

The Soul of the *Golem*

Daniel H. Cabrera *Universidad Veracruzana*
and Universidad de Zaragoza

Abstract

There are many ways of interpreting the so-called 'new technologies'. One of the most interesting is that which stems from defining them as a social imaginary, and therefore, as collective beliefs, fears and hopes. It is common to attribute to technologies all manner of threats that, founded or not, are real in the measure that the society makes decisions and acts in a way consistent with this conviction.

The fears and anxieties of society lead to a consideration of the limits of the human that technologies transgress. Among the figures with which one speaks about these limits there is Frankenstein, the modern Prometheus, which threatens modern fantasies with its deformity. There is, however, another man-made creature that can serve to orient our reflection, the Golem.

In 1609, 400 years ago, Rabbi Loew died. He is credited with the creation of a homunculus by combining of secret codes. The problem of the Golem was its imperfect soul made manifest in its lack of speech. Its silent presence was a source of great fear in the community that finally asked to get rid of the creature.

These figures of monstrosity, Frankenstein and above all Golem, will help us to make technologies understand from the fear that society projects onto them, and this will lead us to the question concerning the imaginary fears of the technological system.

Keywords

social imaginary
new technologies
fear
monstrosity
limits

Modern technologies: unspeakable or destroyed?

In the summer of 1816, Mary Shelly conceived a nameless monster made by a Dr. Victor von Frankenstein out of electricity and body parts. Between 1811 and 1816, the workers movement of followers of the legendary Ned Ludd reached its pinnacle, destroying machinery in England. In the same decade, the most industrialized nation at the time witnessed the birth of two distinctive symbols of the modern imaginary that would accompany thought and reflection about technology and fear: a novel leaving nameless man's piece of work -the creature of Dr. Frankenstein has no name-; and workers destroying machinery which they viewed as an enemy. The fear inspired by these symbols is not a fear of God, nor witches, nor spirits but rather of the very product of the rationality and work of man.

The fear of technology constitutes as intimate an element of modernity as the idea of progress. Fear is the other side of the coin of

progressive optimism. Although it has been denied, exorcized as irrational and labelled as 'reactionary' or 'regressive', it is, for that very reason, a constitutive and characteristic element of modern times.

In its fear of technology, modernity manifests its hidden perception of technological progress. 'Neo-luddism' facing the 'digital revolution' and the 'anarchic-primitivist' philosophy are probably two extreme present-day reactions caused by the fear of technology, of which Theodore Kaczynski's letter bombs and his manifesto, *Unabomber*, constitute two of the most important milestones.

Modern technology represents an unparalleled power in the story of mankind. A power that drags human beings in a hurricane rush towards 'progress'. Modernity implies the dawn of new powers of human action: revolutionary political action; democratic power; the conquest of the planet; and, of course, the power of technology.

Of these, modern technology seems to concentrate all expectations, synthesizing man's unlimited possibilities. It's a new power as well as a new fear. The medieval power of God gives way before the power of modern technology; even though this new fear is not as new as it seems, since it appears to be weaved as a metamorphosis of man's ancient fear towards the products of his own hand. Thus it appears to suggest, among other things, the full title of Shelley's novel: *Frankenstein. The Modern Prometheus*.

Technologies: fear and the imaginary

Imaginarities of fear and imaginary fear are two ways to name the possible relations between fear and the imaginary. The idea of 'imaginarities of fear' may permit the elaboration of a typology of fear in its relation with technologies, as it results from the analysis of, for example, fiction (writings, audiovisuals, etc.), ordinary life (by deep interviews and other qualitative methods) and political action (NGO's, national laws, warnings from international organizations, etc.); or also through the analysis of non-fictional texts such as news and media broadcasts. In these cases, the analyst could make an interpretation of the collective fear of technology and compare it with other kinds of fears in other societies and cultures and with a history of fear.

This is an interesting path for a sociology of fear and, above all, for an interpretation of technologies through the perspectives of suspicion, mistrust and dread, but what interests me in this paper is a reflection on the imaginary component in the fear of technology. But what kind of fear is not imaginary? What is the imaginary component of fear? Is there any fear without an imaginary element? Fear, threat, and insecurity go hand in hand with the concept of the imaginary understood as horror towards emptiness, nothingness, towards a desert without references and a space and time without explicit boundaries.

Fear begins, not with the darkness which the child dreads, but with the absence of referential images (mental, metaphorical, etc.) to clarify the meaning of what is being seen or being imagined without knowing if it exists or not. Fear emerges when the closures of the social world (those internalized during individual socialization) do not provide certainty and safety. Thus, what should be considered

first are the threats – whether real or imaginary – that technologies represent for the constellations of sense for the society. These constellations are defined as the group of beliefs, yearnings, expectations, wishes, etc., that regulate and legitimate a certain social order. When a threat is identified and made visible, the symbolic closure of a culture shatters, exposing its imaginary foundation.

‘The phantom menace’ constitutes one of the most famous military metaphors produced by the film industry in the last third of the twentieth century; war is always justified, at least by its promoters, as a threat that functions as long as it’s imagined and believed by everyone. The ‘phantom menace’ destroys human bodies and its societies because the interpretation of a situation causes the action. Those who control fear, control those who are fearful. From magical and religious powers to modern technocracies, political power has found the key to dominion in the politics of fear.

Every child usually has a sensation of fear that comes from an unknown source of noises, usually in the darkness of the night – in the fields, in a new home, etc. – in which stalking monsters project themselves. The advice of grown-ups, not always effective, consists of ‘turning the light on, looking around, and confronting’, so that the alleged monster is seen for what it is – the moving branch of a tree behind the window. Illuminating and looking become ways to lose or face fear. In society the right information could, and should, fulfil similar functions, but history has shown that it is not always so.

Contemporary technologies, in the midst of the complexity of their mechanisms (technical, cultural, etc.) are, as the branch in the children’s night, a factor of fear, but, unlike the tree shaken by the wind, all light shed by technology increases miscomprehension of its persisting concealment. The veil of the mysterious is not just a consequence of its complexity, it’s also the effect of its symbolic centrality for contemporary society, converting it in the shade of its fantasies, dreams and cravings.

Even though the ghosts that haunt the nightmares of societies, and which are frequently expressed in the fictional world of motion pictures, may be pure fantasy, the real fear and its consequences are, most of the time, very real. History shows that fiction is ahead of reality and that reality always supersedes fiction in seriousness.

Technologies as social imaginary

In speaking of technologies, what I’m referring to are modern technologies, particularly those of information and communication. For the sake of brevity I’ll refer to them as ‘new technologies’ or just ‘technologies’ so as to clearly show their distinctiveness as empty words that nevertheless designate a set of machines, software programs, institutions, etc. What I am interested in highlighting in the use of this empty phrase with no fixed reference – ‘new technologies’ – is that it constitutes the symbolic node of the ‘*telecommunicational imaginary*’ by which the so-called knowledge and information society is nourished. “New technologies” is a empty name that has multiple and indefinite meaning that permits the projection of different devices and, of course, diverse fantasies.

In another work I have defined 'new technologies' as 'the heterogeneous set of devices, institutions and discourses' (cfr. Cabrera 2006a: 153–161). Heterogeneity refers to an external stratum constituting a conglomerate of various gadgets, institutions of very different origins and fragmented discourses of varied levels. That is why the ideas of 'convergence' and 'integration' acquire special relevance, not only in a technological but also in a symbolic way. What is most important is that this heterogeneity supposes a more radical level, in as much as new technologies constitute a social-imaginary institution. They do not just respond to human 'needs', they are not strictly 'functional'; there are no previously defined needs that they aim to satisfy. The very definition of 'needs' is already an answer to the human capacity to grow. Technologies base themselves in the real world but are not its necessary consequence.

The imaginary institution of modern technology is made manifest at the limit of 'technological rationality', in the imperative that regulates scientists' and technicians' behaviour and logic – and along with them those of politicians and businessmen: 'what can be done will be done'. The simple availability of technology makes it our duty to use it. The course of action becomes necessary because 'if I don't do it (scientist, enterprise, nation, etc.), somebody else will'.

A rational and realistic person, company or country experiences 'technological progress' as something necessary and binding. Any other attitude leads to an 'idealistic' or 'romantic' stance, interpreted as one that is unrealistic.

As a social imaginary, new technologies can acquire the status of an institution depending on the existing conditions of possibility, existence and representation of sense of a concrete society. To interpret technologies is to understand the conditions that have made possible a specific heterogeneous complex and no other; that have allowed a concrete reality to emerge and no other; and that have set a certain meaning and no other. As imaginary institutions, technologies are not only a collection of 'technological advances', they are a jumble of representations, affects and desires by which society understands, feels, thinks, lives, compares and projects itself.

Defined in this way, technologies constitute the centre of an interpretation of the human condition in a society that dreams, defines and calls itself a society of 'knowledge' and 'information'. Fantasies refer to those names and images, but also to their fears and cravings. For this kind of interpretation we will have to take into account the matrix and patterns of the imaginary of Judeo-Christian, Greek, western and European societies.

Technique as a monstrous creation

The creationist imaginary widespread in the West finds its origin in the divine creation of the universe. Human action stands as a secondary creation before it, both chronologically as in importance. True creation belongs to God. It's man's role to 'uncover' its beauty, truth and usefulness. He can also 'mix up' and 'combine' the elements in order to obtain something 'new'. Over this creationist

imaginary lays a burden of obligation and guilt: the obligation to continue God's creation as a divine call. This does not imply imperfection of the world, but a complementation between that which is given and the co-creationist task of the creature. Thus, human inventiveness 'un-covers' and 'reveals' what, in a certain way, was always already there. Man's action brings into being the potentialities of God's creation – potentialities that he must realize through his action, that is to say, make real. This obligation entails a prohibition: do not act capriciously and with autonomy, do not pretend to be like God, carrying out human creativity on a whim. Creation and creativity are divine attributes, when man follows nature's encrypted patterns he becomes its collaborator and co-creator.

In this imaginary, human creation stands always second, confined mostly to art, the sphere par excellence of divine inspiration. Until very recently, technique and technology were mostly considered only as means to solve problems and needs through the combination of elements. Owing to this, the prohibition that weighs on free creative human action transformed fears into myths about the monstrous character of technological work. The man that whimsically exercises his capacity of technical creation risks the apparatus turning against him. The autonomy of creative human action is punished with the increasing autonomy of technological work that, in the long run, turns against its creator, even to the point of threatening his own existence. Creative man is only capable of producing a monster – a second-rate creation – that sooner or later will turn against him.

Fear and monstrosity: the limits of action

Etymologically, the word 'monster' means 'prodigy' and, as such, refers to the will of the gods. This prodigy designated something confused and deviated and was seen as an aberration; it is fantastic and because of that an aberration. The relationship between fear and monster seems to come from the fact that the latter dwells in the imaginary, embodying man's worst fears and thus becoming his worst enemy.

In this sense, it's interesting to remember that the noun 'monster' comes from the Latin *monstrum*, 'divine portent or warning, monster', from *monere* 'warn' and the Latin verb *monstrare*, 'to show' (OED Second Edition): '1. be, allow, or make visible. 2. exhibit or produce for inspection or viewing. 3. represent or depict in art. [...] 5. demonstrate or prove. [...] 7. explain or demonstrate something to'. And also the verb *demonstrare*, 'demonstrate' (OED Second Edition): '1. clearly show that (something) exists or is true. 2. give a practical exhibition and explanation of. [...] 4. take part in a public demonstration'.

Today monstrosity has two connotations: aesthetic, according to which monster means deformation and disproportion, and moral, implying a hidden evil in man. The monster shows the existence of wickedness within man. Man's monstrous products bring to light his inner deformity and disclose as otherness that which is his own. Consequently, they exorcize evilness and discharge fear and guilt in something alien to the human community.

There have always been monsters, but the genre of horror literature is a product of the Enlightenment. There is an inner malevolence that comes out and frightens; this sets limits that should not be crossed. Monsters embody prohibitions and fears, becoming guardians of 'non-plus ultra' technological action. The monster is man's 'other' – an 'other' locked up within him, but that cannot be experienced as something existing in oneself. This seems to suggest that technological artefacts constantly become man's mirror: a mirror reflecting a crazy and out-of-control omnipotence.

Technology is man's product and, as such, has something human in its heart. The machine is born inside man and holds a sign of its own; its relation with man begins in man's own inside. Technique makes manifest the possibilities of human action; its monstrous aspect probably comes from fear of what it might reveal. It offers man other possibilities, making him more powerful. He feels more potent and thus begins to fear himself. The potential unleashed by technology hinders the possibility of predicting its outcomes, effects and consequences, from the moment man creates to lose control over its creation. The technical oeuvre opens a new world that can never be completely predicted by its creator. The mere presence of the artefact produces a situation almost unknown to his maker. That is why no creation is complete without its appropriation and use. But what the use of the artefact manifests is already present in its technical being. What is present is man himself as a non-practical creator, that is to say, a creator that takes no account of means in relation to ends or of meeting necessities. The man that is manifested in technical creation is not practical; this can be seen in the multiple 'accidents' and 'coincidences' from which his 'inventions' and 'discoveries' are born.

Fear and monstrosity: technology as a source of fear

The naive view of techniques and technologies conceives them as a series of inventions and discoveries made possible by the development of human rationality as man faced the problems posed by his adaptation to the surrounding world. But when we analyze the history of modern technology and its significance things appear under a whole new light. Modern technology does not come from its medieval counterpart and neither is it an extension of it; it answers much more to such things as witchcraft, magic, alchemy and astrology. These constitute the background of modern technique and it is in them that we must search for its meaning. They all, witchcraft, magic, alchemy and astrology, imply an exploration of the limits of human creativity within the vast domains of the imagination.

History shows that in the Middle Ages technique was not part of established knowledge. In a world where contemplation was all that mattered, technical activity was a regulated craft, but it was not considered a domain of knowledge. It is no wonder that there are almost no historical references or popular myths about technologies threatening or striking fear among people. Fear in popular fantasies had to do with magic, alchemy and witchcraft; or, at any rate, with 'others' such as the Jews, the Moors, heretics, etc. The combination of

odd practices with 'strangeness' or 'otherness' puts its practitioners at the centre of attention and placed them under suspicion of diabolic performances: use of human fluids, dead animals, orgies, etc. It's no wonder either that these kinds of accusations were used as 'arguments' in persecutions of these others. Collective fear had clear and coherent references in the imaginary of the time.

In this context, the relationship of the Jewish Cabbala with alchemy and magic must be highlighted. Medieval magic and alchemy shared some important principles with the Cabbala, forming at the time a corpus of certain coherence and great importance. Within this framework we must interpret the legendary figure of the Golem as a symbol of technology (see Idel 1996).

The Golem is a Jewish classic from the times of persecution, when Jewish religious elements came in close proximity to the practices of magic and alchemy. There is nothing new in emphasizing some of the important overlaps between alchemistic and cabbalistic elements, such as the hermetic principle 'as above, so below; as below, so above', or, most of all, the importance of the human word as a revelatory of divine secrets.

Today, the Golem is something acknowledged but not necessarily known. Its modern fame dates from the eponymous novel written by Gustav Meyrik and the motion pictures of Paul Wegener, of which we know the 1920 version. Gershom Scholem interpreted it in the context of the Cabbala. Borges took it up among other writings in *Handbook of Fantastic Zoology* (1957) or *The Book of Imaginary Beings* (1967), as well as in a beautiful poem (*The Golem*, 1958). A black Golem is a character in the popular movie *The Santo and Blue Demon against Dr. Frankenstein* (*El Santo y Blue Demon contra el Dr. Frankenstein*, México 1973, directed by Miguel Delgado) about the famous Mexican wrestling idols; it also appeared in Marvel comics as a Warsaw Jewish defender against the Nazi invaders; and it even appeared in the fourth episode of *The Simpsons'* eighteenth season (*Treehouse of Horror XVII*) – the sequel to which was called *You gotta know when to Golem* (an image taken from a Wegener film). The Tel Aviv newspaper *Yediot Ahranot* publishes a very popular Uri Kink comic named *The Golem: The Adventures of an Israeli Superhero*, reflecting the irony, contradictions and complexities of his country's society.

On the other hand, there is no guidebook to Prague that doesn't mention the old Jewish cemetery where the grave of Rabbi Loew – the creator of the Golem – lies, and his old synagogue, where the room which was forbidden to be opened for fear of liberating his remains is still sealed. But then again, this is the same city that organizes a film festival that bestows the '*Gold Golem*'. Even though these references are not exhaustive, they give an idea of how popular the figure of the Golem has become and warn us, today more than ever, to be careful when mentioning it.

To clarify the place of the Golem in the Jewish world, the quotation already cited from 'The Idea of the Golem' in *On the Kabbalah and its Symbolisms*, by Gershom Scholem (1960) is fundamental. But concerning its relationship with technology, the famous 1964 essay of

Norbert Wiener, *God and Golem Inc., a Comment on Certain Points where Cybernetics Impinges on Religion*, is of the utmost importance.

In this little book Wiener considers, in some detail, the social consequences of cybernetics, particularly those concerning the relationship between science and religion. In this framework three issues stand out: learning machines; self-reproducing machines; the coordination between man and machine. The answers to these very much take into account the story in Genesis of the divine creation.

Man makes man in his own image. This seems to be the echo or the prototype of the act of creation, by which God is supposed to have made man in His image. Can something similar occur in the kind less complicated (and perhaps more understandable) case of the nonliving systems that we call machines?

(Wiener 1964: 29)

Is technology made in its creator's own image and likeness, just as man is made in God's? Wiener's answer is yes: man is able to create a machine capable of creating machines. What is a machine for Wiener? 'For us, a machine is a device for converting incoming messages into outgoing messages. Thus the machine may generate the message, and the message may generate another machine' (Wiener 1964: 32, 36).

For the idea that God's supposed creation of man and the animals, the begetting of living beings according to their kind, and the possible reproduction of machines are all part of the same order of phenomena, is emotionally disturbing [...] If it is an offense against our self-pride to be compared to an ape, we have now got pretty well over it; and it an even greater offense to be compared to a machine.

(Wiener 1964: 57)

Herein lays the problem of Creation, putting man in the place of God, as creator of a creative creature – an activity comparable only to magic, the alchemy of transmutations, or even sorcery. More than forty years later, Wiener's essay is still even more accurate in its limits and possibilities. Nevertheless, in terms of social imaginary, the creative machine – in man's own image – is alive and kicking, haunting the dreams and insomnia of society.

Golem vs. Frankenstein and the new technologies

In my opinion, the Golem is a more adequate metaphor for understanding new technologies than the story of Frankenstein's monstrous creation. The nameless creature of Dr. Victor von Frankenstein implies a technique uniting separate parts that attain life through the use of electrical energy. This image may be useful for mechanical pre-digital era technologies, before computers made possible Leibniz's dream and made feasible his binary system: a universal code into which all existing things can be translated, an exact binary code to which everything can be adapted, translating its 'reality' to zeros and ones. Ever since genetics began speaking of the 'code of life', with its language and

coding, the same metaphor sets out to manifest technology's *raison d'être*. It's not only a question of the power to translate, but also of the power to create, Wiener himself warned. Find a code and the possibility to manipulate it, thus converting technologies into a second reality: cyborg, virtual reality, electronic simulation, etc.

New technologies are aiming to create the Golem. Not a being made out of body parts, as Frankenstein, but out of the river's fertile soil. Every day technological materiality produces new prototypes, every day it overcomes new obstacles, but the 'code of life' still does not achieve speaking autonomy and thus creative intelligence. The key still seems to be in a software capable not only of making a machine work, but of giving it autonomous life, making it in man's own image and likeness, like creating like.

The cabalistic problem concerning the clay homunculus was to find the key to bring it to life, to vivify it and make it autonomous. The Golem, as an amorphous entity or sheer matter, claimed with its presence the search for the 'code of life', which like the divine breath would grant the mystery of life. The Golem is not made out of parts – a word can either give it life or take it away and send it back to dust.

Frankenstein vs. the Golem represents the dispute between mechanical and digital metaphors: on the one hand, there are technologies dealing with visible and unified parts, establishing effectiveness by similarity physical mechanics (stepping down is braking, the turn of the wheel is moving forward); on the other, a materiality functioning with an invisible effectiveness that appears as magic to the user's perception.

The horrors of the twentieth century made it clear that technological achievements connect with evil in an almost mystical way. Technologies are not just instruments or tools in the hands of evil people, as can be, for instance, a knife or a gun. In themselves, they constitute a way to face the world, to deal with it, to look at it and define it.

Several humanistic perspectives add to this idea of technology as a socio-technical system, where apparatuses carry their own social and cultural origin. In consequence, technological craft is seen as enveloped by evil. And, deep down, man is thought to take the place of God through his technological skill, as in the biblical passage of the Tower of Babel. Thus, moral and political appreciation of technology seems to function within the technological imaginary, as if it were a challenge to God with man trying to take God's place, putting himself in the place of the creator. In this way, creation is perceived as an evil post-Eden ground. To think about creation outside the imaginary that perceives man as a secondary creator constitutes a real challenge for a rigorous thinking about technological innovation.

It is very difficult to consider technology outside the imaginary of the Judeo-Christian divine creation in which man is seen as artist, sculptor, builder, but not creator of technology. Technological creation implies a sort of Faustian bargain, and the price to pay for those who engage in it is the weight of guilt. There has been no great inventor or scientist that has not believed himself to be a messenger of God or as a divine instrument for the development of true values. (I'm not

referring here to the divine instruments of the Justice of God in the Muslim world but rather, for example, to the scientists who took part in the Manhattan Project, during and after World War II.)

Wiener calls those passionate scientists and technicians who redirect their worshipping attitude to God towards artefacts 'gadget worshippers'. These 'worshippers' revere machines since they are not restrained by man's limitations, such as tiredness, laziness, lack of accuracy, etc. That is why 'gadget worshippers' entrust machines with complex decisions requiring objectivity. According to Wiener, these gadget worshippers 'go beyond a legitimate curiosity and are sinful in themselves' (Wiener 1964: 53).

Nevertheless, my intention is to point out the role played by 'God worshippers', not in the literal sense of the expression, but symbolizing the ethical attitude of condemnation towards technology. Behind technology's pessimistic evaluation lies the guilt of having replaced God as creator, of having become autonomous. The occidental creationist imaginary encloses a reflection that might emerge from other perspectives. In this sense, Wiener maintains that:

As long as automata can be made [...] the study of their making and their theory is a legitimate phase of human curiosity, and human intelligence is stultified when man sets fixed bounds to the curiosity.

(Wiener 1964: 53).

Are there limits to scientific and technological curiosity? The extreme stand point of the 'gadget worshiper' is clear: the technological imperative is the only limit – that which can be done will be done – but is there some middle ground between this point of view and extreme Luddism?

Modernity launches the era of territories without warnings. Through its assertion, the 'non plus ultra' becomes an imperative to observe in order to acquire knowledge and to know in order to dominate. In Rome's ancient maps there would usually be an inscription reading *ubi leones*, as a warning against crossing the limits. Similarly, illustrations of monsters on ancient maps signalled where unknown seas. With modernity comes a map without limits or monsters and since Magellan's and Elcano's global voyages, territories are represented on a sphere, symbolizing that which is perfectly defined and contained within itself.

The Golem is a metaphor for prohibition, according to which the technicians' effort to attain perfection in his craft will always be considered futile or, at least, useless. In this situation, technology will always be interpreted as a secondary creation, the product of a creature having the chance to act autonomously but with imperfection.

As such, technology will not be able to create; as in the case of hybrids, it will be incapable of procreating. The inability to conceive is the mark of identity of the products of human labour in the creationist imaginary. Within this framework, procreation is reserved only for the Son, the 'true' image and likeness of man.

Fear of technology is provoked by the possibility of its independence, by the risk that it may turn against man, and furthermore, by the

chance that man's creation may be able to create, in turn, a different world. God created man and placed him in a garden, and, through his twisted work, man created another space, that of exile. Technology, as a work of man, creates its own world, and just as God lives shut up in his garden, man could live in the prison of the technological world. Technology, insofar as it has something of man in it, constitutes the existential space to which man has to adapt himself.

Paradise and exile: the *soul* of technology

Fear consists in the image of an autonomous work turning against its maker and, just like Adam and Eve, escaping from the hands of its creator. The solution consists in the creature's exile from a pleasant world to a hostile one. In the harmonious setting, creature and creator walked together at 'the time of the breeze'; in the hostile one, they cannot find each other because, in a certain sense, in the story of Genesis the exile of man is, at the same time, the exile of God himself. That which was harmonious was the world where they could both walk together, the very same world that ceased to exist as a result of man's autonomous work.

Fear of technology comes from thinking that man's exile from the 'world of the machine' is possible; unions' fears about workers being replaced by new machines and industrial processes are the visible surface of a different and much greater fear. It's not about the replacement of workers on the production line, but of a change of territory. With technology a new space comes into being, a hostile world bursts forth where once there was harmony.

But this situation cannot be interpreted as a 'fear of change'. It is not a matter of some mutation, but of the transfiguration of a reality in tune with the creator, to one in tune with the creature. Here we find something that connects up with Luddism's profound heritage. When machines are destroyed the real object of the destruction is not the machines themselves but the world created in their image. It's not about a fear of being replaced or fear of change, but rather the consciousness that an unfriendly world appears as a horizon of exile. The world cannot be predicted because it does not necessarily obey a scientific logic, nor can it be submitted to an 'impact study'. The new world's laws are only predictable in the short term, not in the mid and long terms, where technology really manifests itself.

Prediction of technological impact is always partial and cannot identify its own impacts. Technology has tattooed all over human's inability to predict their action. As Ellul (1954) puts it, technological rationality is blind because it is human. The supposed ends to which technology responds are no more than the inaugural moment of its presence. In its development, technologies constitute a space of rationality in the midst of an ocean of meaninglessness. Even if a certain technology has its own objectives and seems to respond to a justified need, the technological system as a whole does not seem to be inspired by any goal or necessity.

Adam, a Golem in the hands of God, received the vital breath, the Divine Breath. The Word created its world. Rabbi Loew's Golem

depends on a key word, on a secret code to bring it to life, but man, due to his creatural nature, can only give a secondary life, without the ability to speak. The tradition of the Golem clearly states that the problem with man's work – technology – is the key of life, not its materiality. The code of life, the creative word, the vital breath; this is the technological problem.

The human body has just been deciphered into three thousand million 'letters', which, depending on how they are combined, result in an enormous variety of living forms: bacteria, monkeys, men, etc. If today we're able to 'read' that, it's perfectly possible that soon we'll be in a position to create life, just as if it were a matter of pronouncing a sentence. The digitalization of reality, through the computerized manipulation of the genetic code, suggests that we are facing the possibility of a computer 'delivering' the 'key combination'. Technology would finally be able to 'un-programme' the 'flaws' of the human body and, above all, to 'programme' a new being. A universe reduced to a binary code would permit technologies to listen to the divine word and repeat it without imperfections, thus being able to create to God's own image.

A possible challenge to technological thinking does not come from the divine punishment imposed on Prometheus, as *Frankenstein: The Modern Prometheus* story suggests. The fear of technologies was modelled within the Judeo-Christian creationist myth. What conclusions can we reach by replacing God with man and man with technologies in the first eleven chapters of the Book of Genesis? The challenge is to interpret the fear of technologies as a feeling experienced towards man's own abilities. It is no longer a matter of thinking of technology as a Golem, an imperfect homunculus, but as a 'human being' made in its creator's own image and likeness. The perspective opened by this point of view could be a desolate one, not only because it would give way to an ethic of artefact worshippers, but mostly because it would mean accepting that we are alone, both in the space-time of the universe and in the cosmos of meaning, and devoid of any other reference besides the one we ourselves create and believe.

Fear of technology's autonomy constitutes a suspicion of the possibility that machines can attain their own principle of life. The problem of the Golem is the problem of his soul. As long as his breath comes not from the Divine Creator, but from man, his co-creator, the Golem will remain clumsy and imperfect; and its presence will constitute a threat to the neighbours of the technological vicinity.

What does the technological system fear?

If the subject of fear of technologies concentrates all the interest for literary and cinematographic fiction, there is another topic of which we can only be aware by reading between the lines of the actions and discourses of businesses and governments. What do technologies fear? What do technology companies and the countries where they do business fear?

We can find a clue in the Borges poem *The Golem*, where Judah Loew, a Rabbi of Prague, questions himself when facing his imperfect work:

The rabbi looked upon it with tenderness
and some horror. *How* (he muses)
could I give birth to this pathetic son
and abandoned inaction, which is sanity?

(Borges 1984: 261–263)

As systems, technologies seem to be afraid to ‘stop’ and ‘look behind’. New technologies are inconceivable without a certain belief in progress, in looking forward and quickening the pace toward a future that we are convinced is better. The political and entrepreneurial system of new technologies fears the vanishing of the faith in progress. Some kind of blind conviction in the future is necessary for new technologies to be possible. Up until the dawn of the twentieth century this conviction was called ‘progress’; then, after World War II, it was referred to as ‘development’, adding here and there different adjectives such as ‘sustainable’, ‘integral’, ‘economic’, etc. Looking towards the future, looking ahead, trusting everything will be for the better, constitutes unquestionable elements of the faith by which technologies are possible.

Consequently, without a sector committed to the production of collective beliefs and hopes, the technological system would be incomprehensible. Marketing and communication are among the key elements in the construction of the faith in new technologies. However, considering them merely from a behavioural perspective – such as their role in promoting or researching consumer habits – does not help in attaining a correct interpretation of the part played by marketing and communication in relation to the new technologies.

Marketing is the truth, that is to say, it’s the activity of ‘conquering consumers minds’ and entails the conformation of the representations, affections and wishes of a technological society. In this sense, the sources of fear arise between that which is not said and that which is denied: stop looking ahead, lose speed, look down, etc. New technologies are impossible without society sharing some kind of belief in progress. Losing that faith and hope represents our utmost fear of the technological system.

Neither Rabbi Loew’s Golem nor Dr. Frankenstein’s monster have a name. New technologies have always held the undefined and unlimited as an open field of metaphors. The great challenge for the promoters of new technologies lies in stimulating the imagination of the possible users and consumers and in finding new appliances and uses for them. There is a recurring demand on the part of technicians and researchers for the removal of legal, budgetary and other limits in order to ‘freely exercise’ their right to do research without restrictions.

The absence of limits is the only territory for a creative imagination. Nevertheless, it also represents the ground where it can be most easily forfeited. In that endless desert of technological imagination

fear arises as a means of survival: do not return, do not sink, just look forward and walk as fast as possible. These seem to be the unquestioned limits of the techno-scientific system. To look behind, go back, look down or slow down equals returning to prehistoric times. If someone dared do it, he would be branded a neo-luddite, as an enemy of technological progress, a fool incapable of facing 'reality'. This is something that needs to be thought over because new technologies are unable to think of themselves without any reference to progress, advance and speed.

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Contributor details

Daniel H. Cabrera has published numerous articles in scientific magazines, and is the author of *Lo tecnológico y lo imaginario. Las nuevas tecnologías como creencias y esperanzas colectivas* (Biblos, 2006). He has also coordinated *Fragmentos de caos. Filosofía, sujeto y sociedad en Cornelius Castoriadis* (Biblos, 2008) and *Anthropos Magazine*, number 225, 'Walter Benjamin, la modernidad como ensoñación colectiva' (2009).

Contact: Periodismo – Facultad de Filosofía y Letras – Universidad de Zaragoza, C/Pedro Cerbuna 12, Zaragoza – 50009, Spain.

E-mail: danhcab@unizar.es

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