

KNOWLEDGE AND CREATIVITY IN DIGITAL SOCIETY

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Abstract

This work deals with the topic of creativity understood as a complex path carried out along all lifetime and that cannot be attributable to the mere accumulation of concepts. The changing social scenario promotes the dimension of the possible, the nonlinearity, the overcoming of pre-established trajectories of knowledge by triggering processes of meta-knowledge and meta-representation, a dimension in which the creative mind finds a breeding ground.

The work explores the relationship between technology and creativity in consideration of the peculiar segment, the artistic one, where with greater evidence the work of the creative is unfolded.

Keywords: creativity, art, digital society, knowledge.

Introduction to the creativity in the web meanders

Framing the question of creativity proves to be quite arduous from the outset. The very idea of trapping the essence of creativity in a rank burdens and impoverishes the existential meaning of creativity; in the same way that the uniqueness of the human being cannot be trapped in a standard definition applicable to all mankind; and this is what lays at the basis of creative processes and that confers uniqueness to the human creation.

When defining, we surely trace out a boundary within which to understand and for which it is possible to exclude; within that semantic space we condense an idea, give expression to a certain word, in the small nucleus of a meaning, we hold the essence and the form of things; but at the same time we lose the essence of the Socratic question, his permanent state of exigency that makes us incessantly investigate, that does not allows pause to the questions and insistently comes back to ask and wonder about the nature and reason of what exists.

While not wishing to give creativity a unique interpretation, our scientific reference is based on the description provided by Silvano Arieti.

He offers an analysis of the different aspects of creativity by considering it not only as an extraordinary quality, but as something that each person possesses in different ways. An overdeveloped intelligence does not favour the expression of a creativity that often requires, however, a lack of respect for pre-existing rules, «a great ability to deduce according to the laws of logic and mathematics generates disciplined thinkers but not necessarily creative people» (Arieti, 1969).

Arieti makes a distinction between *ordinary creativity*, the one that is expressed in the everyday life and allows to dynamically resolve issues that arise in life, and *extraordinary creativity*, the one that allows the creation of new paradigms and promotes processes from which derives the improvement of everybody's life and that generates progress.

Within this vision he identifies three distinct forms of thought: a primary, secondary, and tertiary one. The primary thought would be more exposed to the instincts and impulses of the unconscious; secondary thought, instead, would be affected above all by the rules of the Self and its transactions with the world; finally, the tertiary thought would be the result of the balanced synthesis of the first two ones and it would be the most responsible for the creative production (Arieti, 1964). The magic of the creative synthesis lies in the fact that the tertiary thought allows primary materials to emerge suddenly, but it also demands a higher dose of intentional and conscious activity so that those materials can be properly handled and become unique models.

Intelligence and creativity would interact in a continuous mixing up among the relationship between the exterior and the interior of the subject in a dynamic genesis.

Creativity is a continuous research and an incessant desire to discover the outside world and the most intimate and self-related one. «Most of the time, people live in a non-creative way as if they were pent-up in someone else's creativity or in a machine» (Winnicott, 1973). Creativity is universal; it belongs to life in all its expressions: physical, mental and social.

In contemporary society any discovery or innovative idea can be easily spread thanks to the telematic technologies that allow an immediate diffusion of any event. Within this media framework the creative sui generis not only can spread his genius but he must also give a sort of "immortality" to his creative genius or, just as it easily happens in the information society, he will be overshadowed. Especially if it's a false creativity, since each form of creativity must possess a strong sense of discipline and control to generate ideas, thoughts, theories and products.

Therefore, creativity means also research; it is a natural desire to give a new aspect to knowledge and the vision of things and life.

In the era of globalization, which has crossed the old borders with the spread of the internet, the thought is subject to a further change. The New Web has caused us to have a plastic and changeable behaviour. Assuming that the technology is everywhere, «As the most powerful force in the world, technology tends to dominate our thinking, it monopolizes any activity and questions any non-technological solution as unreliable and impotent» (Kelly, 2011, p.27).

What predominates in this vision is the network of global connections, or better, the "technium": a biological entity; the «technium wants what we design it to want and what we try to direct it. But in addition to those drives, the technium has its own wants. It wants to sort itself out, to self-assemble into hierarchical levels, just as most large, deeply interconnected systems do [...] to perpetuate itself, to keep itself going» (Kelly, 2011, p.34). It's the human activity that determines the transformation of this system of synaptic connections because, «each time we forge a link between words, we teach it an idea [...] but each time we click a link, we strengthen a node somewhere in the supercomputer's mind, thereby programming the machine by using it» (Kelly, 2011, p.75).

When we search on the internet, the web page at the top of Google search ranking is nothing but the result of a trip across the entire network. The trajectories suggested by millions of links follow the pathways of knowledge and it is the result of millions of researches on that same topic, millions of minds have helped define that "path". So we can say that the sense of identity through the "story" we build together with the other, and that both are in constant evolution. Although sometimes the network allows us to be anonymous builders, as in the case of Google, some other times it allows us to be absolute protagonists.

The choice is up to us, the first step is to develop the awareness to understand that there are different possibilities of expression and participation and that this parallel and intricate world

created by the Internet may be a possibility that should not be underestimated or lived superficially, because in every click there is a part of us that instantly spreads on the Web.

The ways of the diffusion of knowledge have followed impervious routes but, through the technique and technology, they have been able to reach out and embrace the entire planet.

From the monasteries of *Il nome della Rosa* we have moved to the garage of Page and Brin, from the amanuensis to the web writers, from the book to the eBook, from the material to the immaterial; «the knowledge that more matters is the one that is able to enter in sequence with all other knowledge. There is hardly another criterion of quality, and even another one of truth [...] the density of the sense is where knowledge passes through, where it is in motion: all the knowledge, nothing excluded. [...] The essence is a beautiful idea that is dying: it is replaced by the instinctive belief that the essence of things is not a point but a trajectory, it is hidden in deep but it is dispersed on the surface, it does not lie in the things, but unbinds itself out of them where they really start, i.e. anywhere» (Baricco, 2008).

We are in the things we produce, in the things we do, in the books we read, in the mail we send, in our relationships, in the people we spend time with, in the profiles we create and it amplifies our body, it projects our minds well beyond the material borders; we are a “network of relationships”, we are “moving beings”, who knowingly or unknowingly let themselves be carried away by the stream, we are here and everywhere.

Creativity is related to the innovation ability and it is embedded in strategic skills to promote personal and social development.

Furthermore instruction, training and education keep out, for their own nature, the idea of preservation and they can't help living on future, planning and dynamisms. Talking about education it would be a losing attitude just focusing on techniques and tools without caring about processes and dynamisms first of all. The processes and dynamisms must be taken into the right account neither to justify particular aims or objectives nor to validate specific techniques and procedures, but to organize educational paths and experiences.

Facing the matter of creativity cannot exclude the analysis on how the processes of knowledge are determined, that is why we consider the most appropriate thing to analyze the most significant aspects intervening in “the building of the creative mind” through the dimension of art and technologies.

Art as a process event between techniques and creativity

Philosophy is strongly permeated by the reflection of the role of technology in the construction of Western culture and more specifically in the “determination” of the path of art. At this point, it seems necessary to ask whether in the field of science, the human creativity still plays its function once again or it is the same technique that reproduces itself by leaving man the only art in which to “freely” express its creativity.

Rooting its foundations in Hegel's thought before and in Bergson and Croce's one after, both Weber and Heidegger have showed how true creativity comes to reside in art and not in science since «the scientific representation can never enclose the essence of nature because, from the outset, the objectivity of nature is just one of the ways in which nature appears. Nature remains, according to the physical science, the undeniable» (Heidegger, 1953); this because the domain of technique, since it's unchangeable, has caused the disenchantment of the world and has built «an era without God and prophets» (Weber, 1976).

The technique, through science, kills creativity and autonomously reproduces itself, for example the radio will promote the creation of the black-and-white television and this will cause the colour television to become the flat-screen television, which will evolve into the digital television and so on. That's the same evolution for the graffiti writing, the wax tablets, the manuscript, the printed book until the dematerialization of the net writing.

According to Nietzsche, in fact, the attempt to systematically categorize the real destroys the life strength of every man and only the power of art will be able to set the mankind free from the oppression of rationality, by allowing the individual to express his/her creativity in a world that tends to destroy it.

The technique shows more and more that it's not a result nor a product or an application of science, but it develops science from its inside and makes use of it to affirm itself and art by incorporating technologies (in particular the media) and it does nothing but revealing its true face, that is the aestheticization of the technique.

It seems we can say that if science has removed, thanks to its references to the pure knowledge, its roots in the technique and art has removed its technical-factual origins by developing with the symbolic and the spiritual, it actually strongly re-emerges the logic of the technique and its technologies which are, at the same time, pragmatic and aesthetic. A supreme metaphor of this reflection is incorporated from the design of the objects that show us the strong and final fusion between art and technique.

It is obvious that if Nietzsche would be wrong the margins of intervention in the domain of creativity would be quite crushed, in the age of "mature technology", but another interpretation is possible if we follow the tracks indicated by researches like Zola¹ (1880) who applies the methodology of science to art; or René Ghil² (1909) who develops the "instrumentalist" theory of poetry by using the harmonic theory of the German physicist Hermann Helmholtz; or also Mondrian who theorizes a neo-plastic transmigration; and Gabo³ (1920), who explicitly introduces, with the constructivism, the scientific spirit in art with the *Manifesto of Realism*.

According to Nietzsche, the technique involves the attempt to a radical rationalization that, in doing so, sees the triumph of Apollo, the God of rationality, at the expense of Dionysus, the God of "the feasts, the tragedy and the creativity". The release from deception brought by the "apollonian" rationality to reach the truth, thus the knowledge will be unmasked by the myth, poetry, music, dance, the pleasure of creativity.

Feyerabend says: «No theory ever agrees with all the facts in its domain, yet it is not always the theory that is to blame» (Feyerabend, 1984).

The choice of a rational knowledge is completely abandoned in favour of a creativity released from the links of the rationality and method.

This process involves the identification and enhancement of methods and procedures to be adopted from time to time in accordance with the principle of tenacity and the one of creative growth.

In his elaboration concerning knowledge, Feyerabend considers absolutely necessary not to use "the method of science" since the research must make use of investigative practices and as many unorthodox "trickeries of the reason" as possible; only the creativity, the imagination and the deviation from the obvious and the "reasonable" that allows new discoveries and knowledge by ignoring, in this way, a method that contains immutable and binding references.

If we just think about how artists, creative people par excellence, were regarded in the Roman and the Greek Age, from then on there has been a deep reappraisal of the artistic genius, particularly since the Renaissance period, when artists were taken into the greatest account both from the political and from the clerical world (Kris & Kurz, 1980).

Obviously the aesthetic, divine, platonic and metaphysical dimensions are outdated.

Presently we have reached the consideration that any person can produce original ideas and creative acts.

The techniques are numerous, like the tools at our disposal; creativity does not belong anymore to the reign of the blasphemous or the exceptional genius, on the contrary it is an endowment of the human genre with individual and social improvement as its purpose.

Literature, visual arts, music and theatre and, generally, any other form of art expression are communication phenomena. They use the languages of daily communication like words, sounds or images to produce messages of aesthetic value. What the aesthetic value might exactly be and the chance that it might be a qualification that, as receivers, we attribute to an object (physical or virtual) or something objectively existing, has been a matter of discussion for artists, philosophers and scholars over the centuries.

Benjamin (1966) in his work "*The work of art in the age of mechanical reproduction*" wonders just about the relationship between art and communication technologies.

Obviously Benjamin takes into account those media that were the new communication media at his age, such as the photography and the cinema.

On the basis of this analysis Benjamin realizes how the appearance of new and more refined performance and communication technologies, since the second half of the nineteenth century, was changing both the way of representing art and the concept of what art is and its role in society.

The whole art and literature history of our century, characterized by a succession of avant-gardes and by subsequent order revivals, could be interpreted in the light of this relationship. We cannot delve into the deeper meanders of Benjamin's thoughts nor do we want to deal with a complete theoretical question about the problem of doing art. On the contrary, being inspired by the intuition of the great German thinker, we will try to glance at what is happening in the world of art at the right moment when it gets in touch with the new digital technologies. Indeed the process of "art digitizing", under many points of view, takes to the extreme consequences many of the processes triggered by art production and its mechanical reproduction analyzed by Benjamin.

The artwork is therefore open and it acquires the features of an evolving process, an endless non-place. Through the digital technologies art becomes reproducible and the identity of the artist is fragmented into the infinite clones of his artistic creation spawned by direct fruition. The unique identity of the author, once packed up in the purchasable artistic object, now becomes a hybrid with the identities of the users engendering a kaleidoscopic mixture between the ego and the other. The artwork does not belong anymore to its only creator, but it is filtered by the single lives and becomes collective, fluctuating with loose boundaries. It is not the mirror of a single subjectivity anymore but it appears like characterized by polyphonic reflections of as many individuals as many users of the artwork.

The basic hypothesis is that the artist must not be regarded as a unique genius; this is an originally romantic concept unsuitable to testify the contemporary situation.

Against this idea and this “bourgeois” concept of art, the official theory that has been opposed is that of interpreting the practice of plagiarism, in cloning, in the swerve of the meaning, as the only powerful alternative.

More than 100 artists from all over the world have chosen to sign with an only name, Karen Eliot, all of their works. In this case, instead of turning a unique subjectivity into a multiple one, as it happens in digital art, many individuals are changed into a unique identity, supporting in any case the same opposing requests: going beyond the sacredness of the unique artwork and fragmenting the concept of the artist as a creator destabilizing his authority and promoting a collective art impossible to consider as a fetish.

To the question: “How can we become co-individuals? Luther Blissett, a multi-identity entity, answers: «You just need to give up to your identity, with all the advantages that this takes. Plunge into the wave of the feelings of anger and joy flowing around you, re-elaborate it without adding your brand, your signature. Since your counterparts don’t know what to do with a signed work: it is something completed, something of which you have ordered the end, something to which nobody will be able to add anything new. The non-identity of the co-individual goes hand in hand with the incompleteness» (1994)⁴.

The idea of plagiarism and of destabilizing an only Self is supported to undermine, in its foundation, a society considered as strict and crystallized in awarding its social roles hierarchy-based. The establishment of this kind of society is likely to be a direct consequence of power and cultural control strategies. Undermining in its foundation the cultural system, which in the Art field acts through the great designer brands and the artworks market quotations, has the aim of establishing a greater democratization of Art and of the aim of Art itself regarded as a mirror which legitimates a class of power keeping the means of expression under its control.

Many contemporary artists highlight their usage of technology for its being multimedia, versatile, across-the-board, hypothetically democratic, for it allows a better dialogue with the user and let the user take a more active role in the communicative process.

It is clear that with the use of computer and digital technologies we will have artworks different from the past, for the personalized kinds of use, for a deeper psycho-sensory engagement of the spectator (who becomes actor) and for the chance of bonding lots of people immediately (just think about the works on the internet). But that’s not all: the fact of being technologically spectacular in itself is not the aim. Technology in itself is not necessary to really live those experiences acclaimed by the virtual, but it is fundamental that through specific practices something is built inside us and that a critical thinking begins to spread. This process can be promoted by technology because it facilitates the staging of our body-mind.

So the performativity of new technologies surely help us acting specific practices, but these practices are acted mostly by our critical conscience and can be acted even beyond a technological field. Thanks to the Internet Art is becoming even more an art of movements and relationships and it is becoming a more concrete staging of performative practices with not an only performer anymore but with a community of performers that contribute to the creation of collective organisms through psycho-sensorial acts. It is a co-performative art, or, as Tommaso Tozzi asserts, a co-evolutionary art which comes alive and is enhanced by the joined actions of a variety of individuals that spontaneously contribute to the creation of an organic whole process. From

here we go back to the concept of self-management as a chance of acting specific practices autonomously through ways of horizontal actions.

These actions stage a community of individuals who collaborate as in a network beyond any hierarchic logic power.

In this sense we can assert that interactive digital art allows the autonomous staging of our body-mind to be the underpinning of a critical exploration of reality.

Creativity and technology

Surfing the net benefits the creative thought since it enables the non-linear processing mode according to the logics of the productive anticipation, the intuitive extrapolation, and the conative hypothesis: more in substance, according to the forms of the abductive thought. Thus, the sequential demonstrative linear logic is overcome. The abductive thought is very similar to the tertiary thought by Arieti. The primary thought is the one led by the world of the psyche, the unconscious side, the primitive, the instincts, but that finds a balance and an answer when it fetches the right placement in opposition to the secondary process that follows the rules of the linear logic. Usually «man tends to react according to a repertoire of responses provided by his habitual psychological faculties or the common style of his culture. If his answers are mediated by cognitive processes, they generally follow the mechanisms that in the Freudian theory are attributed to the secondary process» (Arieti, 1979, p.337). The creative process goes further and «allows man to set himself free from the constraints of the usual answers based on the secondary process» (Arieti, 1979, p.338); but it must not be in disharmony with it, since even creativity requires some restrictions: otherwise, we talk about extravagance.

Today, especially in the contexts of productivity and diffused culture, we get the impression that technology tends to alter the potential of the highest expression of the subject: his/her “educability”. This is not just a paradox in itself, but it’s the obvious consequence of the loss of references and horizons by those who do not always see humanism at the centre of the progress of science. A drastic fracture is concerning the man who, on the one hand, is pushed by his own nature to seek out his “essence” of human being and, on the other hand, is overwhelmed by the speed with which the tools he has produced curb him into a relativism that is difficult to overcome. There is the need to bring the technique and technologies in the sphere of man, a sphere that identifies, even if with different nuances, “the freedom of the person”.

Browsing the Web, but especially the way in which different pages are structured and proposed to the guests, can lead to a sequential exploration that follows the logic of the convergent or abductive thought and requires an analytical survey which, however, can impede the ability to find the most hidden information; it is not so obvious that it can be achieved by activating the mode and strategies of the divergent thought which does not focus on the construction of the surfing path but it proceeds according to connections and insights that are highly related to the abductive thought (Peirce, 1978).

Somehow, the Web holds an educational-formative speech when it allows a navigation that enables the subject to “skip” the page and quickly reach the result only of course, to check and verify the results and having the possibility to go back.

If it is true that the person is permanently exposed to the risk of stereotyping, repetition and surrender, especially because of the strong adapted boosts deriving from the immersion in the world of advertising and the message of a communication distinguished at all, it is also true that the generational future is in the ability of the person to recover the joy of exploration, the desire

of investigation, the research ability and the willingness to launch himself/herself into the great adventures of creativity.

When surfing the net a person can get trapped in strongly seductive messages but there can also be useful conditions to give cognitive mastery and ability to manage exploratory measures back with which he/she has always managed to cope with the universe, things, relationships and human events.

The technological evolution, and in particular the transition from the Web to the 2.0 Web, has firmly denied the apocalyptic thesis.

It is evolving the way we “hear” and “live” to the point that a simulation can be understood, for all purposes, such as “action”. The difference between “to see” and “to act” is getting more and more fleeting, everything we see is perceived as something on which we can often too simply and immediately intervene without the right perception of the consequences that a trivial action, which is almost instinctive and that can be just a mouse click, it can bring.

In view of this, it is possible to support a vision of the virtual as a human stage of evolution, or better, as a place of the development of a new perceptual and cognitive consciousness that allows the individual to relate to the material and immaterial things. The individual is currently able to evaluate, choose, customize, change, and not only consume the media information of which the world is pervaded with.

Therefore, virtuality shows itself as the enhancement of the perceptive awareness. In view of this Derrik De Kerckove comes to consider inappropriate the principle of the point of view, typical of the visual perspective of the Renaissance, in favour of “point of being”, understood as the ability to live through a cognitive illusion, virtual scenery (De Kerckhove, 1993). «With his symbolic activities, man has always made virtual constructs from the corporal expression to the indexical signs, from the oral language to the iconic image and the acoustic one, [...] by making his symbolic universe even more large, complex, important and substitutive» (Capucci, 1994).

There is a more reliable and effective reality than those generated by our mind and that is able to make more fleeting the border between reality and illusion: the virtual reality, with the gradual annihilation of the dichotomy between reality and appearance that it entails. While reality is always too small for the human imagination, virtual reality represents the recent expression of the old desire of making our fantasies palpable (Laurel, 1991). Virtual reality has brought a radical change in the perception of the world and the relationship with things and human events. The experiences lived behind or in front of the screen have actually interrupted the reality-materiality connection in favour of a new perception of life with the overcoming of the Platonic duality between matter and spirit, between body and mind.

The cultural and intellectual development of man has led to a technological progress that has allowed him to learn and fulfil another reality, another life, another body. Jean Baudrillard critically affirms that «we live in the imaginary of the mirror, the splitting and the scene, the otherness and the alienation. Today we live in the imaginary of the screen, of the interface and the doubling, the contiguity of the network. Our machines are screens, we have become screens, and the interaction among the people has become an interaction among the screens» (Baudrillard, 1994). In contrast, Antonio Caronia says that the body in the network is put at the centre of the human activity since its faculties grow to such an extent that the next «marriage between virtual reality and telecommunications will fulfil the overcoming of purely simulative dimension» (Caronia, 1996).

Among agreeing and disagreeing opinions there is still a crucial element that cannot be ignored: virtual reality is highly influencing strong attitudes and approaches; multimedia, the ever more “real” interaction allowed by the new media, is shaping new behaviours, it’s changing not only the perception of the world but also the self-perception, the personal abilities and relational qualities.

We must not think of the media as a place where to act in total freedom or to feel free from any real relationship with the other person, but rather as the place where to express and train the creative thought, although within a well-defined system of rules.

Paraphrasing Rheingold we can say that cyberspace gives the sensation of being transported into the world of imagination. While the artists try with different instruments to arouse an imaginary world, cyberspace even gives him life.

The cinema, the theatre has approximately the same purpose, but the cyberspace gives more than them, i.e. the possibility of interaction between the creator of the virtual world and his many inhabitants. With the Internet, in particular, our sensorial extensions are no longer passive conduits (Rheingold, 1993), through the new technologies our mind takes an active, creative and performative role.

Creativity is the ability to perceive the factual reality not as a set of pre-defined, stable and passively perceived rules, but as openness to possible worlds; only this feeling makes it possible to originally remodel the rules in new combinations with sense and meaning.

Once overcome the centralization of communication stage produced by the television and passively enjoyed by the subject, however, we feel that the digital technologies, the network, the virtuality allow the unfolding of a meta-operational dimension that favours the opening to new “possible purposes”.

Nowadays, man has the ability to reallocate us in the middle of the action in a new technological humanism, the network and dynamics of collective intelligence allow the deployment of the creative potentialities and that everyone possesses, even if in different ways.

Final reflections

Analyzing what happens on the Internet we can understand how that concept of abductive thinking would have led to set an alliance between Apollo and Dionysus, much to the advantage of human creativity. According to Einstein «The most beautiful feeling we can feel is the sense of mystery. It is the source of all authentic Art and all Science».

Also Goodman, taking inspiration from the Gestalt isomorphism, considers that the human being is constantly involved in a creative dynamic aimed at building worlds which are substantially relative. According to Goodman (1978) «the structure of the world depends on the ways we consider it and on what we do; what we do, as human beings, is talking and thinking, building, acting and interacting. We make up our worlds by building them».

Art and science are nothing else than “symbolic systems” which refer, in essence, to a similar structural resemblance. The scientist and the artist share their task and their ability to create symbolic worlds which are essentially abstract and metaphorical.

Mind plays an active and creative role in building a model of world representation, in other words understanding does not consist in the repetition of experience or in the outside world reproduction in our mind *tout court*. The typical creativity of the artist doesn’t work differently for

the scientist and the most prudential epistemology doesn't give up breaking the strict schemas established by the knowledge of the disciplines and by the method and doesn't renounce giving full scope to creativity.

The basic observation about these analyses is that any human activity takes place in a social and historical context, therefore in a "net of meanings and relations" that inevitably produce perceptions, behaviours and contexts conventions. The dynamics of the creative talent, in this way, deploys all its potential not like "the place of the cleric", of the artist, of the works personnel, anymore, but it is committed to the hands of the man who, during the "construction" of his knowledge path, can have all the prosthetic/technological tools suitable for creating.

Nowadays the human being has got the chance to put himself, once again, in the middle of the action of the net and of the collective intelligence. Mankind can take his chance to let all his creative resources show off.

References

1. Arieti, S. (1964). The rise of creativity: from primary to tertiary process. In *Contemporary Psychoanalysis*, 1(1), (pp. 51-68).
2. Arieti, S. (1969). *Il Sé intrapsichico Affettività cognitività e creatività nella salute e nella malattia mentale* (The Intrapsychic Self: Feeling, Cognition, and Creativity in Health and Me) Bollati Boringhieri, Torino 1969, 1979 (2nd ed.), (p. 142).
3. Arieti, S. (1979). *Creatività. La sintesi magica* (Creativity: The Magical Synthesis). Il Pensiero Scientifico Editore, Roma 1979, 1990 (2nd ed.), (pp. 337; 338).
4. Baricco, A. (2008). *I barbari. Saggio sulla mutazione, Prima edizione nell'Universale Economica*. Milano 2008, (p. 92).
5. Baudrillard, J. (1994). Lo Xerox e l'Infinito (Xerox and Infinity). In A. Ferraro & G. Montagano (eds.), *La scena immateriale. Linguaggi elettronici e mondi virtuali*, (p. 158.). Costa & Nolan, Genova.
6. Benjamin, W. (1966). *L'opera d'arte nell'epoca della sua riproducibilità tecnica*, (The work of art in the age of mechanical reproduction). Einaudi, Torino 2000 (First published in 1966), (pp. 184).
7. Capucci, P.L. (1994). *Il corpo tecnologico* (The technological body). Baskerville, Bologna, (p. 33).
8. Caronia, A. (1996). *Il corpo virtuale* (The virtual body), Florence, Einaudi, Torino, (p. 109).
9. De Kerckove, D. (1993). *Brainframes: mente, tecnologia, mercato*, (Brainframes: technology, mind and business). Baskerville, Bologna.
10. Feyerabend, P.K. (1984). *Scienza come arte* (Science as an Art). Laterza, Bari 1984, (p. 4).
11. Ghil, R. (1909). *De la poésie scientifique*. Gastein-Serge, Paris.
12. Goodman, N. (1978). *Vedere e costruire il mondo*, (Ways of worldmaking). Laterza, Bari 1988, (p. 69).
13. Heidegger, M. (1953). *Scienza e meditazione* (Science and reflection), "Saggi e discorsi", Mursia. Milano, 1976, (p. 17).
14. Infeld, L. (1952). *Albert Einstein*. Einaudi, Torino 1959, (p. 207).
15. Kevin, K. (2011). *Quello che vuole la tecnologia* (What Technology wants). Codice Edizioni, (p. 27; 34; 75).

16. Kris, E. and Kurz, O. (1980). *La leggenda dell'artista*, (The legend of the artist). Editore Boringhieri, Torino.
17. Laurel, B. (1991). *Computers as Theater*. Addison-Wesley, New York, (p. 526).
18. Peirce, C.S. (1978). *Collected papers*. Harvard University Press, Cambridge, (p. 7).
19. Rheingold, H. (1993). *La realtà virtuale* (Virtual reality). Bologna, Baskerville, (p. 61).
20. Weber, M. (1976). *La politica come professione* (Politics as a Vocation), "Il lavoro intellettuale
21. Winnicott, D.W. (1973). *Il bambino e il mondo esterno* (The Child, the Family and the Outside World). Giunti and Barbera, Florence 1973, (p. 109).
22. Zola, É. (1880). *Le Roman expérimental, Il romanzo sperimentale*. Pratiche Editrice, Milan 1980.

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¹ Zola wanted to give literature the same methodological coherence of the medical science, the same ability to offer a certain knowledge.

² In this essay he showed and defended his conception of the «verbal structuring» based on the use of the innate musicality of vocals and consonants.

³ Gabo Naum, after participating and contributing to the spread of cubism, he supported the constructivism that exposed in Manifesto of realism (1920).

⁴ Luther Blissett is a multiple-use pseudonym used by an undefined number of performers, artists, underground magazines, virtual professionals and squatter communities during the nineties. The pseudonym first appeared in Italy, in Bologna, in 1994 when some cultural activists began to use it to denounce the superficiality and the bad faith of the mass-media system.