finger is not placed fully onto the reader, the resulting trace is inaccurate: only a few characteristics can be captured and then compared to the initial trace left by the owner's finger. This may entail a

7 In the sense that such an imprint represents a distinctive feature of the identity of every individual (except in the case of identical twins).

8 See the definitions given in the Introduction of this book.

9 There is a vast number of scientific positions concerning the notion of trace. However, not all of them acknowledge the mediations existing between the veiled complexity of the real and the human interpreting it. This produces a kind of assurance that takes for granted the understanding of what is referred to as "trace". One of the objectives of *The Odyssey of Trace 1* aims to deconstruct this by showing that other ways (voices) exist. The present work acknowledges such diversity without claiming to state the "right" definition of trace. Here is an example presented as a variation on this theme, provided by linguist Armelle Jacquet-Andrieu (2012) who, contrary to the content of the rest of the book, draws a distinction between the notions of comprehension and interpretation; leading her to state: "The trace here is *understood* and recognized as a fingerprint, but is not interpreted as such (it is therefore not attributed to its author as criminal evidence)".

risk of error in the reader and the possibility of the phone being accessed by a person who could be malicious (stealing personal data) or not (repairing the mobile phone).

1.2.3. *Animals, readers of the primary traces of humans*

Not all the traces associated with a human's *corps-trace* arouse the interest of every animal species spontaneously. It all depends on the advantage they can obtain from finding such traces of interest. The following are examples of being open to reception:

- a carnivorous animal looking for prey will be interested in the *conséquences-traces*¹⁰ left by a living body. But the herbivorous animal will be indifferent to those same *conséquences-traces*;

- the pheromones emitted by an individual of a species only attract other individuals of the same species, either for breeding purposes or to find food.

On this point, let us quote two computer scientists (Bertelle and Olivier, 2017, p. 118)¹¹ who have studied the traces left by ant bodies in order to understand the emergence of a collective intelligence, pondering the notion of *conséquence-trace*:

Let us dwell for a moment on food foraging, *a type of behavior which is present* in some ant species. When one ant accidentally discovers a source of food, after the occurrence, this ant returns to the nest all the while depositing pheromones on the ground, which constitute a chemical signal. This chemical trail is attractive and will therefore lead other ants from the colony to the source of food. As the first ant did, these will deposit pheromones and actually reinforce the trail by returning to the nest. What we have is an amplification and positive feedback mechanism. Thus, the more involved the ants become in the foraging trail, the stronger and more attractive it will become [...]. (Bertelle and Olivier, *ibid.*)

Sensory qualities differ from one species to another, which means that the channels more or less enable the transmission of information from outside to inside

10 The French term *conséquence-trace* has been given precedence in this translation since the author does not wish to connote the “consequences of traces”, but wishes to qualify the notion of trace as of being a consequence in itself. *Conséquence-trace* has therefore been chosen throughout in order to permanently recall the specificity of Béatrice Galinon-Mélénec’s approach to the notion of trace.

11 This approach will be discussed again in Chapter 2, which addresses the topic of the digital trace ecosystem.

the body. Some traces, inaccessible to human senses, can still be perceived by other species. A well-known example is that of the dog's sense of smell at the service of human trace prospecting. In this way, a mountain dweller buried under an avalanche, unable to send an emergency message, can be detected by a rescue dog whose sense of smell offers a higher perceptibility – present traces in the real present – to that of humans.

The ability of dogs to pick up traces of smells has led to the exploitation of canine *odorology*, for example, to identify suspects¹² or, more recently, for the early detection of breast cancer¹³.

The assistance of dogs¹⁴ or dolphins¹⁵ in trace-tracking is well-known. That of worms or any scavenging insect, interested in the decomposition of a body abandoned in nature, is less well-known. This characteristic, which does not require any particular training, can be useful for the police as well: thanks to them, it is possible not only to locate a corpse but also to determine when the dead body was deposited¹⁶.

1.3. Humans, readers of traces bearing witness to the passage of animals

As soon as their body makes it possible, an individual explores their environment by moving around. This motion leaves specific traces – traces of passage.

Let us consider human footsteps on a beach: “the trace reader” can see whether the person was barefoot or not, or the shape and size of the foot, for instance. This trace is often called an *imprint* since it seems *permanently inscribed in the material* (the notion of durability is relative to the context). On closer inspection, its depth will indicate the weight of the individual who has trodden here, and the speed of their movement.

12 Each individual has a unique olfactory identity.

13 Based on body sweat samples from women who had just been diagnosed but who had not yet started the treatment.

14 Illustration of police dog training, available: <https://pixabay.com/en/photos/police-dog-training-dog-1761871>.

15 See *Le différentiel des capacités sensorielles Humain/Animal* in Galinon-Mélénez (2008, pp. 40–44).

16 Insofar as bluebottles can locate a corpse within 10 to 20 minutes after it has been deposited and lay their eggs on it. The age of flies therefore makes it possible to determine the approximate moment when the body was abandoned, with 10–20 minute precision.

Hunter-trackers proceed likewise with *conséquences-traces* of the passage of animals. They detect whether those catching their attention match the species being hunted. Paleontologists follow the same procedure. They analyze imprints¹⁷, *conséquences-traces* of the passage of dinosaurs and mammals, for example, those recently discovered in the NASA parking lot¹⁸.

1.4. Technology at the service of deferred interpretation

From a technical¹⁹ point of view, if the observer is interested in keeping a trace of this trace of passage, they will take a picture of it, which constitutes “*a trace of a trace*” (Barthes). This *artifact* is particularly useful in criminal matters: Schulliar and Hébrard (2015, pp. 4–8) have pointed out that the first investigators to arrive at a crime scene must “draw up a situational analysis by means of photographs and video images, including numbering and metric scale, if needed”.

While this procedure is applicable to *conspicuous traces* (those visible to the naked eye), it does not apply to *latent traces* (those requiring a preliminary stage to make them visible before being photographed).

For latent traces, a photographic procedure such as this is conditional on the following: the formulation of a hypothesis indicating their existence at a particular place, and the subsequent selection of the best technique (optical, physical, chemical) to render them visible. It should be borne in mind, however, that in all cases any technical intervention is likely to modify – or even destroy – some of the traces.

Many other interferences are possible: in *La chambre claire*, Roland Barthes (1980, pp. 785–891)²⁰ brought to light the combination of “*conséquences-traces*”²¹ with the object “captured” by the image:

– the *photographic act* (the *camera angle*, the suggested off-camera, the title given to the picture, etc.);

– the photographer’s *interpretive angle* (emotional, rational, etc.).

17 The term “imprint” here takes on its full meaning when specifying the *conséquences-traces* of passage having produced durable inscriptions in matter, since these footprints are the consequences of a passage dating from 110 million years ago.

18 At the time of writing, Martin Lockley and his colleagues are carrying out this type of research at the University of Colorado in Denver (Lockley *et al.* 2018).

19 Traces are said to be secondary when there is mediation between the primary trace and the result produced.

20 1st edition in French, 1980.

21 These are our terms and not those employed by Roland Barthes.

1.4.1. Conséquences-traces of the action by the “operator” and the “spectator”

This produces a mixture of *conséquences-traces* that cannot be ignored by the person “reading” the photo. It is advisable to learn how to spot them and to articulate (denounce) them. Even though the strength of the photo as a piece of evidence seems to prevail, it is necessary to decipher the role of the *operator* (the one taking the picture) and the *spectator* (the one looking at the picture), to interpret the object photographed, which is now only a *spectrum* (a specter, something, someone, no longer visible in its initial consistency)²².

1.4.2. Punctum

Whoever looks at the picture will wonder at which “point” (*punctum*) the photo becomes meaningful to them; in other words, which traces from their past (emotional, cognitive, affective, etc.) this picture will activate. What is the detail (*punctum*) that triggers such meaning? They will wonder whether the same traces (emotional, cognitive, affective, etc.) would be activated in another individual.

The experience of becoming aware of a differentiated *punctum*²³ can easily be achieved thanks to the widespread illustration in which some people see two faces facing one another, while others see a dark colored vase²⁴. It is a primary indexicality arising from the magma of available points on the image²⁵.

This difference in the focus of attention modifies the gaze’s entry point (the *punctum*) into the picture. And this *punctum* can be considered as a *conséquence-trace* of the brain’s functioning which, according to the paradigm of the *corps-traces/Homme-trace*, carries the traces of the life story of an individual²⁶.

22 In this sense, it can also be said that all traces are defined as the consequence of a process whose *spectrum* (specter, ghost) they represent.

23 For a preliminary approach to the notion of point of view, please refer to Figure I.2.

24 See <https://pixabay.com/fr/photos/tête-cerveau-pensées-corps-human-1965675>.

25 “Primary indexicality occurs when, amid the thick stuff of the sensations that bombard us, we suddenly select something that we set against that general background [...]”. For the French edition, please refer to Umberto Eco, *Kant et l’ornithorynque*, p. 20, Grasset, Paris, 1997. For the English edition, the reader may refer to Umberto Eco, *Kant and the Platypus*, Penguin Vintage, London, 2000.

26 See Figure I.5.

Figure 1.1 takes up the notion of *punctum* and places it in a wider context. It will be discussed in further detail in the chapters that follow and later integrated into the summary of the digital trace ecosystem (see Figures 2.1 and 3.3).

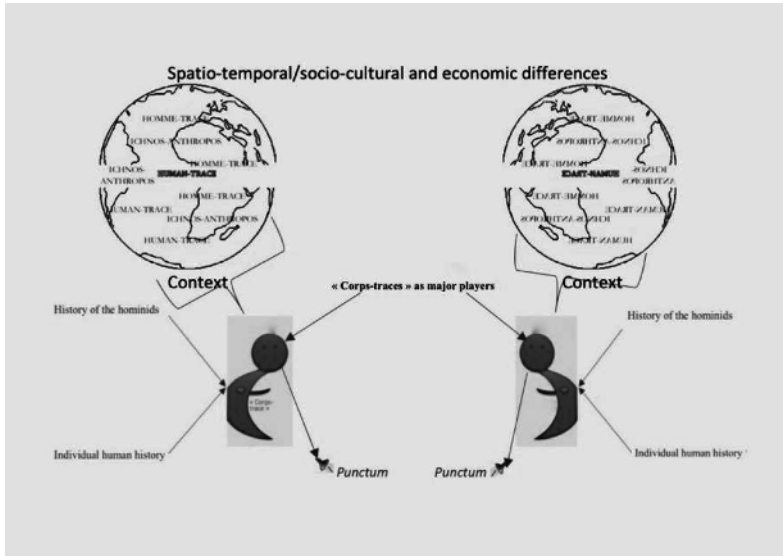


Figure 1.1. *Role of the corps-trace and of context in any punctum. For a color version of this figure, see www.iste.co.uk/galinonmelenec/traceodysey.zip*

COMMENT ON FIGURE 1.1.— *This figure contextualizes Figure I.4, presented in the Introduction. It aims to represent the fact that the gaze cast by individuals on the real is the conséquence-trace of their anthropological condition as a Homme-trace and, in particular, of the consequences of their life stories and their spatio-temporal, socio-economic-cultural contexts.*

1.4.3. Emotional interference in interpretation

Figure I.4²⁷ displays the fact that taking into account the role of the brain does not imply eliminating all the other dimensions of the *corps-trace*, including sensory, affective and emotional parameters.

Let us illustrate the emotional factor involved when reading a photo: if a person has amorous feelings toward someone in a photo, the “spectator” may suffer from

²⁷ See section I.13.

everything that the photograph does not reproduce: the singularity of the beloved person, who is at once unique and complex. The spectator will be captured by the *distance* between today's visible photograph and a former reality: in the loving being, it will activate the wounds suffered by loss; for those immersed in the study (the *studium*'s point of view), it will activate the analysis of clothing, of body posture, etc.

1.4.4. Part of the invisible

According to Roland Barthes, photography is evidence of “ça-a-été”²⁸. This notion of “ça-a-été” is confusing; in the first instance, photography is evidence of a process which does not necessarily match what one is directly able to see. In fact, how does one prove that the photographer has not manipulated what can be seen?

1.4.5. Authentication of photographic representation

The force of conviction in a photograph as a representation of the past must therefore pass through an authentication filter (Galinon-Mélénez 2011b), since the image does not suffice in itself to ratify the evidence of the real existence of what it is supposed to represent²⁹.

This point is well known to forensics: let us imagine that during a criminal investigation, a photograph found at the crime scene must be filed since it represents the meeting between the deceased and the alleged murderer; caution is called for so as to detect any possible manipulation³⁰: a combination of images giving the illusion of a meeting which in fact never took place, cropping out people who were there when the photo was taken, changing the scale of an element in the picture, an erasure of any persons who were present at the time of the shooting, etc.

1.4.6. Automatic recording and its evidentiary value

Does the automatic and permanent recording of images by a surveillance camera provide more evidentiary value? Insofar as it provides more information (for

28 A photograph can give the impression that the image of “what has been” (“ça a été”) is an indisputable reality. Barthes (1980) deconstructed the photographic process to explain why one needs to be cautious about what we see in a photograph.

29 The same idea will be discussed again in the chapters devoted to digital traces.

30 The same concept will be developed around the idea of “digital traces”.

example, as to the approach), it undoubtedly does. Yet there are some factors which interfere there as well: the positioning of the cameras excluding a part of the real (the “off-screen”), and the insufficient quality of the images (due to poor maintenance of the cameras, lighting, poor resolution of the image, etc.).

Identifying a person walking down the street, therefore, will prove to be very complex, owing to their movement, the viewing angle of their face, and the distance, etc.

1.5. *Techne* as a trace of the evolution of “*Homme-Trace*”

The tool, like *techne*, results from a manufacturing process and bears its *conséquences-traces*.

Manufactured for a particular purpose, it makes people forget that the characteristics it contains are the *conséquences-traces* of the action of the person who produced it. This point is particularly interesting to bear in mind when, for example :

- identifying the eras in the history of hominids: the tool bears *conséquences-traces* not only of the available materials and the needs it was expected to meet, but also of a know-how integrating culture and making it possible to locate individuals and their *milieu* and *environment* (according to our definitions of these terms);
- considering the processes producing digital traces. This will be addressed later on.

1.6. Trace visibility and invisibility

1.6.1. *Questioning our current perception of reality*

Positing the question about the trace comes down to questioning our current perception of reality as a *conséquence-trace* inscribed in a physical mode of existence. This inscription can be:

- *visible*: as already pointed out, in the case of the trace of footsteps on the ground; the eye is drawn to the discontinuity in materiality (the body weight produced a depression in the matter). Here, the materiality of the trace is subtractive (“*trace soustractive*”). Material discontinuity can also stem from additive materials, present when there would be no logical reason for them to be at a certain place. The matter of a sprig of lavender stands out particularly in a Breton landscape (Leleu-

Merviel 2017, pp. 63–81)³¹, as does an apple from an orchard on the banks of the Seine, found under a corpse in the Paris region (Lezeau 2008);

– *invisible*: in an inhabited house, it is normal for contact traces relating to the life of its inhabitants to be present everywhere. If, in a room such as the kitchen, these traces are absent, there is an abnormal discontinuity of the *primary traces*; this absence leads to a hypothesis. It is the *conséquence-trace* of an action carried out in view of erasing the material traces that are the natural consequence of what occurred in the place before the observer arrived there. This probabilistic scenario transforms the absence of contact *additive traces* – customary in a kitchen – into the trace of an erasure. The logical process implemented to formulate this hypothesis leads to qualifying the *conséquence-trace* of the removal of contact traces in an *indice*.

1.6.2. Example in the criminal domain

To illustrate this point, the Maëlys case will be explored, as related by the journalist Jean-Marc Ducos in the newspaper *Le Parisien* dating from September 28th, 2017 (Ducos 2017)³².

The disturbing car wash scene:

No sooner had he been heard by the police as a mere witness on Sunday August 27th than Nordahl Lelandais, aged 34, the suspect imprisoned in the inquiry into the disappearance of Maëlys, aged 9, at Pont-de-Beauvoisin (Isère), rushed to the car wash to clean his Audi A3.

31 As Leleu-Merviel has pointed out: “The perfume floating in the wake of an elegant woman [...] is well inscribed on the molecular medium that transports it and lingers after its owner”. Leleu-Merviel S., “La traque du corps, des saisies aux traces” in B. Galinon-Mélénec, *L’Homme-trace. Des traces du corps au corps-trace*, CNRS, Paris, 2017.

32 Summary of the facts: “A marriage was celebrated in France at Saint-Jean-d’Avelanne church, in the village of Saint-Martin-de-Vaulserre. The reception took place at a multi-purpose recreation hall next to a forest massif in the neighboring village of Pont-de-Beauvoisin. The family of Maëlys (aged 9) was surprised that they couldn’t see her any longer around 3 a.m. Her grandmother was the last person to exchange words with her at around 2:45 a.m. After a while, the police were alerted at 3.57 a.m. precisely, and not only searched the vehicles, but also questioned the participants who were still present. Maëlys could not be found. Investigators examined and interviewed the guest list. They widened the scope of their investigations to the participants of two celebrations organized concomitantly in the vicinity. By going through 250 open hearings performed in the first few days, the police became particularly interested in one name: Nordahl Lelandais, who declared that he had never been absent during the evening, whereas several witnesses claimed the contrary.” See <http://www.leparisien.fr/faits-divers/un-mois-apres-la-disparition-de-maelys-reste-une-enigme-26-09-2017-7286640.php>.

A car at the center of the investigations, the entire cleaning process was filmed by two CCTV cameras. Two devices intersecting and filming in sequences. The thorough cleaning operation lasted a little over 2.17 hours, according to the time code recovered by the investigators.

The video footage showed the former dog handler carrying out “a truly obsessional washing” of his vehicle, which was always known to be very clean. During these sequences, he was filmed removing the floor mats from the car one by one and vacuum-cleaning them. He could also be seen removing the front passenger seat. The cleaning was carried out following the rules, using a detergent. The suspect spent an especially long time working on the right side of the vehicle. He used vacuum cleaners for longer than 41 minutes, whose timer he methodically recharged with coin tokens.

A product which impaired the sense of smell of the dogs involved:

He cleaned the passenger compartment and the trunk, using a strong degreasing and deoxidizing rim product. So powerful was the solution that it impaired the sense of smell of the police tracking dogs. Another detail caught the eye of the investigators: Nordahl Lelandais’ patience for methodically polishing the interior and exterior handles of the passenger side door. He insisted on these handles and the door controls. The driver of the Audi left the premises at around 7:45 p.m. It was not until the following day that the investigators came to know about this meticulous clean-up.

Thus, the *traces d’effacement (erasure-traces)*³³, or more generally, any *subtractive trace*, enters the arsenal of forensic methods with the same status as the search for any material traces unintentionally left behind, resulting from contact between individuals and the *milieu*/environment, or from individual to individual, or any *additive trace* corresponding to the presence of a materiality, a *conséquence-trace* of a voluntary action, aimed at misleading a criminal investigation.

1.7. Digital application

In contemporary society, the human environment is expanding into the digital sphere. Here too, every contact leaves traces. These traces, generally known as “digital traces”, can be subject to similar analysis as those previously mentioned.

33 “It is always possible for the traces to be erased, but no one can guarantee their final destruction” (Derrida 2008).

These can also be voluntary or involuntary, easily accessible to humans or not, subject to: (a) erasure when they are not desired, or, on the contrary, (b) voluntary deposits, when they are constituted for purposely “producing traces” (Jeanneret 2013, p. 4)³⁴ with the objective of social visibility.

It is all the more important to identify such distinctions:

a) due to the social pressure for an individual to exist on the Internet;

b) even if an individual refuses to follow this movement, they are still bound to the presence of digital traces concerning them.

In the first case, the digital presence³⁵ may be the trace of a desire for *self-marketing*, whereas in the second case, it may be the *conséquence-trace* of *digital data aggregation*, from organizations with specific commercial vested interests (e.g. Amazon), or otherwise (town halls, schools, hospitals, etc.).

The *absence of digital traces*, therefore, does not *necessarily* involve the non-use of digital tools – by or about an individual. It can be the *conséquences-traces* of erasure, or a burying of the traces by an expert.

In digital matters, as in any other fields, it is advisable to be wary of the apparent evidence of the trace. It should be noted that:

– recognition of a portion of the real, captured by the attention of an individual, is the result of complex processes: *a minima*, it should not be forgotten that what

34 “Producing traces” very generally designates “the human invention of mediations – material, social and symbolic, in order to support a conception of society based on the traceability of collective behavior and forms” (Jeanneret 2013, translated from the French).

35 A contextualization of the research that has been conducted and published on the question of the relationship between digitalization and recruitment is offered by I. Cousserand-Blin and N. Pinède (2018, p. 10): “For a candidate, to introduce oneself is one thing, to implement a digital strategy in the public domain is something different [...]. Online presence becomes an implicit or an explicit skill, depending on the context, and therefore an employability indicator, even a selection criterion. It seems essential in a candidate’s search and identification process (*sourcing*). Any digital lack will be prejudicial, as an implicit order involving a *de facto* risk of digital weakness and inequality. The multiplicity of techniques at work makes it possible to rely on new more or less structured and formatted content which stresses the inconstancy of digital presence, between signs and traces: [...] digital traces do not say anything more than you want them to say and [...] in no way do they reflect the depth and complexity of every individual”, see (Galinon-Mélénez and Monseigne 2011, p. 121, translated from the French).

appears to them as a *conséquence-trace* proceeds from the *relationship between an individual and the real*;

– there is a temporal gap between the past from which we were absent and where we assume lies the cause of what we perceive today. This gap feeds our ignorance as to what really took place in the past. *The hypotheses formulated depend on individuals*, the direction of their attention towards such and such a sign (whether digital or not). A sign that, furthermore, we shall see emanates from a process of trace interactions and, as such, we call a *signe-trace*³⁶.

1.8. Interaction between *milieu*³⁷, traces from the body and “*corps-trace*”³⁸

The *conséquences-traces* of the presence of a *corps-trace* in a *milieu* relates both to an “inside–outside” relationship and to an “outside–inside” relationship. As previously stated, such *conséquences-traces* are not necessarily perceptible.

1.8.1. *Conséquences-traces without an apparent physicality*

Conséquences-traces are more difficult to spot than others, since they have no apparent physicality. For instance, those inscribed in the *emotional memory* corresponding to *diffuse body traces*, in the sense that they are activated by multiple entry points to the body (sight, smell, touch, etc.). The example of a veteran’s reaction to a war photo is interesting in this respect: the simple view of a photograph can rekindle the sensation of a body seized with unspeakable fear in those having taken part in appalling battles. Upon return to their families, they carry traces in their memory as a consequence of the massacres they witnessed or in which they were involved. Such traces constitute imprints insofar as they are indelible. They haunt them day and night, even when life seems to have resumed its normal course. In social interaction, the war veterans strive to control the externalization of pain. Their emotional mastery enables them to show the world what is expected of them. They adopt the socio-cultural codes of the *milieu* in which they have evolved (see Galinon-Mélénez 2008).

36 As in the case of “*conséquence-trace*”, the choice of the French term *signe-trace* purposely points to the author’s paradigm studied in the present work.

37 The *milieu* in question here is the result of the permanent interactions between the natural environment and the social environment, related to human action. The ensuing result is dynamic in that it is constantly evolving.

38 *Corps-trace* is a term specifically related to the author which designates the permanently dynamic processes between body/*milieu*.

1.8.2. *Uncontrollable emersive signes-traces*

However, war veterans' *corps-traces* may be betrayed by uncontrollable *signes-traces*. These are known as "*emersive-traces*" (Tison and Guillemain 2013)³⁹, whose force of emergence is drawn from the depths of the burial of what has been experienced.

As far as our topic is concerned, [it is] the trace of the original repressed person who, in this case, actually "is at work on the subject's body". Somatic manifestations [...] without any injury or inflammation detectable by even the most sophisticated computerized tomography, in the perspective of cross-sectional medical imaging⁴⁰ scanning an organ, requires acknowledgement not only of the psychological influence on the body, but also the enactment of the body and its impulses. (Assoun 2017, p. 173)

1.8.3. *Return of the repressed*

Thus, when, for example, war veterans repress memories in order to deactivate the *signes-traces* of their experiences with warfare in their daily lives, they are at the mercy of another form of trace: the return of the repressed, defined as follows in the *Dictionnaire international de la psychanalyse*:

The return of the repressed is the process by which the repressed elements, preserved in the unconscious, tend to reappear in one's consciousness or behavior through more or less unrecognizable derivative formations: the offspring of the unconscious [Freud's formula]; lapses, Freudian slips and symptoms. (Rabain, 2011, translated from the French)⁴¹

The *conséquences-traces* of the repressed play an important role in the emergence of pathologies leading to the assimilation of an individual *homme-trace*⁴² to his disease:

39 *Emersive* (gesture): (gesture produced) without the possibility of being controlled. As regards other psycho-corporeal manifestations, see (Tison and Guillemain 2013) and (Andrieu *et. al.* 2015).

40 See Assoun (2015).

41 Quoted by Karsz Saül in *Pratiques Sociales*, Édito, August, 2011.

42 *acestr*.

The hysteric suffers mainly from reminiscences [...]. Memories, certainly, but which have the characteristic of acting without the knowledge of the subject who, involuntarily, repeats events inscribing in him the actively present anxiety of previous traumatic scenes. The neurotic symptom in general – to which hysteria is referred – is the formation of a compromise between antagonistic impulses. This is the problem of repression (*Verdrängung*): it is the return effect of the repressed, here synonymous with “unconscious trace”. If the subject does not know anything about it, the traumatic trace, in its ambivalence – desire and censorship – insists on remembering it. It can therefore be defined as an “insistent reminder”.

In the pervert, on the other hand, it is a question of a hallucinated hole with its origin in the mother’s body, organizing a split (*Ichspaltung*) between what is seen and what is supposed not to be known, therefore a “denial”. Thus the repressed is expressed by characteristic symptoms, identified as behavior⁴³ markers. (Assoun 2017, pp. 173–174)

1.8.4. Trauma traces

In most humans, emotional wounds are invisible. But the traces of *trauma*⁴⁴ are there, more or less buried, always ready to resurface in sensations (“a smell that sticks to the skin”, “recurrent nausea when images of dead children piled up in a truck return to the memory”) and types of behavior (long silences, exacerbated reactions, etc.) as *signes-traces* of the indescribable pain forever⁴⁵ inscribed in them.

1.9. Conclusion: beyond the natural character of the trace

By denouncing the natural character of the trace, the purpose of this chapter was not to impose a world view claiming to be exclusive over others. Any researcher knowing that they are also an *Homme-trace* should not imagine anything similar.

43 The sliding of the trace towards the mark here results from categorizing traces which are significantly present in social representation. Of course, it is always possible to wonder: what slip does this (consequence)-trace stand for?

44 Translated by Aline Weill.

45 From the second part of the 20th Century, the influence of the Freudian and Lacanian theories has increased; speech has become free, enabling an individual to understand how the *conséquences-traces* of one’s past are activated in certain circumstances and turned into behavioral *signes-traces*. Being aware of how *conséquences-traces* accumulate and produce the visible layer is important in any field. This will be discussed in Chapter 2, in relation to digital traces.

Nevertheless, it is always possible to fuel the reader's reflection by presenting a point of view which is likely to shed light on a person's experience.

This first chapter aimed at lifting the veil on the apparent natural character of the trace. As in the following chapters, its contents should be framed against the axiom table (see the box of the ten axioms, above) and the diagram (see Figure I.1) presented in the introductory chapter, where it is made clear that:

– insofar as it has been posited that any *Res* is the result of something else and that not all of reality is accessible to humans, it thus becomes possible to claim that regardless of an individual's ability to perceive them⁴⁶, there exist *conséquences-traces*, which are referred to as “ontological”. This hypothesis steers the abductive reasoning of scientists seeking to go back, step by step, from *signe-trace* to *signe-trace*, in an attempt to find the first non-“caused” reality;

– when a human recognizes the “*ontological trace*” as a trace, it becomes an “*anthropocentric trace*”;

– among the “*anthropocentric traces*”, one draws particular attention: *the indice*. This is different from other “anthropocentric traces” in that the cognitive interpreter associates the causal⁴⁷ inference⁴⁸ inherent in the notion of trace as part of a probabilistic scenario.

These nuances should be incorporated into the reading of the other chapters.

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46 This is the thing in itself, the Kantian *noumenon*. Concerning this topic, please refer to Leleu-Merviel (2018, p. 59).

47 See Jeanneret, Y. (2013). Faire trace : un dispositif de représentation du social. In *Intellectica : de la trace à la connaissance à l'ère du Web*, 1(59) 41–63.

48 Definition from the *Dictionnaire français Larousse*: inference is an “operation by which one passes from an assertion considered true to another assertion by means of a system of rules also considering this second statement as true”.

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