



# Roberto Marchesini, *Technophysiology, or How Technology Modifies the Self*, Cambridge, Cambridge Scholars Publishing, 2023, 242pp

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Anthropocentrism with its illusion of human exceptionality and human autonomy, control and dominion over the world, including technology, is an obsolete remnant of the past. Like radioactive waste, however, it is not only resilient but one of the most pernicious, poisonous and pollutant perspectives we can hold on to. This is what Roberto Marchesini unflinchingly argues in his freshly published *Technophysiology*. The book analyses “how technology modifies the self”, offering a 360° perspective on our relationship with technological otherness as the most impactful factor on our current ontogenetic development, something that is moving us away from what has always been our illusory centre of gravity: the human.

Since the advent of the new millennium, this process of decentralization has been happening more quickly than ever before. Also due to social and political resistance, however, we are slow to consider the serious repercussions of this process and to respond to them appropriately. Marchesini’s work is also an effort to redress this dangerous delay. With his encyclopaedic knowledge, the ‘philosopher of relationship’ directs his focal lens towards the multiple ties that bind us to our environment and that have been

shaping us during our phylogenesis. Based on an extraordinarily rich palette of scientific resources—from archaeology to evolutionary biology, from the neurosciences to psychology, from sociology to philosophy—Marchesini’s analysis explores the porose configuration of the human: its *dependency on*—as opposed to *independence from*—the world, the reasons which make the cyborg the most appropriate representational model of the human species, the way in which today’s rocketing technological acceleration is impacting on our identity, the dangers we are naively (and stupidly) overlooking, and the precautions that we should take instead.

Marchesini’s work remains as scientifically impeccable, thought-provoking and challenging as ever. But this time he even surpasses himself by exploring one of the tenets of his posthumanism more deeply and comprehensively: the fact that we are embodied creatures. This means that the environment in which we live is a part of us rather than a mere container. We are all interconnected—a far broader and deeper truth than what is implied when we speak or think of the web. The book’s underpinning idea is that humans are phylogenetically and ontogenetically interconnected not only with other humans but with non-human organic and non-organic entities alike. The niche in which we live—both natural and technological—is a host because we inhabit it as much as we *are inhabited* by it. Indeed, the niche is one of the factors that shape our body.

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As primates, we are prone to modify our environment. This is one of Marchesini's starting points. Modifying our environment is how we express our creativity—a feature that, as argued in another of his recent works, *The Creative Animal* (2022), characterises both humans and non-humans. But the environment does not welcome our intervention passively; it responds to it by re-directing selective pressures. Creativity entails *technopoiesis*, namely the invention and use of tools. Yet tools are not compensation for something missing; they are not merely utensils, devices or instruments that give us control and power over the world. They are *things* that change us because they twist our evolutionary trajectory. The chopper, for example, represented the first form of technology because it modified selective pressures. To cut and eat their food, hominids no longer needed a strong mandibular apparatus. The relief of selective pressures on the jaws progressively gave way to the development of a bigger splanchnocranium and ultimately larger brains. Our somatic dimension is therefore mouldable. We are “metastable entities” (p. 36) and our body is plastic—not absolutely plastic though; not liquid in the sense that it can take any form. We cannot exit our species; in other words, we cannot transform into fish or birds. But we can, and during the course of history did, chisel our body. Chiselling was actually the fruit of a negotiation with the environment based on our range of phenotypic variability, i.e., on the degree of possible ‘bodily reorganization’ determined and envisioned by our phylogenetic legacy.

To understand this, we do not even need to go as far back as prehistory and compare Neanderthals to *Homines sapientes*, who, according to Pat Shipman in *The Invaders* (2016), took over because of their victorious alliance with dogs. It is sufficient to think about how in the past century the shift from a predominantly agricultural to a predominantly industrial society has impacted on our overall skeletal structure, or how, in the course of just a couple of decades, the so-called “millennial generation” (p. 101) with its systematic exposure to digital technology has lost in concentration skills but gained in multitasking ability compared to the people born in the twentieth century.

*Technophysiology* is therefore a concept that defines the moulding influence that technology has on our body. The human is not an untouchable and pure essence. It is not the creature to whom Prometheus bequeaths the gift of fire, i.e., *techne*, as

compensation for its lack of natural talents. Neither is it the measure of the world, namely a being who stands halfway between Heaven and Earth and serves as a term of comparison for all that exists, as symbolized by the Vitruvian Man. The human does not stand above the world but lives on a level with the world. The human is a mirror of the world. Human traits reflect the human environment. We are dependent on the environment, a condition for which Marchesini coins the term “heteronomy” (p. 12). A consequence of heteronomy is that the more we rely on technology to interact with the environment, the more we become dependent on it—both the environment and we ourselves become technological.

By comparisons to bonobos, gorillas and chimps, we are the primates who moved the furthest away from the shared model. Notwithstanding the hominids' shift towards bipedalism, changes in the sexual and reproductive dimension, the development of the neurocranium and social and communication skills, some anthropologists keep on denying the huge specialization acquired by the so-called *Homo sapiens*. Notwithstanding our loss of ontological autonomy, we still defend an anthropological difference or essence. For Marchesini, such an attitude can only be accounted for in terms of ideology: non-specialization preserves the idea of self-determination and therefore the arrogant illusion of control and power over the world.

Unlike what essentialism suggests, our needs *do not predate* our encounter with the world but *follow* the act of what Marchesini calls “technomediation” (p. 1). Technology mediates our relationship with the world by increasing our connections with it, hence dependence on it. Technology anchors us to the world. It multiplies and complicates our bonds with the world instead of simplifying our relationship with it. By becoming more dependent on the outside, and by needing tools, our need for information increases too and raises the bar of our performance accordingly. We can do more because we have more devices, but exactly because our standards get higher, we get more and more intermingled with technology, we increasingly rely on it and, by doing so, distance ourselves from our phylogenetic core. Technomediation is like an anastomosis: technology is grafted into our body. Examples? We do not need to imagine the implantation of chips. It is sufficient to think of mobile phones or vaccines

and drugs, such as antidepressants—neuro-reuptake inhibitors are as infiltrative as nano-technology.

This explains why Marchesini views the post-human cyborg as replacing the Vitruvian Man of humanism. The cyborg is the incarnation of the body moulded by technology, a body that, contrary to an established view of technology as a means of empowerment and emancipation, actually lays bare human fragility. The cyborg disrupts notions of balance and immutability and unveils our dependence on the world. It also offers a retrospective over the human: we have always been cyborgs; we have always been dependent on the world regardless of the ostentatious humanist claims of our purity and autarky. The cyborg symbolises eco-ontology, the fusion of nature and technology, and the recognition of our uninterrupted connectedness. Unlike the Vitruvian Man, the cyborg cannot be naked. It cannot strip itself of technology, because it is the technological apparatus that makes it what it is. Technology is what the cyborg has emerged out of rather than an armour it can wear or take off as it pleases. Consistently with one of their predominant motivations—to collect—humans have always perceived the world as something to incorporate. The problem is that they have refused to acknowledge it.

In fact, our modes of incorporating the world have affected our ways of perceiving it. Technology determines what we deem ‘normality’ as well as our values (what we consider acceptable and good). Someone refusing to have a mobile phone today would be considered ‘eccentric’, to say the least; the same is true for the computer. Only just three decades ago owning a mobile or a computer was a matter of status, of being able to afford it. Arguably, today it is not even the number of mobile phones or computers that define a person’s status; it is their model—the latest model.

Technology ultimately regulates all facets of our lives, social, cultural and emotional; it defines who we are. Significantly, we speak today of *Homo technologicus*. Within the kaleidoscopic analysis that Roberto Marchesini conducts about the relationship between technology and identity and about techno-addiction, the following points are particularly worthy of being mentioned: the loss of contact with reality; synchronicity and the fragmentation of identity, and the implications that technology bears

for our affective dimension. All these points are intertwined and we shall examine them below.

In general, identity emerges from the convergence of three interrelated factors: innate dispositions (phylogeny), environmental contingencies (ontogeny), and techno-cultural intermediation (niche). Identity formation therefore is not in the hands of humans only. Far from being autonomous, we are only partially in control. By enhancing certain experiences while thwarting others, technology impacts on our cognitive and affective systems. In addition, it modifies our proxemic space, namely the space of our interactions.

Let us think of the internet. It has expanded our possibilities of communication and rendered physical presence almost unnecessary. This was tragically proven during the COVID-19 pandemic when even schools were replaced by online classrooms. Taking part in online events and conference calls does not require travelling: we do not need to move across space and time. Marchesini conducts a profound reflection upon the implications of this temporal and spatial metamorphosis by using an easy example: how we see the landscape when we travel by car compared to when we cycle or walk. Our experience is totally different. Acceleration tends to cancel space and, with it, our physical contact with the world, the space outside, the actual landscape and its real inhabitants.

Technology changes the *Umwelt*, it creates a new existential plane and accordingly a new attribution of meaning, hence sense of values, which are related to the new experiences we make. Within a technological niche, the body becomes increasingly detached from the outside world, which for Marchesini means the world of nature, of animals, of concrete objects—as opposed to digital shapes and virtual objects. Digitalization has eroded our experience of reality: our physical contact with, for example, vinyl records, VHSs, tapes, etc., which still informed the era of the analogue that now seems to be gone forever. Listening to music, watching a film or taking a photo all entail the same experience: tapping on a mobile phone or computer.

We are moving towards a progressive dematerialization of society—no books, no records, people meet online rather than in actual meeting places. We might as well seem to be more interactive socially because we can get in touch with people all over the world, even people we have not met and may not ever meet. But, as a matter of fact, we get more and more

enclosed in a narcissistic bubble. On the web and in social media, dialogue becomes fictitious and degenerates into the spectacularization of everyday life. To communicate we no longer require a real community. A selfie is not a dialogue but a monologue, a request for acknowledgement and recognition regardless of the authenticity of the relationship we entertain with the interlocutor. Our interlocutor may not even be a human any longer, let alone a non-human animal. It is a machine.

Traditionally we think of identity as historical becoming, a linear chronological narration about an individual. Marchesini observes that the internet tears this linearity apart. Since whenever we interact with the digital world we leave a trace, a mark of us, we end up having a plurality of identities simultaneously; our identity is split and scattered in all the traces that we keep on leaving. Because our present and past identities coexist all together, it is as if there were no more memories, and multiple, different identities were all existent in the now. In the dictatorship of the present in the twenty-first century, the historical component (the past) is lost. The present is flooded by a past that deletes memories. Synchronicity destroys not only geographical space (as suggested above) but also historical space, memories and biographies as *the space of our lives*. The splinters of the self that get scattered on the web, this tyranny of the present impacts bodily stability and causes illnesses. Moreover, constant exposure to interactions, and the urgency to be available at all times, do not leave space for reflection. Hence, time acquires a different meaning, it is no longer the time of the body.

In essence, the technosphere reconfigures the human phenotype. As Marchesini observes several times, technology is not a neutral tool that enhances our performativity; it radically changes our experience of the world and us along with it. Technology is infiltrative, it forces itself into the body. While, as previously suggested with reference to the chopper, this is true for all forms of *techne*, it is even more so for digital technology. Why? Our body is the fruit of a development that took millions of years. How can we expect it to keep pace with changes happening in the space of one or two years, let alone those taking place within a couple of months? The amount of information we are currently exposed to and need to process far exceeds our body's organizational capacities. Hence, the term "technocoercion" (p. 102) with

which Marchesini defines the strain that digital technology imposes on our body, including the consequences it bears in terms of new pathologies and a substantial increase in the consumption of anti-stress drugs.

The most dangerous consequence of the invasive presence of technology in our lives, however, is that it risks compromising our affectivity. This risk is the greatest because of its knock-on effect on future generations. We look at the world through the lenses that we have acquired in life, and our formative lenses are shaped during our childhood. There are sensitive periods in childhood that define our affections as well as our affective referents, including objects. Sentimental education forms here, when the individual seeks and finds certain references that represent the self, and create a sense of comfort and familiarity.

If digital gadgets and the experiences they offer become the objects that acquire a transitional value in the child-parent relationship, i.e., in the relationship between the child and its secure base, then the child's attachment will be (mis)guided to them. If we grow in a natural environment our referents will belong to the world of nature; if we grow in a technological environment our affection will be directed there instead. The consequences of the sentimental education of children are devastating: without contact with reality, and deprived of a position in space and time, they lose a sense of physicality and only live surrogate experiences. Actual presences—real objects, people and non-human animals—lose importance producing an increasing affective impoverishment and devaluing activities that are indispensable for our cognitive and intellectual functions.

Empathy, namely the capacity to project oneself beyond the self in order to embrace the other, is connected to mimesis, imitation, and the ability to see oneself in the other. The appeal exercised by the other (epimelesis) and the desire to embrace it and possess it, is what culture ultimately derives from: culture is the fruit of our encounter with otherness, animal otherness in the first place. By empathising with digital tools rather than living beings, we desensitize ourselves from real feelings and emotions losing touch with the consequences our actions can have in the real world. The near indifference with which we are facing the ecological catastrophe and the slowness with which political institutions are responding is a tragic sign of this.

“Misalignment” (p. 157) is a word Marchesini uses with reference to the simultaneous proliferation of identities caused by the internet and social media but it can also refer to the altered experiential, hence affective, dimension deriving from technomediation. Misalignment not only splits and dismembers the individual by creating multiple and divergent or colliding images of the self, but it also nurtures our cravings, our personal dissatisfaction and our need for self-fulfilment. Technology does not satisfy our needs but only shifts the trajectory of our projections. By facilitating our ability to obtain things, it ends up producing a sense of continuous lack. Because they make things easier, tools actually diminish our expressive range, namely our need for and possibility of action. They increase a sense of vacuum and lack instead while raising the bar of our goals. Social competition is not mitigated by technological development but is taken to increasingly higher levels of confrontation.

This is a fundamental key to understanding the source of modern psychological and cultural problems, such as depression, cultural pessimism, and confusing desire for the lack of an object, instead of understanding that it is the expression of our unrestrained and unrestrainable dive into life. Tools curb or suffocate our possibility of self-expression, hence creating dissatisfaction by reducing our expressive load. Expressing our motivations by doing and acting is the only way in which, as Roberto Marchesini argues throughout his philosophical reflection, here and elsewhere, we can feel accomplished and self-fulfilled. We do not need objects; what we need is to express the action that is directed towards them. Objects are merely the expedients we use to *express our motivations*, namely *to live*.

Roberto Marchesini’s thought is surprisingly aligned with that of Giacomo Leopardi (1798–1837), Italy’s greatest nineteenth-century poet-philosopher and an extraordinary critic of the superficial optimism of his own time. Not unlike Marchesini, in both his poetic and prose works, with his unique and sharp insight, Leopardi denounced the naïve and presumptuous illusion of the radiant human future that the Industrial Revolution and its development seemed

to presage. For Leopardi too, the only antidote to boredom and unhappiness was engaging in doing, in action. I would like to conclude this tentative presentation of Marchesini’s fundamental work on *Technophysiology* with the wish that his warning to take a critical perspective towards technomediation and to eradicate the surviving remnants of anthropocentrism not be glossed over as was the case with Leopardi. Should it happen, we will most likely be forced to deal with the consequences when it is far too late. Another reason why reading this work is a ‘must’.

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