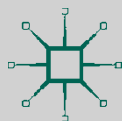
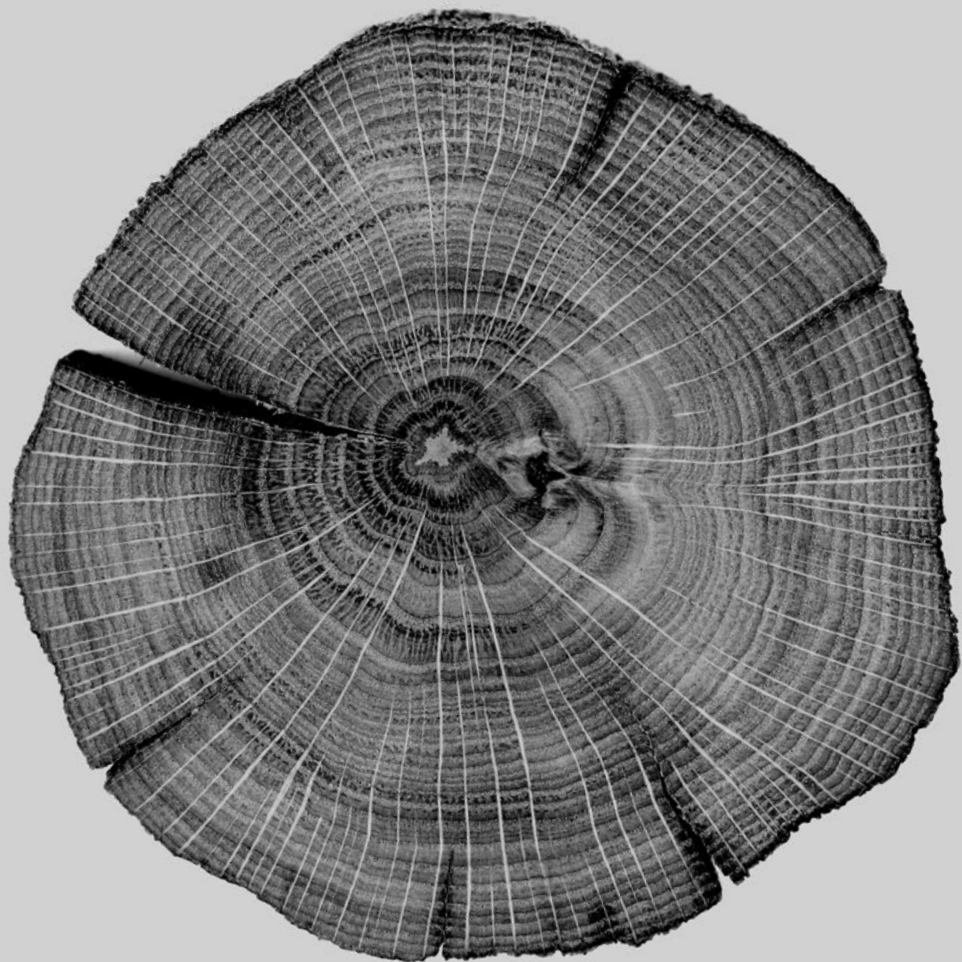


# TOWARDS A PHILOSOPHY OF DIGITAL MEDIA

*Edited by  
Alberto Romele and Enrico Terrone*



# Towards a Philosophy of Digital Media

Alberto Romele • Enrico Terrone  
Editors

# Towards a Philosophy of Digital Media

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# Introduction

Alberto Romele and Enrico Terrone

Media can be characterized as artifacts whose primary function consists in widening our experiential and cognitive horizons. Without media, our experience and cognition would be limited to what we can directly perceive in our environment and then possibly recall from our memory. At most, this could be enriched by what we can imagine; that is, conjectures about the future or thoughts about possible state of affairs. However, without media, our experiential and cognitive horizon would remain rather narrow. It is only when media come into the picture that we start acquiring *mediated* information about parts of the world that are beyond the reach of our *direct* perception, of our memory and of our imagination.

Media are so intrinsic to our nature that it seems legitimate to wonder if it really makes sense to speak of an immediate relation of human beings

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with the world. Language is the medium that mostly characterizes us, which allows abstraction and communication. It is not surprising, then, that philosophers have devoted, especially during the twentieth century, much of their energies in order to understand what it is and how it works. Still, there are many other media. Pictures, sculptures and theatrical performances are, for instance, mediators of a specific kind. Philosophers have often circumscribed such media to the domain of the aesthetics and the philosophy of art. In fact, while the philosophy of language is clearly distinct from the philosophy of literature, one finds it hard to draw a similar distinction between the medium and its artistic use for what concerns pictures, sculptures or theatrical performances. As a consequence, most of philosophical reflections on such media have been conducted within the field of aesthetics (see for instance, Davies 2003; Lopes 2009; Gaut 2010). Yet, this approach reveals its limits once technology is considered.

The point is that technology can create new media by supporting other forms of media and enhancing their capacity to widen our horizon, regardless of their aesthetically relevant applications. For instance, printing supports language and depiction, thereby creating a new medium (the press) through which texts and pictures are widely spread by means of technical reproduction. Likewise, technologies such as the telegraph and the telephone empower language and linguistic communication.

On the one hand, there is a long tradition in philosophy of technology and in media studies that considers technologies as extensions of human bodies and minds. Ernst Kapp, who actually coined the term “philosophy of technology” in 1877, described tools and weapons as “organ projections.” Notably, Marshall McLuhan presented media as “an extension of man.” On the other hand, postphenomenologists (Ihde 1990; Verbeek 2011), as well as scholars like Friedrich Kittler (1999) and Bruno Latour (1994), insist on the fact that technologies are mediators that alter our relationship with the world in a fundamental and irreversible way. From this perspective, it is more than just the empowerment of human bodies and minds. Rather, it is the ability to produce brand-new relations with the world, thereby reshaping our own nature. The same tradition has also accounted for limit-cases in which technologies are not mediating anymore between humans and the world, but become autonomous entities. This is the case of Don Ihde’s “alterity relations” or Latour’s “delegation.” This attitude has been taken to extremes by authors who, like Gilbert Simondon,

have tried to follow the evolution of technological lineages independently of their interactions with or their relevance for human beings.

For sure, one can still understand all this from an aesthetic perspective. And yet, it is clear that this is just one aspect of what should be an encompassing philosophical perspective on media. Philosophers have been particularly attracted by the social and political consequences of the strong asymmetry characterizing mass media; namely, media whereby a few agents can supply information to a large majority of people. In their research at the frontier between aesthetics and political philosophy, Adorno and Horkheimer (2007) have criticized the culture industry of cinema precisely for allowing a small minority of subjects to supply imaginative variations to the masses, depriving viewers of the possibility of actively exercising their own imagination. Nonetheless, it seems fair to say that during the twentieth century philosophers have paid little attention to what these media actually are, and how they reconfigure our relationship to the world, over and above their political or aesthetic impact.

At the turn of the century, the rise of digital media significantly changed the situation. Existing media such as press, phonography, photography and cinema started digitalizing. That is to say that texts, sounds and pictures are no longer recorded as analog traces but rather as sequences of bits. Digital media became the most important interfaces between the world and us, “metamedia” capable of simulating the specificity of older media (Manovich 2013). Thanks to them, the production and reproduction of texts, sound recordings, pictures and videos have become easier and more widespread. Moreover, digital media have introduced new ways of widening our horizons. E-mails, the Web and social media are not just extensions and modifications of other media. By embedding preexisting media such as writing, depiction and sound recording, they have profoundly transformed them. And they have also altered our relationship to the world, to the others and to ourselves. Finally, digital media are henceforth considered more than just mediators: many of them are also seen and treated as valuable interlocutors.

Three main elements characterize digital media. These same elements also characterize the recent history of their interpretation and understanding by scholars from different backgrounds. We will label these three elements: (1) “interaction”; (2) “recording”; and (3) “autonomy.”

1. First, digital media somehow subvert the traditional notion of mass media. In digital media, the masses do not passively receive information; rather, they contribute to its creation and diffusion. Individuals are no longer mere consumers, but also producers of contents—“prosumers.” Furthermore, people are not isolated from their peers anymore; they can communicate with each other, they can interact. In this sense, digital media may appear as means of liberation of the masses from the few. Let us consider, for instance, the several publications on the gift economy online (Romele and Severo 2016) or those on the hacker ethics against the spirit of capitalism (Himanen 2001). Eventually, the virtual environments allow people to free themselves also from the physical and social constrictions in real life. This was at least the opinion of several digital pioneers who during the late 1980s and early 1990s imagined a utopian virtual world where sex, race, class, gender, and sexual orientation ceased to be relevant. Nowadays, things look significantly different. However, it remains true that digital media make room for much more action and interaction than traditional mass media.
2. Second, digital media involve a complete overlapping between communication, on the one hand, and recording, registration and keeping track, on the other. For sure, information production and communication remain important aspects of digital media (Floridi 2014). And yet, for a few years now, recording, registration and keeping track have taken the upper hand. For this reason, most of the chapters of *Towards a Philosophy of Digital Media* are devoted to this topic.

In fact, the birth and development of the social Web at the beginning of the new millennium have greatly increased the amount of information concerning users that is recorded and accessible online. As a consequence, people and researchers have started to consider social media as technologies of mutual control and surveillance. Moreover, most of the Internet platforms have started a massive collection and analysis of prosumers' data (big data) in order to analyze and even anticipate their preferences. In 2013, the British newspaper the *Guardian* famously revealed that the US National Security Agency (NSA) obtained access to the systems of Google, Facebook, Apple and other US technology and Internet companies. In this general atmo-



sphere of recentralization of the Web and new “vertical” surveillance, social media and, more generally, digital media have started to be treated like forms of post-Foucauldian Panopticons (Andrejevic and Gates 2014). However, for us, the question goes deeper, as far as it does not concern just ethics and politics. Digital recording, registration and keeping track have ontological, epistemological and anthropological implications.

From an ontological point of view, they have determined a significant overlapping between communication and registration. As a consequence, the question arises whether it is legitimate or not, and eventually to what extent and under which conditions, to understand the web as a series of traces, inscriptions or documents. Can we interpret the web as an archive? Would it be possible to define digital media as “recording(-based) media”?

From an epistemological point of view, digital traceability became a “total social fact.” As a consequence, several scholars have seen in digital traces, their exploitations and treatments, not a danger, but rather an opportunity for filling the gap between natural and social sciences. On the one hand, it has been observed that actions and interactions online are in perfect continuity with those offline. Thus, we should rather talk of the “end of the virtual” (Rogers 2013), which means that digitally recorded actions and interactions are reliable representations of the social reality itself. On the other hand, it has been said that in contrast to the classic data produced by sociologists, digital traces are not produced in artificial situations. Rather, “they are generated as a by-product of already occurring interactions and processes across social life” (Marres 2017, 17). At present, one can notice “conflicts of methods” in this emerging field: digital sociological research, computational social science, digital methods, digital sociology, and cultural analytics are just a few of the labels that researchers use to name their approaches, and to differentiate them from those of other researchers.

From an anthropological point of view, digital recording, registration and keeping track have deeply changed the previous relation between remembering and forgetting. Certainly, one must not exaggerate by saying that everything digitally recorded and eventually

posted online is there forever. For sure, many of you have experienced an irremediably broken hard-drive or losing an important digital document. Similarly, many of you have had to deal with linkrot, the process by which hyperlinks become permanently unavailable. Still, it is fair to say that while forgetting was the rule before the arrival of digital media, and remembering the results of an explicit decision, today it is the other way around—and this is why we are tragically lazy in backing up our digital data. This is so true that someone has proposed to implement an expiration date for the digital files that must be voluntarily decided by the one who produces or uploads them (Mayer-Schönberger 2011).

3. The third element characterizing digital media is that a crucial role is assigned to software, which is not only able to transmit and store information, but also to manipulate it. Digital media do not limit themselves to help our minds or to interconnect us with other human subjects. In digital media, recording often involves the autonomous manipulation, combination and recombination of what is recorded. So there arises the legitimate question of whether digital media, or at least an emerging part of them, such as those implementing machine learning algorithms, should not be considered as members of the social world, nonhuman actants. Here is where the philosophical reflection on digital media crosses the philosophy of artificial intelligence (see Haugeland 1985; Dreyfus 1991). What is relevant here is, however, a “lesser” AI, which, despite some claims for the “master algorithm” (Domingos 2015), is less interested in creating a universal machine than in accomplishing specific tasks like blocking e-mail spam or face recognition.

Of course, *Towards a Philosophy of Digital Media* is not the first philosophical book questioning digital media. Nor does this book claim to have the last word on this topic. The title should be understood simply as the intention of drawing an outline of *a* philosophy of digital media, valid at least for the time being, and capable of anticipating some of the inevitable forthcoming changes. Its intention is to interpret digital media from a specific perspective, that of digital recording, registration and keeping track, and to test this paradigm in different contexts. Furthermore,

we are aware of the fact that philosophy cannot survive alone in this field, but must be in continuous dialog with other disciplines, such as communication studies, digital humanities, media studies and game studies. That is why this book includes chapters by philosophers and scholars from these various disciplines.

The chapters in the first part of the volume, which is dubbed “Digital Media as Recording Devices,” highlight in various ways the recording-based nature of digital media. Bruno Bachimont shows how technological innovations, due to Internet protocols, have introduced a primacy of recording over communication. Maurizio Ferraris treats the recording-based nature of digital media as the ending point of a historical process whose previous stages were the era of capitalism as described by Marx, and the era of communication and spectacle, illustrated by Debord. Janne Nielsen ponders how the Web can be recorded. She argues that, in spite of being recording-based, the Web is in fact affected by a significant evanescence. Jacek Smolicki discusses the “capture culture” in relation to Bernard Stiegler’s concepts of mnemotechniques and mnemotechnologies. He points towards an alternative way of thinking concerning our practices of archiving.

The chapters in the central part of the volume, “Consequences of Digital Recording,” consider how digital recording bears upon specific issues. Jos De Mul shows that digital recording enables new ways of thinking by examining the case of Wikipedia, focusing on its collective character, and wondering if it can be seen as a “hive mind.” Jacopo Domenicucci considers the impact of digital recording on trust regarding relationships between subjects. Fanny Georges and Virginie Julliard focus on a peculiar consequence of digital recording; namely, the duration of digital data after the death of a user. Marta Severo explores the new possibilities offered by digital participatory platforms for creating living inventories of oral cultures while avoiding fossilization of traditional written documents.

The chapters in the final part of the volume, which is dubbed “Digital Media Beyond Recording,” individualize new perspectives that are relevant for understanding digital media. Stacey O’Neil Irwin explores the “taken-for-granted” aspects of digital media and interrogates their non-neutrality through a postphenomenological perspective. Galit Wellner

uses postphenomenology to analyze “algorithmic writing,” the idea that texts written by machine-driven algorithms appear as though an actual person wrote them. As a consequence, one has to consider the autonomy and the agency of these algorithms; that is, the fact that digital media seems to be dynamic, productive and creative. Stefano Gualeni distinguishes between two forms of “doing” with and through digital media: “doing as making,” and “doing as acting.” The former is, for instance, the “doing” of the designer of a video game while the latter is the “doing” of the player. Alberto Romele sketches the outlines of a “third paradigm,” following those of communication and registration, to understand digital media. He speaks of electronic imagination or “emagination,” which does not contradict digital recording, but is rather an emerging property of it.

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# Part I

## Digital Media as Recording Devices



# Between Formats and Data: When Communication Becomes Recording

Bruno Bachimont

## 1 Introduction

Communication and recording did not wait for the digital age to bump into each other. It all began when we started to want to communicate remotely, and to preserve the contents of a communication through time. Communication through time refers to the problematic of memory: the possibility of retaining contents from time evanescence is at stake. Communication through space refers to the problematic of journeys, transport, and movement. These two issues mobilize the same instrument for their solution: the document, that is to say, the registration of an event that is required to be remembered or communicated.

Recording is the tool and the technology that make communication possible even when the latter does no longer occurs in the co-presence of the interlocutors. For a long time, we lived according to this obvious rule: when the communication happens in co-presence, recording is not useful;

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as soon as one wishes to cross space and/or time, recording becomes the necessary mediation.

This evidence has been valid for a long time. When radio and television were invented, we learned to communicate remotely, yet within the same temporal framework shared by the sender and the receiver. Recording was still useless; the goal was rather to carry the message from one person to another, from one place to another. We learned to do it through the propagation of a signal that did not need to be fixed on a medium in order to be repeatable and transmissible. It was necessary, instead, that the transmission and reception contexts were simultaneous so that they could be shared, on the one hand, and allow interaction on the other (only in principle, however, as shown by the first age of radio and television, when listeners and viewers could not interact with the sender). In other words, as long as the transmission was in real time, registration was useless, because we remained in a situation of telecommunication.

An inversion occurred when technologies based on the Internet Protocol (IP) introduced packet switching. Indeed, the paradigm was reversed: whereas, until then, we used to communicate without recording, and the issue of recording was eventually raised after the communication, the IP imposed recording in the form of packets first, in order to communicate these same packets in a second stage. Instead of a wave propagation routing a signal without having to record it, we now have a registration that we want to carry from one place to another.

At the beginning of the Internet age, this paradigm shift was not noticeable because the Internet was mostly dedicated to data communication, rather than to that of contents like voice, television, radio and cinema, for which reception must be assured in real time, in quasi-simultaneity with the emission. But we know what happened next: the network improvements allowed real-time transmission, and hence this type of transmission was implemented for telecommunications, in particular for radio and television. This has been the technological paradox of the 1990s: a protocol such as the IP is not adapted for telecommunications at all, but this same protocol's technical progress has assisted a general transition of telecommunications into the digital.

If we now register to communicate, this implies that communication is conditioned by the technical choices of the recording: in addition to



the format of the signal encoding, it is also necessary to take into account the formats of recording and those of the manipulation involved in these technologies.

The recording techniques and technologies have two sorts of effects on communication. First, they impact the contents' formatting. Second, they contribute to the progressive reduction of documents to data. Indeed, the digital is above all a binary coding which ensures the manipulability of contents. But the binary code in itself does not refer to any particular semantics; it is purely arbitrary. Everything depends on the way it is decoded. The role of the formats consists precisely in disciplining the expressiveness of the binary code in order to give it a meaning. For example, it ensures that a particular binary file encodes a video and not a text or a sound. The format is therefore the key aspect enabling contents to be digital. Moreover, since we are dealing with registrations, that is to say with objects that can be manipulated, copied, fragmented, etc., one will try to bring back the contents to a type of basic records, facilitating as much as possible their management, transmission, processing, and transformation. This is done by considering contents as data; that is, as elementary records.

Contents are analyzed and broken down into data, and these data express themselves through formats that prescribe feasible operations and the possible structuration of information. Communication is therefore subordinated to what formats allow, and transformed by the data manipulation.

In this chapter, my aim is to consider this twofold movement (from bits to formats, and from contents to data) to account for some of the theoretical and technical consequences it implies. But before I expand on this movement, I would like to clarify some terminology and concepts, in order to define what I mean by content, document, communication, and recording.

## 2 Communication and Recording

Although communication and recording have been interacting strongly for a long time, these two notions refer to different concerns. Communication, at least in its ideal-typical form, evokes a situation

where people share the same place and the same moment for exchanging signals that they interpret in order to understand each other. Speech is the privileged medium, but not the only one. The sharing of a meaning can also happen through non-verbal registers characterizing a specific situation and interaction. Communication is therefore in principle an inter-comprehension in co-presence.

Recording is a palliative. It is required in order to mitigate the absence of what is not anymore, of what has changed, and the absence of what is not there. Recording has a double function. First, as far as it is produced by an event of which it is the trace, it represents a proof and a testimony of it. It has an indexical relation with this event. As such, it can inform about this event and it can constitute a memory of it, since it is permanent. Its own existence attests to that of the past event; moreover, its content can inform us about the nature of that event, especially when this trace is produced voluntarily, as with administrative records, the archives, which collect information about the event to be remembered. Second, being permanent, records allow multiple consultations, distributed in space and time: their existence does not coincide with the evanescence of the event; they are static and out of time, allowing multiple events of consultation. As long as it is material, a record can also be reproduced and copied for multiplying the possible consultations. Allowing the free repetition of reading and the reproduction of the recorded object, registrations exceed the singularity of the event and its spatiotemporal uniqueness.

## 2.1 Content, Inscription, Document

If a registration is the trace of an event (that is, a proof of its happening), then it also has a content. It conveys a message informing about the nature of the event. As such, it must be interpreted. It is therefore necessary to consider the nature of recording as a content and to consider its conditions of interpretability.

Human beings, beings of flesh and blood, communicate with each other. According to Aristotle, the human becomes human only insofar as it becomes political, and interacts and exchanges within the city. It is on this condition that the humanity expresses and accomplishes itself: the

city as political space is the space in which the human animal becomes rational (that is to say, human), at least if one follows the classic definition *zoon logon echon* (Manent 2010).

Communication is based on the contents' exchange. A content can be defined as a *semiotic form of expression* associated with a *material medium of manifestation*; through its physical materiality, the medium makes a content perceptible, while the semiotic form makes it interpretable. As a meeting point between a materiality and a semiotic code, a content is addressed to our senses to speak to our spirit (Bachimont 2017).

Contents are therefore material and have the physical properties of their medium: intangible contents do not exist. But a content cannot be reduced to its material medium: what makes it a content and not just a thing, an object, is that it carries a signification that is addressed to an interpreter. Surprisingly, what renders an object a content is not so much the fact that it is produced to be a content, but that it is understood as such, as the bearer of a meaning or a message that is addressed to someone. Thus, even objects that have not been shaped by anyone can have a semiotic status, become a content, and be interpreted as we interpret a text, a book. Let us consider Galileo's famous affirmation according to which there is a book of nature written in the language of mathematics. A semiotic form sending *us* a message, *expressing* a meaning to be interpreted is recognized in a material object. Such a form is beyond the mere perception of the physical objects, and it makes out of it a content.

A content refers us to the ensemble of our cultural objects, such as books, newspapers, television programs, and so forth. But it also refers us to the voice: its material medium of manifestation is sound, the vibrating air, and the semiotic form is that of speech, the spoken language in which the heard sound becomes for the listener an interpreted and understood message.

A content is always material. But it is not necessarily permanent. For this reason, the physical medium, which lends its materiality to the content in order for it to be perceptible, must be static; that is to say, stable in space (and time). The content must be fixed on a static medium in order to be permanent. Such a content is called inscription.

Inscriptions, which became permanent thanks to their medium, considerably modify the conditions of communication. Unlike what happens

to evanescent contents such as speech, it is no longer necessary for the speaker and the listener to be together in spatial contiguity and temporal simultaneity. In the basic configuration of communication, the listener must indeed be in the same place (and at the same time) as the speaker in order to perceive and interpret what is said. If the listener no longer shares this contiguity and simultaneity with the speaker, she has no access to the content. The inscription allows speakers and listeners to be separated in space and time: communication is asynchronous and dislocated. But since the speakers and listeners no longer share the same context, it is necessary to enrich the semiotic form with additional information so that the listener (or the reader) has sufficient indications to interpret the content she remotely receives while the speaker is absent. This is why the inscription must meet specific writing and reading genres that I am going to call here “editorial genres.” These genres allow the contents’ meaning to be shared between speaker and listener, sender and receiver, author and reader. For example, in medical communication, a medical record is a codified way of recording medical information about a person. Such genre calls for a particular type of reading that the medical staff are supposed to master. Similarly, scientific articles and dissertation theses are types of writing referring to particular types of reading.

Once immersed into an editorial genre that codifies both writing and reading, the inscription becomes a document. All documents are inscriptions, but the reverse is not true: inscriptions are not necessarily documents. For example, inscriptions that nobody consults, such as video surveillance records, are not documents. They will only become so during their eventual exploitation.

## 2.2 Recording as Communication

As suggested above, communication does not systematically imply registration. As long as one is in a situation of co-presence, be it spatial or temporal, the mediation of recording is useless. Even in the absence of spatial contiguity, temporal simultaneity makes communication possible that still does not need recording, but only transmission. Telecommunication technologies have been developed to allow remote

(*télé-*, at a distance) communication: the content produced by a speaker or a sender in general is transmitted, propagated to its receivers. This content is by definition a temporal content; that is to say, a content that exists only as temporal duration. The one who sends or receives a temporal content must synchronize her stream of consciousness with the stream of the perceived object. It is therefore communication in temporal simultaneity, and the interlocutors share the same time in order to express what they have to say: a conversation, the listening of a song sung, a word, the vision of a spectacle. Communication is not an exchange of contents that circulate as material objects from hand to hand, but rather consists in sharing the same temporal progression.

Since all contents, as has been said, are material, from a physical point of view a temporal content is a wave, the propagation of a signal within time. As a consequence, it is a matter of transmitting this wave through a suitable channel to reinstitute its temporal progression to the intended receivers. This is what was invented with radio and televisual transmission. Concerning the latter, it is noteworthy that how to transmit and receive a video signal was invented long before the ability to record it, with the first Ampex video recorders becoming available in the 1960s, some 20 years after the invention of television.

This historical reminder is important because it makes it possible for us to understand that communication is not a problem of registration but of transmission. The first thing at stake is to transmit, enabling interlocutors to share the same temporal situation. Recording is often impossible (as in the absence of videos for many years), sometimes unnecessary. Moreover, it is only after having transmitted that one raises the question of recording the content or not.

The computerization of communication networks, especially through the IPs and communication via packages, has upset this balance. The Internet was designed to transfer data, that is to say, records. It was not temporal simultaneity that was at stake, but the transfer of information, when the spatial contiguity between the transmitter and receiver was no longer provided. The registered object is then fragmented into packets which are routed along different channels, the communicated object being reconstituted only after the retrieval of these packets. The time of transfer is not a concern in this context; in particular, it is not relevant