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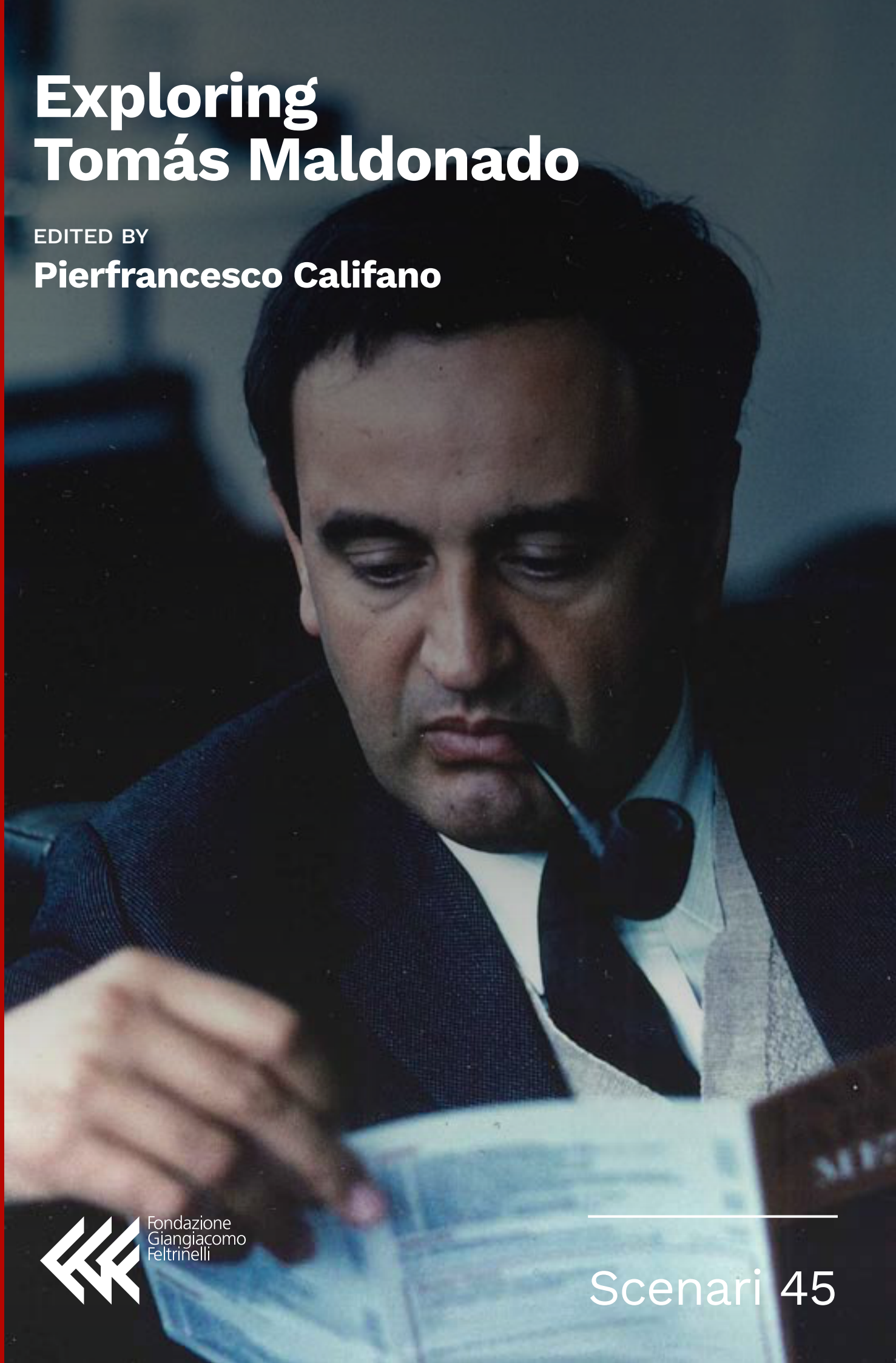
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Exploring Tomás Maldonado

EDITED BY

Pierfrancesco Califano



Fondazione Giangiacomo Feltrinelli

Scenari 45

Scenari

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Exploring Tomás Maldonado

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Body and Interaction in Dematerialisation

Eva Vanessa Bruno, Giovanna Tagliasco

Permanence and Individuality in a Dematerialised World

In a world that seems to dematerialise and to digitalise gradually and steadily, it is crucial, and plausibly necessary, to understand the new elements that characterise the individuality and permanence of matter concerning the concept of virtuality as the next challenge for designers. The topic results highly relevant due to the constant progress of virtual reality technologies and cloud services, increasingly sophisticated and affordable for everyone. This progress generates new problems for the discussion for which no significant solutions exist yet.

The purpose of the following essay explores how the concept of dematerialisation takes on different meanings regarding different project areas. Moreover, it highlights how materiality is silently preserved in the concept of virtuality.

Materiality results, despite the constant evolution of simulation technologies, software of data visualisation or cloud computing (such as cloud storage, SaaS - Software as a Service), on the contrary still

present in control hardware (eye-gazers, controllers), visualisation (monitors) and data storage (servers, processors) respectively.

Through a careful selection of case studies, the essay aims to explore the concept of dematerialisation in the world of digitalisation, of virtual and services. Moreover, projects about the return to materiality, done by designers and artists, are analysed. The intention is not to demonise technological advancement but, on the contrary, to show the sincere and natural nostalgia and attraction to physicality, presence and interaction.

Thus, the argument presented here is the constant need of materiality, in antithesis with the persistent "contraction of the universe of material objects, objects would be replaced by increasingly immaterial processes and services" (Maldonado, 1994, p. 10. Translated by the authors).

However, can virtuality overcome what is defined and perceived as real?

As shown later, the matter remains even in the virtual and "there is therefore no escape from the constraint of physicality" (Maldonado, 1994, p. 12. Translated by the authors).

The intention is to re-materialise the virtual, where the prefix "re-" has a double meaning of duplication and repetition. This inverse path involves new forms of gestures that do not disregard the will to sincerity, a term understood here as assuring the truth of a thing, specifically the materiality.

It is then explored the antithesis scenario: the current dematerialisation trend and digitalisation of the user experience. To conclude, we return to the initial thesis, showing case studies that show how the new complexity needs re-materialisation.

The essay thus takes up the thesis proposed by Tomás Maldonado: the constraint of materiality as a kind of postulate.

Ideas and Reflections, the Legacy of Tomás Maldonado

> Is it really certain that permanence and individuality of objects have begun to yield their characterizing value concerning the material order of our world?
>
> (Maldonado, 1994, p. 11. Translated by the authors).

Tomás Maldonado, in the essay *Reale e virtuale*, finds that individuality and permanence,[1] the two defining properties and states of sensory perceptions of the material object, are losing their value in an increasingly digitised world. Individuality, defined as "the note or set of notes proper and exclusive that characterises the individual and distinguishes him from other individuals of the same species or other members of the same society",[2] gives way to multiplicity and replicability. Permanence is described as persistence, but this definition clashes with the concepts of evolution and transience over time. The issue becomes even more complex outside of classical mechanics, characterized by those properties. The lens of quantum mechanics is used, distinct from the dualism of the wave and corpuscular nature of the behaviour of matter.

Starting from this reflection, the aim is to understand how permanence and individuality are configured in this new digital world, composed of strings of codes. A world that is at once intangible but visible, abstract but real. The doubt is crucial since there is an increasing attempt to re-materialise the digital.

The process that needs to be analysed before re-materialisation is dematerialisation, which for Tomás Maldonado in *Reale e virtuale* is a phenomenon linked to emerging technologies (information technology, telecommunications, bioengineering, robotics and advanced materials technology) and software or, as the author prefers to define,

1 Defined by the French physicist Alfred Kastler.
2 https://www.treccani.it/vocabolario/individualita/ (Last consultation February 3, 2022. Translated by the authors).

the technologies of thought. In the word dematerialisation, the prefix "de-" means removal and deprivation. Following in the footsteps of Tomás Maldonado, the essay takes up the three steps through which this removal/privation of matter takes place. The first is the transition from hardware to software (e.g., the transition from the physical calculator to the application that can be downloaded on the smartphone), the second is the condensation of several pieces of hardware into a single piece of hardware (the personal computer contains several pieces of hardware in one, like the typewriter, the calculator), and finally, the transfer of a product as a service (from car ownership to car-sharing). It is interesting to note how artificial transposition often recalls its material ancestor in this process.

> There is no doubt that between natural and artificial life the boundaries appear increasingly blurred today. […] this does not mean that the issue concerning the relationship between body and technology is not of extreme importance in hypermodern society. It concerns above that our bodies will live the adventure of continuity between the natural and the artificial taken to its extreme consequences (Maldonado, 1997, pp. 137-138. Translated by the authors).

The term "critica" is intended in this essay as an analysis, i.e., an exploration of the pros and cons of the phenomenon of the internet and the new technologies of computing and telecommunications, to arrive at conclusions. The essay *Critica della ragione Informatica* splits the theme into sub-areas such as: the role of technologies in society, the apparent contradiction between progressive dematerialisation and the accumulation of material goods, and finally, how communication and interaction between people is changing.

In the visions of probable and/or desirable future scenarios, there is a conviction that we are witnessing an increasing of dematerialised reality. The essay is questioning this assertion, which is often take for granted. As early as the 1990s, Tomás Maldonado pointed out how the information society wasted many material resources. The issue is now

unquestionably urgent, and it raises the question of whether information infrastructures can mitigate material infrastructures. Indeed, the role as a saver that many people attribute to the new technologies is exaggerated. This is because this have significant impact on daily life and the environment and on this topic many questions are still open. The virtuality does not disregard the management of the infrastructures needed to support it, nor of the outputs produced. The contemporary society makes these supports obsolete long before the end of their lives through programmed obsolescence (through software updates that the hardware cannot withstand) and semantic obsolescence (through fashions and trends).

The effects of these virtual actions are anything but immaterial, a "tendency to continuously generate what, out of metaphor, might be called ruins" (Maldonado, 1997, p. 101. Translated by the authors).

From *Les Immatériaux* to the Metaverse

As Tomás Maldonado argued, in Reale e virtuale, the concept of dematerialisation was made accessible during the exhibition *Les Immatériaux*[3] at the Centre Georges Pompidou. This exhibition created awareness of a world in a process of dematerialisation in various fields such as biology, art, architecture, astrophysics, etc. During the opening of exhibition the press release issued was "Matter is not what it used to be…". The authors of the exhibition wanted to say that all processes of dematerialisation are processes of transformation. The passage from one state to another is a clear example. There are a series of processes in which technology can have a role in making the matter "intangible". In this way the technology increased the distance from the natural origin to flows of electrons and then flows of informa-

3 Les Immatériaux, exhibition curated by Jean-François Lyotard and Thierry Chaput in 1985 at the Centre Georges Pompidou, Paris. https://monoskop.org/Les_Immatériaux.

tion data. Based on these indications, three different reflections on the subject of dematerialisation are given below. The first concerns dematerialisation as digitalisation, and the consequent decrease of bodily experience; the second introduces the theme of sincerity linked to the theme of dematerialisation in virtual reality; in the third paragraph, it was attempted to rematerialize algorithmic data and memory through physical installations. Finally, the theme of dematerialisation in services and brands is finalized questioning on the Mark Zuckerberg's *Metaverse* project, where a digital and immersive world is accessed mainly – but not exclusively – through virtual reality.

Dematerialisation and digitalisation, bodily participation in the experience

In *Reale e virtuale*, Tomás Maldonado linked the concept of dematerialisation and digitalisation, talking about emerging technologies. Concerning dematerialisation, in digital terms, we are often faced with a sort of Swiss army knife, with several functions. In the process of digitalisation, there is a tendency to unify different artefacts that perform different functions into a single technological instrument. An example is the computer or smartphone which contains in itself: calculator, telephone, notebook, etc. An example of an artefact, that includes several functions in one, is the smarty writing set by *Moleskine* (Figure 1). In the beginning the standard notebook, purchased for writing/drawing, was made to be able also to digitalises the created products. Then *Moleskine* designed another smart notebook, which allows you not only to write as in an ordinary notebook, but to digitalize content and share it through an App.

This hybrid model gave the possibility to maintain to reproduce the physical gesture of writing on a real paper, through a smart pen and, at the same time, gaining the advantages of digitalisation. This example brings to a question: how can we combine the progressive and inevitable digitalisation with its advantages, with the counterevidence of the needs of physical and sensorial experiences? In the case of writing,

the process can be either whole reconfigured, such as writing through a keyboard, or simulated, in the case of the tablet with its electronic pen. In the first case, the experience with the material tool requested the distancing from the previous model and the acceptance of the new one. In contrast, in the second case, the experience of writing remains almost unchanged.



Figure 1: Smart writing set by Moleskine. From: https://www.wired.it/gadget/accessori/2016/04/08/set-moleskine-per-appunti-su-carta-tablet/

This brings us back to Tomás Maldonado's statement: "There is no escape from the bonds of the physicality" (Translated by the authors). In the case of the *Moleskine* notebook, it guarantees to the user the possibility to maintain the link with the past, reproducing an experiential gesture. We can hypothesize that the digitalisation process has to do with processes and modes of interaction. Therefore, it is necessary to build new physical tools that enable the production of new dematerialised and digitised processes.

The discussion on physical experience must do, first of all, with the attempt to reduce the level of intermediation, for example making the numbers code, indecipherable by any user, more tangible. So, it is not necessary that handling a physical object, such as Moleskine smart book, is a process of re-materialisation of experience. However, it tries

to reduce the levels of intermediation, increasing bodily participation in the experience.

Dematerialization between simulating and sincerity

The concept of dematerialisation has a different meaning in the context of virtualisation. Ezio Manzini dealt with the theme of dematerialisation with virtualisation, defining it "simulated reality": "[…] the opening of a new dimension reality: the production of simulated worlds, whose 'materiality', or better the perception of what we can define their materiality, is pure information" (1990, p. 23. Translated by the authors). If, as Ezio Manzini proposed, the material must "sincerely" show its intrinsic quality and, the "design culture" must define the "sincere" and therefore "just and beautiful" form, the process of virtualisation does not have to deal with materiality. In the virtual reality the levels of intermediation that occur between us and the perception of the world are so complex that we cannot be aware of the mechanisms in which we move. Even if virtual reality creates environments in which interaction tends to be as friendly as possible, it represents a synthesis of processes that, anyway, remains obscure and opaque to us. The "becoming sincere", that Manzini evokes, is independent of the ethical dimension, but it claims the need for interactions with the world, the reality and the material. People have increasingly demanded more authentic experiences. The "sincere image" that Ezio Manzini hypothesized in 1990 refers to being visible and transparent. Sincerity, which in the object and the matter was physically perceptible, in virtualisation "escape from our ability to perceive" (Manzini, 1990, p. 150. Translated by the authors).

The need to re-materialise complex information

In re-materialisation, where the prefix "re-" has a double meaning of duplication and repetition, there is a shift from software to hardware and a translation from data to a more comprehensible information.

The progressive increase of complexity in the reality and the consequent proliferation of myriads of data has created in people not a simplification, as was desirable, but a greater difficulty in understanding. Now the Covid-19 showed us how the interpretation of data could be dangerous for the politician in terms of consent. The people were asked to make a significant act of faith in trusting the representation of reality transformed in data. Probably, in this complex reality, the act of trust for people must be followed by the creation of tools that allow them to understand easily this data, and consequentially the reality. This could allow them to make informed decision and consciously affect reality. One of the most interesting answers comes from those "artistic" experiences that attempt to make data tangible through a process of re-materialisation.

The Datapoietic Artwork (Figure 2) is a game of light lamp that points out the attention on the conditions of poverty on our planet. The system collects the data of people living in poverty conditions, with less than $ 1.80 per day, and displays it through a flashing red light. The light, which represents a man lying and crouching, will disappear only when the number of people living in these conditions will efficiently decrease.

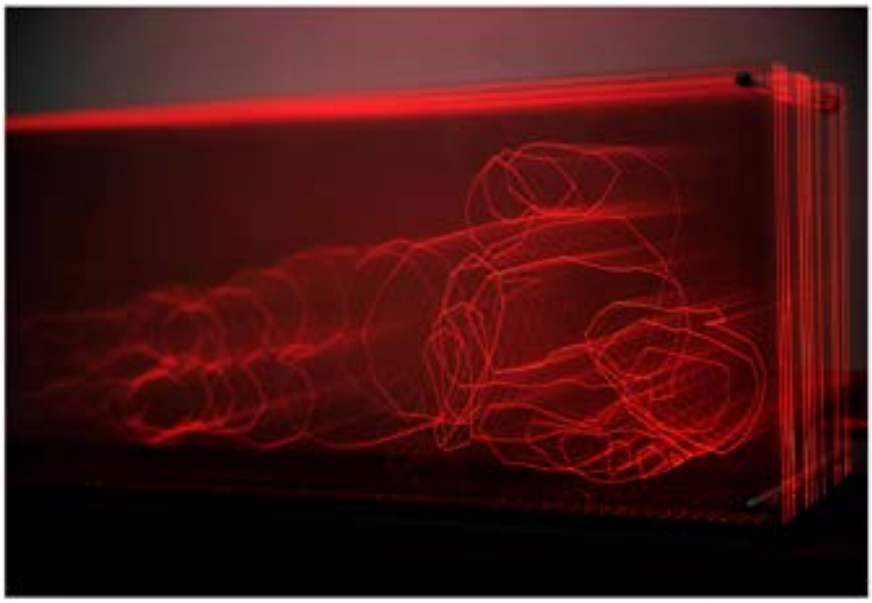


Figure 2: Obiettivo by Iaconesi and Persico. From: https://datapoiesis.com/home/?page_id=138,

Neural Mirror (Figure 3) is an installation that represents an ordinary mirror at a glance. However, when the user goes in front of the mirrors an Artificial intelligence transforms the reflected image into data. These data there are translated into a stream of information and written with a pen on vast rolls of paper. In this way, the data became tangible and visible through the transformation of user's image in "a flow of printed data".

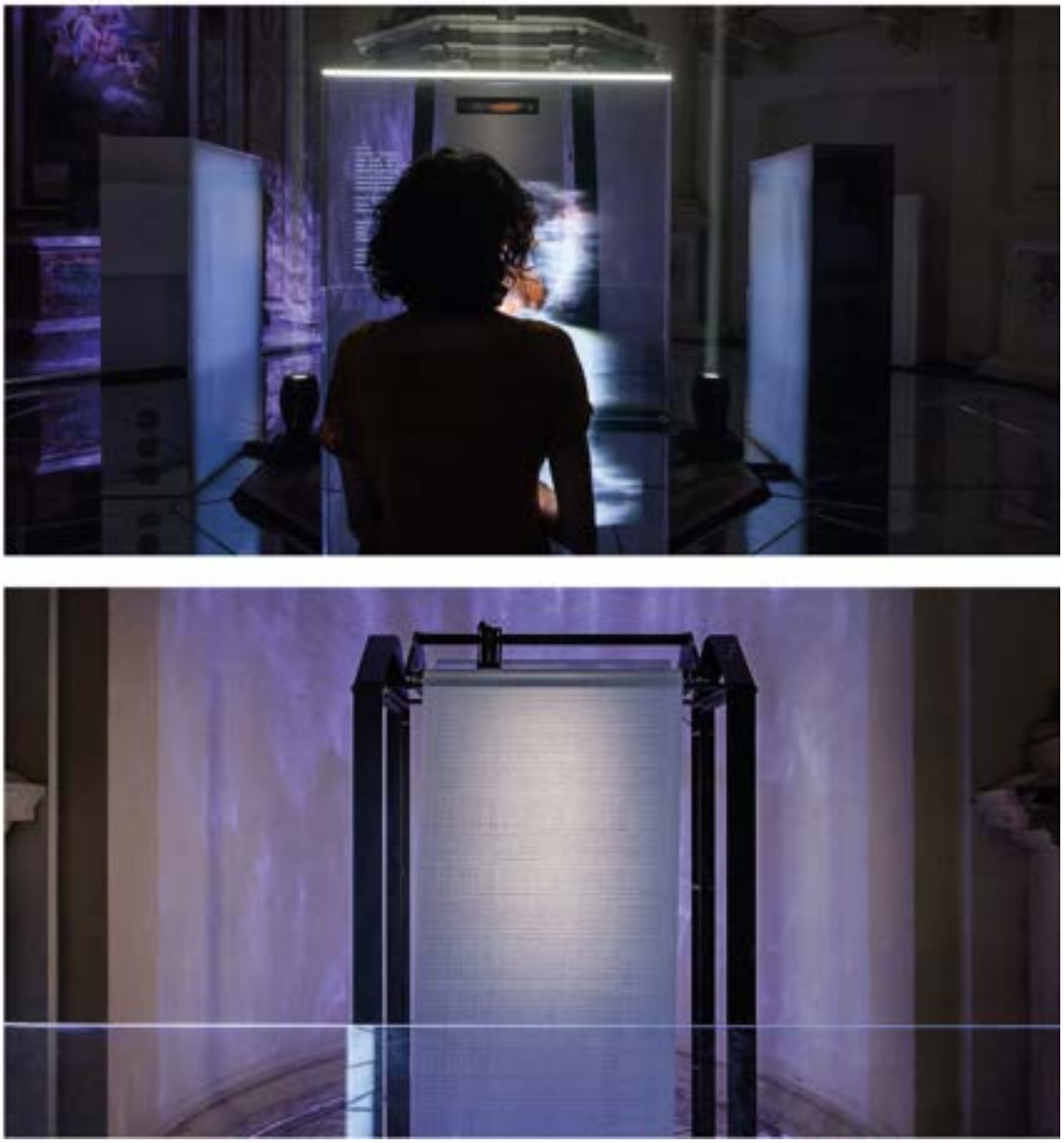


Figure 3: Ultravioletto, Neural Mirror. From: https://ultraviolet.to/fondazione-carla-fendi-neural-mirror/

The Basilica of Siponto[4] (Figure 4) by Edoardo Tresoldi, instead, attempts to re-materialise what is no longer there or what could have been in the past. The author created an ancient Paleochristian Basilica through what he defines as Absent Matter, a "transparent" sculpture made of wire mesh.

The processes of re-materialisation of data, or in general digitalization, in these cases started from a physical form where is possible to interact. Therefore, the focus is, above all, on the emotional aspects of perception. The trust relationship between the user and the author is based on the authenticity of the experience, involving emotional aspects. The interaction, indeed, happened not only with cognition or rational interpretation but also with perception.



Figure 4: Basilica di Siponto by Tresoldi. Photo by Blind Eye Factory. From: https://www.edoardotresoldi.com/works/basilica-di-siponto/

4 Promoted by the MIBACT Regional Secretariat and the Archaeological Superintendency of Apulia, the project is linked to a conservative intervention. https://www.edoardotresoldi.com/opera/

Intangibility, invisibility, miniaturisation, de-substantiation

The other theme introduced by Tomás Maldonado in *Critica della ragione informatica* and in *Reale e virtuale* is the overcoming of the material object in favour of process and services. It is easy to associate the theme of services with concepts of invisibility and intangibility. The design is no longer only the artefact, but also the relationships and connections of spaces, things, and people and therefore, the experience. Moreover, in this context, the themes of sincerity and trust returned because these are two indispensable elements in the world of services. The experience must be built using the sincere method proposed by Manzini. In this way, the user can verify that the process is "beautiful and fair". Now, the most widely used tool for verifying the reliability of the service, but also of the product itself, is the feedback. However, it is necessary to understand whether this tool is sufficient to verify the actual effectiveness of a service or product, because the review model is not very visible and tangible.

Andrea Semprini also treats the subject of services by combining the concept of dematerialisation with two new ideas: miniaturisation and de-substantiation. Before dematerialisation there was the process of miniaturisation of products reducing their size. The concept of de-substantiation, on the other hand, goes further: "the tendency of consumption practices to move towards products that have less phenomenological density, a greater physical presence, but on the other hand often an increasingly important symbolic and imaginary density" (Semprini, 2006, p. 31. Translated by the authors). In the contexts of services, as Andrea Semprini points out, also "ideas, images, emotions, imaginaries, stories" (2006, p. 32. Translated by the authors) are consumed and, in these new models of consumption, brands could bring more value. A sort of new re-materialisation and concreteness, not anymore only physical, but also semantic.

So finally, we arrive to our days with Mark Zuckerberg's proposal. The idea of creating a new Metaverse where everyone can build different scenarios where experiences can happen: "3D spaces in the

metaverse will let you socialise, learn, collaborate and play in ways that go beyond what we can imagine".[5]

Is this new way of interaction feasible after Tomás Maldonado's statements on the inescapability of materiality? Furthermore, what consequences would have this new scenario in facing the need of experiences connected to the physical world?

A Desire for a Return

Nowadays technologies are pushing towards increasingly sophisticated processes of digitalisation and virtualisation. This leads to a generalised belief in a dematerialisation of reality and the human starts to feel an urgent need to go back a few steps along. There is a desire for physical experiences where matter, such as the body and each other's presence, have a meaning, a sense that is irreplaceable.

The case studies analysed present research for authenticity, something that can be experienced without too many intermediary processes but through immediate uses. How can we reconcile extreme digitalisation and the research for a direct connection with reality? Through guided processes of trust and the protection of sincerity. In particular, the trust given by the user to those who produce artefacts and processes is a form of passive trust, which today is challenged and tested. The sincerity, as Manzini says, is the requirement that designers must apply to allow a new relationship between artefact and user. The designer's role is to reshape virtual reality, give sincerity and inspire confidence through physical and concrete experiences, and understand the complexity generated by virtuality.

The following essay is not intended to demonise the consequences of acting and experiencing in a virtual space; the intention is to show how virtual actions could have material consequences; experience, therefore, seems to be never immaterial, but the progressive loss of the senses in this process is evident. The body apparently disappears

5 https://about.facebook.com/meta (Last consultation February 20, 2022).

in virtual communication, which substantially changes people's interaction. The "disappearance" of the physicality of the interlocutor is translated into a loss of senses that substantially changes the interaction. The consequences of this were sadly evident during the COVID-19 health emergency, which wake up again a desire of presence and materiality, necessary conditions, even in extreme cases of dematerialisation, to not humanity's condition.

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