

# Science and Illusion

## Metaphors and Visions of the Posthuman

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### 1. Introduction

The reflection on the role of metaphor as a heuristic tool is nowadays established and quite classic, being broached in standard texts (Black 1962; Hesse 1966) as well as in more recent works such as *Making Truth: Metaphor in Science* (Brown 2008). The fundamental hypothesis, which I will adopt in this paper, is that metaphor can guide us towards new fields of meaning and epistemic perspectives. In other words, a metaphor opens a context, more or less wide-ranging, hitherto ignored: the assumption here is the linguistic nature of human cognition, which means that any significant change at a linguistic level has effects on the cognitive level. However, as will be seen, this also implies cognitively less desirable consequences, as I have tried to suggest in the title of the essay.

As well as metaphor in the strict sense I will take into account the more general force of storytelling, a force which is effective also in allegedly aseptic areas. In fact, it is the same asepticity, real or imaginary, that is liable to become a powerful rhetorical strategy: promoting science is based in no small measure on suggestions of dispassionate neutrality and flawless quantification. To say that something is scientific means crediting it as such, because of its objectivity, although this is still to be demonstrated and defined in its validity and scope. Hence, for example, images of atomic microscopes or of fMRI, derived from complex technological practices and widely conventional procedures, convey the strength of the tangible and ‘scientific’ reality of atoms or brain processes as something that can be finally seen. Documentation and advertising, or even propaganda, intersect

programmatically, as do presentation and representation. Needless to say, also the competition for funding often works into the hybrid space to which I am pointing.

This paper wants to be to some extent a contribution in this direction of study, therefore insisting on some representative *metaphors* and on the power of *visions* disseminated by effective narratives. Nevertheless, it has some peculiar features and qualifications, due in part to its specific theme. From a theoretical point of view, the most important of these is the claim that metaphor and storytelling, taken seriously in their strength, cause or may cause ambivalent effects. In fact, there is also a cognitive *dulling*, parallel to the cognitive *opening* on which the literature to which I have referred insists. In other words, the thesis (that I will just mention and use, and not defend directly) is that the cognitive phenomena of ‘openness’ and ‘dulling’ are inseparable, similarly to a paradigm change - which to be such implies, in hindsight, the *closure* of the former paradigm.

From a methodological point of view, the most important feature is that my subject theme proceeds programmatically, and not only factually, in an ambiguous light between science and conjecture, between the asepticity I mentioned before and a vibrant mythopoeic ability. But this duality is the key to performative effectiveness. For this reason, I will not attempt here to discern between what is ‘scientific’ and what is not. The story is always ‘true’ to the extent that it produces social effects: the human world is simply inconceivable without massive operations of symbolic representation, that intersect and complicate a ‘material’ substrate which is largely hypothetical (because its very existence and importance is ultimately a postulate of the intellectual reflection on it). This is especially true in an age like ours, fraught with massive post-truth phenomena, which are the outcomes of the lack of distinction between virtual and real.

The fact is that posthumanism, which will be the focus of the investigation, is as a whole built on the ability to activate a different variety of revelation, thanks to scientific credentials that pretend to be impeccable. As has been noted, for example, the frequent propensity to the lexicon of the ‘nano’ (as in nanotechnologies and related topics), starts, in a way, a narrative on the verge of the fabulous and mythological (Maestrutti 2011). As in *Gulliver’s Travels* (but obviously on an immensely larger scale), the oscillation between infinitely small and infinitely large displays a wonderful and estranging effect, due in the first instance to the sheer off scale of the mid-size objects with which we are confronted daily and to which we belong, compared to the incalculable worlds that open below and above us. Therefore, nanotechnologies don’t perform actually as an appropriate

reference to a specific domain of research, but as the opening of a revelation of manipulation of the infinitely small with bursts of virtual omnipotence. They promise intervention on the fundamental constituents (i.e. the only actual factors) of reality; the production of entirely new properties of matter; the repair of diseases on the most intimate and vulnerable bodily level, working within the space of those innermost links (atomic or molecular bonds; cells as tiny machines) that mechanism has always postulated but never really approached operationally. The scientific reference, in this light, actually serves only to legitimize the disclosure, much more effective, of the wonderful.

One important consequence is that the narrative hegemonic until a few years ago, which, paradoxically, enunciated the end of the (great) narratives, is superseded by this reactivation of traditional themes of modernity, hitherto eclipsed by the well-known disappointments that science and technology went through during the twentieth century. But since strictly political disappointments have been much worse, the technocratic religion has everything needed to catch the scenario deserted by its discredited siblings - although it is doubtful that this development could be positive. A remarkable function of re-enchantment of the world is, in fact, at work. The ability itself to look to the future in a perspective of hope, can replace political, and formerly religious, instances, that for centuries have played a fundamental function. Salvation has no longer a transcendent or political origin, but it is technological, in a wide range of variants, which do not refer only to the posthuman as such. Its most obvious indicator is an aspiration to a final valediction to the traditional limits of man.

### **1. Metaphors of immortality**

What are the crucial data of this incipient mythology? There are, inevitably, some *longue durée* instances.

First of all, and I would say crucially, a multifaceted yet strangely monotonous insistence on the issue of longevity, and ultimately immortality. One consequence of this pervasiveness is the difficulty of choosing a representative text, simply because there are too many. However, an appropriate example would be *The Fable of the Dragon Tyrant* (Bostrom 2005a), where the struggle against death is equated to the liberation of a community forced to a constant toll of victims by a cruel dragon. Recovering the stylistic features of legends legitimates the narrative: the silver bullet against the dragon considered invincible, and immortal, is

guaranteed by technology, which updates the legendary swords of medieval knights, which are in turn surrogated by scientists engaged night and day in a feverish search for the great antidote. The story ends with the opening of a vast future of growth, beginning once humanity is liberated of its fragility:

My dear friends, said the king, we have come a long way... yet our journey has only just begun. Our species is young on this planet. Today we are like children again. The future lies open before us. We shall go into this future and try to do better than we have done in the past. We have time now – time to get things right, time to grow up, time to learn from our mistakes, time for the slow process of building a better world, and time to get settled in it. Tonight, let all the bells in the kingdom ring until midnight, in remembrance of our dead forbears, and then after midnight let us celebrate till the sun comes up. And in the coming days... I believe we have some reorganization to do!

Immortality<sup>1</sup> is therefore one of the more typical themes. This should not come as a surprise, given the opposition of the posthuman movement to the finitude of human experience. Seeing that the human is defined by mortality, that unicum composed of my death and my awareness of it, the genuine posthuman theorist will aim at the elimination of this burden that keeps us irremediably amid the windings of our perennial condition. Postmortality, in this light, is not an optional hypothesis, in the effort to posthumanity. But this step shows how posthumanity, in order to be such, must imply a tendency to leave the human dimension. All the charm and the difficulty of the posthuman resides on a distance from humanity, which should be consistent to be able to talk about *posthuman*, but which must still allow us to recognize ourselves in these improved versions. Now, this difficulty is exactly that faced by traditional religions (i.e., opening a condition different from the mundane, yet to some extent still human), as well as by political utopias (resolving the space of the conflict through the production of a new man; but retaining in it a traditional human physiognomy so that we could still *understand* what it could possibly *mean* for the heirs of the revolution to enjoy their new condition).

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<sup>1</sup> Or *semi*-immortality, because no technology can make death such as *violent death* impossible (or such as the destruction of the inorganic base where the identity of the subject would be allegedly collected), or can extend the existence *prior* to birth. In the end, the possibility of immortality would seem to find an insuperable barrier in the heat death of the universe: see Bostrom (2010: 4): “Any death prior to the heat death of the universe is premature if your life is good.” On “immortality” in this limited sense, see Morin (2002).

The emblematic texts most often cited are perhaps those of R. Kurzweil (1990)<sup>2</sup> and K.E. Drexler (1996). While the former focuses, in a somewhat obsessive way, on the idea of a future singularity<sup>3</sup> that should, given certain parameters in exponential progress, determine a sort of unbelievable quantum leap and an almost eternal life, the latter, using visionary tones which have been much criticized, emphasizes the developing of a bewildering nanotechnology to build a future of perfect health for mankind<sup>4</sup>. The goal is thus not different. Kurzweil presents an array of versions of the human body, numbered like the releases of the software, to ensure a bridge to a future of immortality. The body becomes a rough draft, at most a trace, readjustable, reprogrammable, integrable, etc. Intercepting the magic moment of the so-called 'singularity', which in its most plausible version should be a novel sort of intelligence capable of self-improvement and then rapidly superhuman, is analogous to reaching the escape velocity to the limits of the human condition, breaking away from the weight of the Earth's gravity. Once past this border, men liberate themselves from the gloomy ballast that so far has marked their status. The dream of perfectibility is adapted to an individualistic and biological context<sup>5</sup> detached from any political background and from any hope of originality, as the historical path is ultimately predetermined by an inevitable technological evolution.

Drexler, on the other hand, submits a peculiar and extremely powerful fantasy. This consists in the image of an extreme, almost infinite, miniaturization, able as such to act, staunch, repair, within a body conceived as a complex machine, in the best mechanistic tradition. If in Leibniz's fantasy the brain was expanded to the size of a mill, with its parts proportionately magnified and therefore perfectly visible and accessible, as in some old science fiction stories, Drexler, by shifting to the side of the infinitely small, achieves the same imagery. The metaphor of the body or the brain as machines, which for centuries had, and still has, an absolutely crucial weight, is reactivated in a way that meets an intimate space of the imagination.

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<sup>2</sup> Kurzweil (1990). By Kurzweil see also (1999), (2004) (with Grossman; this is the work focused most directly on immortality), and (2005).

<sup>3</sup> The concept, which is of physical and mathematical origin, was fixed in the sense relevant here by Vinge (1993).

<sup>4</sup> Nanotechnology has a very rich and ancient fictional history, to which I already made some passing reference. Its twentieth-century version has an inflection point in the famous Feynman (1959).

<sup>5</sup> See Morin (2002: 348).

So the therapeutic machines intervene and repair the great machine of the body. But these microscopic molecular robots should be capable of replication, just like the cells to which they are analogous; and this opens the chance of their uncontrolled and apocalyptic reproduction. In the hands of criminals, or simply because something goes wrong, the tide of nanomachines might, says Drexler, plainly consume the biosphere and submerge or supplant humanity<sup>6</sup>. An uncontrolled self-replication engenders a deep fear, because it alludes to the reproduction of living beings themselves and therefore indicates a deviation from the typical condition of the machines. Just as humans, according to the dystopias of the Seventies associated with the (semi) scientific speculation of the Club of Rome and still present in our public discourse albeit less straightforwardly, severely overpopulate the Earth, literally covering it with their presence and activities, so nanomachines will proliferate frantically and out of control, ousting all forms of biological life. In fact, the theme underlying the proposal of Drexler, and cyborgs in general, is precisely the abolition of the boundary between man and machine. The replacement by artificial prostheses of not functioning, or not optimal, parts of human body, merges machine and biology. From the very beginning, technology has served to control the dangerous world that surrounds us, but given that over time our own body becomes pernicious because of its frailty, technology is now employed to intervene within and against it. In other words, to effectively control our own body implies fixing it, surrogating it, improving it. This can extend from the limbs or organs of sense, up to (parts of) the brain itself (as in some experiments, the hippocampus for Alzheimer's patients).

Not surprisingly, the most important and characterizing strategy, well aware of what is involved in becoming immortal, reduces the individual to its information and thus makes it downloadable into inorganic supports absolutely durable or indefinitely replaceable. In this case it is the brain as such, primarily the cortex as the seat of the higher intellectual functions where we maintain our identity, that is replaced. The strategy consists of a mapping obtained through almost perfect three-dimensional scans of the brain, or else, through nanomachines slowly patrolling the cerebral convolutions, taking their images step by step. The outcome is a total spiritualization of human identity. The concept of brain death is already based on an informational notion of human subjectivity<sup>7</sup>: the downloadable

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<sup>6</sup> That these concerns are taken seriously within the movement, is confirmed by the significance given to them by a much more balanced author like Bostrom (2000). See also Dinello (2005: 6); Maestrutti (2011: 99 ff.).

<sup>7</sup> Lafontaine (2009: 105).

self just takes a step beyond the bond still lingering with the body. In short, between organic and inorganic there is no real difference; the difference that matters is the mind, which must be saved while the body may wither away without consequences<sup>8</sup>. The proposal regains the most radical dualism present in some moments of Western cultural tradition. This point is extremely important: posthumanism in this respect does nothing more than take up a precise legacy – humanistic and rather anthropocentric.

On the one hand, it is obvious that the safety instance engenders a preferential option for the information and the virtual rather than for the body and material. As observed by one of the characters of Bostrom:

I, for one, would much rather be uploaded than having my biological brain repaired. I already spend most of my time in virtual reality, and I'd like the security of being able to make a back-up copy of my mind every hour or so. If for some reason I want to manipulate physical objects, I would rent a robot body that was suitable for what I wanted to do<sup>9</sup>.

As one can see, here the typical trend of contemporary people towards safety backups becomes compulsive, in an anxious need to immunize *ourselves* from any power interruption. After all, the realization of the ultimate control over our body (a tendency that is no doubt already present in current techniques of constructing and modeling it, from the gym to the surgery) can be fully expressed in the possibility to get rid of it, to discard or hire it as needed or preferred. As an occasional hardware of a software that is elsewhere, ontologically more than physically, the body becomes an

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<sup>8</sup> In addition to Kurzweil's books, the text most engaged in a detailed analysis on the actual, even if futuristic, technological feasibility of this perspective is Sandberg – Bostrom (2008).

<sup>9</sup> Bostrom (2000). Although another character immediately replies: "Even though our virtual reality is pretty good at vision and sound, I still think it can't compete with the meatspace in the other sensory modalities. Virtual sex is great, but I prefer to touch my husband's body directly." "Meatspace" is significant: "meat" here indicates an almost derogatory factor, biological and impure. (Similar terms are also used, for example "meat-puppet", "meat bag"). In any case, the claim is interesting because it shows, obliquely but unmistakably, what the background to virtualization actually is. It is the wide world of online sex, incomparably more prudent and less demanding than the traditional one. In fact, the sexual sphere is enormously important because its connection with the corporeal is obviously structural, and the attempt to detach it says a lot about the fundamental trends of present age. But sexual emphasis fits well with a rejection of corporeality, as the body now serves as a collector of pleasure, an entity properly fungible and replaceable rather than definitive. It is controlled and used by the mind and replaced if a more refined model is available. As usual, is asserted the guarantee of immune safety: if the body can be replaced it is no longer a threat, no more than a mobile's obsolescence.

accident of our self, something that defines us no more than the clothes we happen to wear. In this distinction between hardware and software there lies a remarkable series of relevant and philosophically meaningful presuppositions. Here I can highlight only one of these, namely, that it is a distinction active in slightly different forms in all contemporary analyses that focus on the essential significance of information. This is a robust paradigm, albeit perhaps not dominant. It is not just intelligence or identity that are constituted by information, but also life, as well the structure of the inorganic, when complex and differentiated. So iron or hydrogen atoms possess properties whose diversity can be traced to variations of information<sup>10</sup>. This metaphor in fact succeeds in readmitting in a soothed form, metaphysically more acceptable to contemporary tastes, the insight that the structural and formal dimension is decisive compared to the material substrate. It is no coincidence that the obvious similarity of the thesis focused on the dematerialization of identity is with Descartes. And it is precisely this kind of intuition that acts as the quantum of plausibility in transhumanist proposals, on the one hand because it is rooted on a venerable philosophical and religious tradition; on the other, and more significantly for our present purposes, because it reactivates a deep imagery: the disembodied spirit, the guardian angels, the myths of reincarnation, everything is convened by the simple and suggestive idea of an ego that is immaterial and thus preserved from the fate of matter.

It is perfectly consistent with all this that some authors<sup>11</sup> affirm the advent of immortality through preventing biological growth (puberty coinciding with the onset of aging): “Individuals so transformed will not know the sufferings of aging and can live indefinitely. Made artificially sterile by the arrest of their development, they are neither men nor women, but asexual beings physically immature though intellectually adults.”<sup>12</sup> A constellation of significant features, highlighted by Bostrom, alludes to the same neutral, locked, and defensive condition: implants, plastic surgery, an intensive relationship with telecommunications, a nomadic and cosmopolitan lifestyle, androgyny, artificial reproduction, the absence of religion, the rejection of traditional family values<sup>13</sup>. The tendency to

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<sup>10</sup> See Hayles (1999: 112).

<sup>11</sup> See Shostak (2002).

<sup>12</sup> Lafontaine (2009: 112). My translation.

<sup>13</sup> Beyond other possible observations on all of this, as Bostrom (2005b: 14) himself has noted “it was never satisfactorily explained why somebody who, say, rejects family values, has a nose job, and spends a lot of time on jet planes is in closer proximity to posthumanity than the rest of us”. Actually, this battery of options says much more about the expectations

neutralization against everything that orients and characterizes humans, from sexuality to ethnicities and cultures, should make it possible to achieve a sort of immunization from the contagion of impurity, in a word from contamination, disease, death. Political correctness here reveals its secret defensive nature against everything that is outside of it - against what is possibly disruptive. As a removal strategy, the appeasing language is symmetrical to the role of metaphor with which we began: it has the task of making a field epistemically inaccessible, as is a source of potential disturbance from the protected status that Western men and women crave above all else.

## 2. Visions of happiness

To supplement what observed so far, we can conveniently make use of the work by David Pearce<sup>14</sup>, who has developed a transhumanistic and hedonistic utilitarianism. In *The Hedonistic Imperative* this philosopher uses the tools of classical utilitarianism in an ambitious and challenging program of technical implementation of happiness. In short, he plans to eliminate suffering in human animals (as well as in not human ones, because a Darwinian premise is here crucial) using neurotechnological tools (i.e., in the short term with neuroactive drugs, in the long term with genetic engineering). The abolition of suffering is preliminary to a program of paradise engineering where sentient beings are to be redesigned and stimulated at the level of their cerebral centers of pleasure, so that everyone could experience unprecedented levels of well-being. Our motivational system would then become the well-being gradient instead of the pleasure-pain axis; the atavic dualistic and traditional wisdom would be replaced by the exclusive pole of pleasure, thanks to the appropriate and accurate administering of its physiological ingredients: a classification of gradients as they are more or less intense. Hedonism accompanies coherently the denial of death. Perpetuation of life is built around the idea of a structurally unlimited sum of pleasures: from the point of view of utilitarianism only a temporally indefinite extension of gradients is acceptable, because each interruption must be thoroughly unbearable.

Pearce's proposal has somehow the merit of going to the root of transhumanistic well-being: its deep essence is utilitarian happiness. As

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of the cosmopolitan intellectuals who lead the movement rather than about the actual fate of humanity, which is still unthought of.

<sup>14</sup> Pearce (1995). See Hauskeller (2013: 57 and ff.).

noted by Michael Hauskeller, however, the abolition of pain has a peculiar consequence. Leaving aside its possible function in view of the maturation of the individual (because anything that requires effort and overcoming obstacles, that is everything that gives existence its worth, might be dismissed), the point is that if nothing could represent suffering to us it is not clear why should we care to *avoid* it. In other words, a possible consequence of the proposal by Pearce seems to be a general apathetic indifference, completely invulnerable to variations which are not really such because they cannot tarnish a pharmacologically induced bliss. Eventually, not only would caring for oneself be compromised, but even more so towards others. Frankly, the prospect of humans that are indifferent and satisfied, slaves to indispensable drugs, incapable of empathy (in a sense, also to themselves) and of every effort as soon any effort is required, cannot be embraced as an ideal for upcoming humanity. They would resemble much more the last man than a superman, to use a pertinent Nietzschean lexicon. Yet, Pearce's proposal seems to go in this direction, if carried out consistently until its completion.

The ideological role of immortality as a political program will not be fully comprehended if it is not associated with this other typical posthumanistic instance. It is clear, in fact, that immortality as such says nothing about the quality of life of immortals. Some melancholic or even desolate literary reflection showed the plausibility of the counterproductive consequences of immortality<sup>15</sup>: infinite aging and endless boredom are just the most obvious possible repercussions of an immortality which does not include some decisive boundary conditions. It is not enough to be immortal: the same almighty technique must also guarantee happiness. All in all, this is a goal that is relatively simpler and to some extent at hand. Careful monitoring therapeutics and prevention, and above all a shrewd dose of chemicals, seem plausible candidates in order to route the individual to happiness - if it is defined, of course, in terms of maximization of hedonistic pleasure.

Actually, the emphasis on happiness helps us to understand that transhumanism is, even when not openly deployed in this sense, a form of hedonism. After all, the visible insistency on immortality is motivated by a constant pursuit of opportunities for happiness (intended as pleasure, which explains the importance of sexual issues, which are being *claimed*, in

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<sup>15</sup> Just see Čapek, *The Makropulos Case* (1922); Borges, *El inmortal* (1949) and *Utopia de un hombre que está cansado* (1975). On the work by Čapek, see also the classic reflection by B. Williams (1973: 82-100).

contrast to the attempts of the utilitarian classics to evade such charges) and the parallel avoidance of unhappiness. Probably the deeper distinction from the superman consists precisely in this: contemporary paganism tries to escape the risks. The tragic outlook is programmatically avoided, in the belief that this escape is possible and worthy, rather than a radical anthropological impoverishment, as both Greek classics and Nietzsche would have thought.

From a philosophical point of view but also when any in-depth analysis is employed, the conceptual limits of these efforts are obvious. However, it is fair to recognize that they are relevant above all as attempts that directly express an urgency and aspiration. This is not to deny that it is legitimate to question precisely the awareness of these authors with respect to their premises, which, paradoxically, show the power of visions absolutely far from any demystification. A paradoxical re-enchantment of the world is, as we have observed, already underway. Without this broader framework the brute factors, as it were, of transhumanism do not acquire their full meaning. One thing to keep in mind is the religious background that strengthens the instances that we have identified. David Noble, but also other authors, have pointed out that the fundamentalist roots of ethical and political American visions explain, in addition to numerous other phenomena, the unmistakable tones of redemption and thrust to overcome - even if this overcoming is absorbed entirely within immanence<sup>16</sup>. Here it is enough to hint at their gnostic inflection: the liberation of the spiritual or mental principle from its inadequate prison made of flesh<sup>17</sup>.

### **3. Apocalyptic ambivalences**

The inventory so far, even though short, offers a glimpse of the deepest reasons behind the captivating imaginative storytelling of posthumanism. It is all about the distinction between real and imaginary, actual and virtual: in a way, the promise of its final abolishment is the real hidden agenda of posthuman ideology. As may be recalled, in starting the essay I mentioned a sort of inevitable slippage between the level of science, useful because of its epistemological and social prestige, and the (parascientific) level of utopia, necessary in order to provide the fuel that makes of science an ideology. Now, this overlapping is deeply strategic, indeed structural. If science and pseudoscience mingle, the fundamental mechanism of utopia is

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<sup>16</sup> Noble (1997); see also Schummer (2006) and (2009).

<sup>17</sup> For a better analysis of posthumanistic Gnosticism, see Allegra (2015).

consolidated: to abolish the reality principle thanks to the ability to move the boundaries of humanity elsewhere. Dreams can become reality - because the reality in which we live is *already* increasingly crossed by the construction of arbitrary and fabulous scenarios. Posthumanist ideology then expresses itself not only in the content offered, but also in its form.

This framework is by no means contradicted by the existence of tales, though less common, dedicated not just to refuting the optimistic narratives but rather to building an alternative and coherent apocalyptic fantasy. The oscillation between Heaven and Apocalypse functions in order to make it difficult to escape from the vision: the prospects of salvation evidently dominate, but one cannot neglect its disastrous reversal. Similarly, the narratives of Christ and Antichrist have an uncanny similarity, which is what makes the discernment of the Christians so important and arduous; or, the hopes of the Revolution slip, from the inside, into the abjection of Terror. As for posthumanism, there is not only the sharp criticism, fueled by hostile principles, of intellectuals like Habermas (2003) or Fukuyama (2002). At times disturbing visions are formulated even from within posthuman premises. The validity of the posthumanist prediction is not put into question: the advent of a different man is really plausible, perhaps imminent; but rather the sense, positive or not, of this advent. It is no coincidence that these concerns have been expressed by a novelist like Michael Crichton (2002), to exemplify the traditional literary oscillation between utopia and dystopia, and by a brilliant computer scientist and technologist like Bill Joy (2000) - the classic figure of the repentant shocked by the excesses of a revolution<sup>18</sup>. Specifically, their distress stems from the vision, which we have already mentioned, of a world of nanomachines out of control, capable of reproduction or replication until enveloping the Earth in a nightmarish 'gray goo'. The model of aseptic repairs is superseded by its opposite, in which organized life is submerged by an overwhelming chaos that can only increase itself exponentially. Self-replication and self-assembly suggest an out-of-control experiment, as in the sorcerer's apprentice story. The model is that of uncontrollable viruses or bacteria, as in the stories of secret laboratory research. Despite the commonplace, these views are taken seriously and are part of official documents as possible risks of nanotechnology.

The interweaving of fantasy, storytelling, metaphor, ideology, confirms its power for grip and fascination. What is difficult, caught between hopes

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<sup>18</sup> The well-noted biography of this author shows that these fears are not necessarily due to the usual humanistic diffidence towards technology.

of salvation and images of destruction, is precisely the task of demanding and dialectic intellectual reflection. Metaphor and narrative are useful, perhaps essential, to proceed in an innovative way to the transformation of theories, but the difficulty to break free from the subtle blackmail they contain is also confirmed: as if it were always impossible to think, even think otherwise, without adhering to a dogma – even though different from the previous one.

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