Creative Actions and Organizations

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Towards a Reflexive Sociology of Serendipity

By

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I.

INTRODUCTION

THE PARADOXICAL PRACTICES OF THE CREATIVE PERSON

Creative process or organizational routine?

In the book *Love as Passion*, Niklas Luhmann defines feeling love as a "normal improbability". This definition could happily also refer to the *creative process*, an inevitable act of love and necessity: a relational process that determines the survival of the human being as a person. Creativity holds within itself *the vague* (ambiguity of each sign manifested by the environment) and *the determined* (the ability to interrupt the interpretability of a sign, to make an ordering decision). The anomalous and daily practice merge. The disorder is reordered according to a process

The improbable becomes possible and the original turns trivial when accepted by the community. Creativity is like the egg of Columbus: before you know it, you admire it; when you know it well, you are disappointed, saying: "Is that all?"

In today's highly innovative organizations, creative processes are proceduralized in the form of techniques[1] and give rise to routine phenomena. The routines allow the recombination of ideas of the productive sectors. Only recursive paradoxes of habits generate changes in local and global systems. The creative habit becomes the standard of the future, generating competitive advantages and economies of scale. These considerations on inevitable creative habits are the result of research that

[1] I could have defined the process with the term bureaucratization, dear to Crozier; however, bureaucracy is a more complex phenomenon. Procedure is an instrument of bureaucracy but it is not the only factor capable of determining the bureaucratic phenomenon.

boasts over ten years of participating observations on public, private, and non-profit organizations in which techniques of stimulation of creative processes aimed at accelerating processes of incremental are applied or radical innovation. In my career, academic and professional, I have dealt with the topic in eleven publications[2].

Years ago, I started with the idea of rebuilding a sociological dialogue of creativity in organizations. In doing so, I hybridized paradigms: Luhmann's systemic approach, Von Foerster's radical constructivism, Donati's relational sociology, Sennett's ideas on the craftsman, Wittgenstein's ideas on language, Goedel's on logic, and Hofstadter's on artificial intelligence. I have drawn on over 600 works, including essays and articles, identifying scholars who have dealt with the topic with particular reference to the following disciplinary fields: sociology, cognitive sciences, social and cognitive psychology, cultural anthropology, neuroscience, semiotics, history of science, and the theories and techniques of advertising language.

At the same time, I have been a participating observer for years, visiting communication agencies, consultancy companies specialized in marketing and business innovation, training institutes and universities, cultural associations, trade associations, publishing houses, media centers, newspaper editors, research centers, and private foundations.

In most of these organizations, I have been an interviewer. In other cases, I participated in meetings organized to stimulate creativity (I experimented with the thought-shower/brainstorming, the Walt Disney method, debriefing, associations of ideas, reverse engineering, NLP, and focusing).

The chosen interviewees were selected on the basis of the following criteria: 1. importance of the role covered; 2. consistency of the professional curriculum; and 3. creative value of the organization in which the interviewee operates.

Over the years I have interviewed hundreds of creatives in order to understand the different interpretations inherent in the creative process and its relationship with the following conceptual polarities: a) individual/group; b) rational/irrational; c) autonomy/procedure; d) incremental innovation/radical innovation; e) change/habit.

[2] D'Alessandro, 2001; 2008; 2010a; 2010b; 2010c; 2012a; 2013; 2014; 2015; 2019a; 2020b.

This monograph represents a further step forward; an update and a confirmation of research hypotheses developed previously.

Any definition of creativity can be rejected

An American publicist, Barry Day, said: “Try asking for a definition of creativity and you will find as many opinions as there are individuals”. Edison stated that creativity is “1% genius, 99% toil”. Einstein maintained that the secret of creativity is “knowing how to hide one’s sources”. Poincaré considered creative everything that could bring “novelty and utility” at the same time.

When we try to define this word, other words explode that deny the previous ones: for many scholars, creativity depends on discipline, for others on freedom; for some it depends on a path already traced, for others on an invented strategy.

For some scholars, creativity can be taught; for others it is unrelated to any didactic logic. In reality, at the base of every creative process applied in an organization, there are rules (and meta-rules) that guide change and innovation. According to my research, the most fitting definition of creativity must be at the same time paradoxical, generative and recursive: a set of meta-rules capable of deactivating themselves in order to achieve a goal; a set of rules where there is a grundnorm that states: “change the rule”.

Creativity is the ability to change the path, the awareness that there is no “non-path”. It is the attitude of overcoming known rules, even in the knowledge that when the rules are exceeded, other rules are being created, inventing new categories of meaning. Creativity is an emerging relationship between causality and randomness, an uninterrupted dialogue between solution, problem, and reference context.

Opposition, combination, separation: the inevitable rules

In my book *Creativity: Normal improbability? For a sociological dialogue between problem and solution* (D’Alessandro, 2010a), I launched a provocation: *Creativity is normally inevitable, an evolutionary phenomenon of the livin*g. The phenomenon relies on patterns and habits that can be guided by a banal, conventional trigger or the result of tacit knowledge.

This will disappoint those who consider creativity an ineffable mystery of genius. In all the organizations I have observed, there are techniques that trigger routines in creativity management.

From 1999 to 2015, I surveyed 200 techniques, each of which had elements present in the other techniques: common rules of opposition, combination, and separation.

These meta-rules determine creative behavior and are triggered by the circular and recursive relationship between thought and language. Obviously, this is not enough to explain the phenomenon. We must take into account the environmental dimension, the biography of the creative (discoverer, inventor, artist, manager, consultant, writer), the stratification of previous knowledge, the organization with which one usually relates, the random factors that trigger a new way of proceeding, and, finally, manual skills. However, the governance of the creative process is also the result of a cybernetic use of rules. Creativity stops in organizations that do not favor a didactic of creativity. Humanity does not need the irrational and solitary genius (which does not exist in an absolute sense since there is always a cultural and psychological context), but a genial sociality which generates talents by stimulating everyone's skills in a systematic and shared way – I dare say in a relational-systemic way.

Talent, technology, and tolerance? Avoid the vicious circle

According to my investigations, talent, technology and social tolerance do not lead to an increase in creativity. A cosmopolitan and resourceful environment does not favor creativity more than a poor provincial one.

We can speak of different creative paths. There are places where it is possible to elaborate analytically and there are places where it is possible to think synthetically. For decades, Japan has driven technological innovation even though it is characterized by a very traditional social system, an academic and entrepreneurial environment that is not strictly cosmopolitan, and a modest social tolerance towards cultural diversity. Finland boasts one of the highest innovation indexes in the world while presenting levels of reduced cosmopolitanism compared to other European and non-European countries. It is not true that attracting more creative talent means increasing wealth, developing more technology and creating more tolerance but it is true that where there is already a lot of wealth, more tolerance can be determined, and technology develops faster. Consequently, more people

(also creative) are seduced by the favorable conditions of rich places, overestimating the possibility of ascent and underestimating those of failure. Consequently, potentially emerging talents in poorer territories are systematically deluded by other nations, where already established professionals firmly maintain the rules of the game. The professionals continue the construction of their corporate and privileged aristocracy undisturbed, organic to the dominant system, while others (with rare exceptions) live below their expectations when they could have developed much more by remaining in the (poorest) places of membership. Often, territories do not develop because numerous talents are seduced and deceived by other territories.

Once arrived in the new territories, the neophytes do not add value while they have contributed to the impoverishment of the territories from which they fled. These considerations deny Florida's theses[3].

The emerging relationships between creativity and innovation

The change of an existing state of affairs in order to introduce something new: this is the most widespread and accepted definition of the term innovation. But the more generic the definition, the more it poses problems of interpretation[4].

If we try to deconstruct the concept from different angles, we can detect numerous nuances to the relationship between creativity and innovation.

- *Innovation is a process*, the result of a series of interconnected passages. Everett Rogers (Rogers, 2003) divides the innovative process into five phases: a) Identification of a need or problem that requires a solution; b) Decision to do research to resolve the issue; c) Development of the new solution in order to give shape and content for those who will have to use it; d) Production and distribution of the product or service containing the innovation; e) Consequences determined by the introduction of the new solution. These phases do not have a linear or ordered development but are "creatively" linked without a distinct time hierarchy (Kline and Rosenberg, 1986).

[3] Florida R., *The Rise of the Creative Class*, Basic Books, New York, 2002.
[4] F. Ramella, *Sociologia dell'innovazione economica,* Il Mulino, Bologna, 2013.

- *Innovation is a relationship* that depends on a set of subjects, often from different worlds and experiences, who constantly interact to generate value over time.
- *Innovation goes beyond change* because it involves doing new things or doing things in a new way (Schumpeter, 1947).
- *Innovation does not coincide with the invention* even when it is involved. If an inventor realizes they have made a "great discovery" but cannot find anyone willing to produce it, the new solution ends up in the archives of the patent office. To transform an invention into innovation there must be an organization capable of combining different types of knowledge, skills, competences, and resources. In other words, inventing means conceiving a new product (or service or process) while innovating the means of putting new ideas into practice for the first time, to paraphrase Fagerberg (Fagerberg, 2005). Schumpeter claims that the inventor produces ideas while the entrepreneur realizes them. Today, in some production sectors, inventive, innovative and creative activities tend to overlap. So, as Mokyr (Mokyr, 1990) would say, innovation and invention, in some cases, are complementary.
- *Innovation is not an inevitably positive result*. Those who deal with innovation live in uncertainty and know that failures are more numerous than successes. Innovating means generating unexpected consequences, investing in capital and human resources without knowing in advance when the goal will be reached. Innovation can be incremental when it substantially improves an existing product, enriching it with solutions that do not change its substantial logic.
- *Innovation can be radical* when it produces a paradigm shift, when it creates a new market, when it completely reconfigures the way of thinking or knowing a phenomenon, and when it determines the birth of new categories.
- *Innovation can come from a creative thought* but also from a randomness; numerous discoveries have happened randomly and been improved a posteriori.
- *Innovation is a social construction* based on cohesion and trust because by strengthening the sharing networks, it is possible to increase the number and quality of winning ideas.

If we want to build a relationship between creativity and innovation, we can arrive at the following scheme:

1st term	Degree of relationship with	2nd term
Creativity	includes	innovation
Creativity	sufficient and necessary for	innovation
Creativity	absolutely distinct from	innovation
Creativity	necessary, but not sufficient for	innovation
Creativity	opposed to	innovation
Creativity	generates only	incremental innovation
Creativity	also generates	radical innovation
Creativity	identical to	innovation
Creativity	depends on	innovation

D'Alessandro, 2010[5]

Demythologizing the creative process, building the teaching of error

Resize creativity, scratch stereotypes, make it a real object of investigation, treat it for what it is: "a social construction".

Approaching it with the necessary detachment, typical of the social scientist, is necessary to give new life to the theme. In my case, it meant distancing myself from the part of me that for years has combined social research with the profession of a senior copywriter.

The social scientist tried to discern the professional with his rituals. Investigating my routines has made it possible to better understand the habits of the other subjects encountered during the investigation.

Thinking, doing, and making mistakes several times a day, knowing where to get information from but at the same time falsifying the path taken: this could be a "wandering" definition of creativity.

The philosopher Brunella Antomarini claims that error, in many cases, represents a new and unusual form of wisdom.

> From physics to psychology, we have many examples of errors that produce order and truth, and we know that sometimes we are not wrong even if we do not know. (...) just as we know that when we hit the mark, we are wrong at another point (...) we are educated not to make mistakes and to identify

[5] S. D'Alessandro, *Creatività: Normalissima improbabilità? Per un dialogo sociologico tra problema e soluzione,* Aracne, Roma, 2010, p. 158.

> stable truths (...). But we can also think that every truth is a passage between forms, combinations and transitions of forms, generated by their errors in movement, just as happens in physical processes. (Antomarini, 2007: IX, X)

All science has proceeded with error. But, in the end, what is error if not an anomalous thought that has its own logic, even if counterintuitive? Paying attention to anomalies allows you to make a leap forward in terms of innovation. The Post-It was born from a mistake: the inventors wanted to produce a very strong glue but produced a weak glue instead. The creative choice that subsequently determined the innovation was not in the creation of the glue itself but in deciding on a new use of this product.

Fleming came to discover penicillin by observing, among many slides, one with mold. While other researchers would have thrown the slide out, he focused on the moldy (anomalous) object and wondered why there was no bacteria on it. Fleming worked out the correlation; other scholars would not have done so. He managed to combine erroneous/wandering thinking with the rigorous method of the scientist attempting bold but possible correlations. Error leads us to new methodological paths: should we perhaps introduce the teaching of error in universities? You can become creative and learn to "make mistakes" in a constructive way. By rebuilding or deconstructing models of what has happened in the past, we train our mind so that it does more.

After all, cognitivists like Gardner, neuroscientists like Damasio, inventors like Edison, designers like Munari, and psychiatrists like de Bono have cataloged and classified the triggering rules of the creative process, so it is possible to articulate the teaching of creativity for researchers, artists, and company managers.

In any case, there are rules inscribed within our knowledge that combine, fragment, and overturn.

1.

CREATIVITY

THE LIMITS OF DEFINITIONS

1.1 Creative process: from archetype to stereotype

In Western culture, the word "creativity" represents the result of a symbolic negotiation of a historical-social character that has emerged in the contemporary era, starting in the early twentieth century. Ancient, medieval, and even modern cultures use other categories and other words. Catullo, Dante, and Leonardo would never have defined themselves as creatives, nor would they have been defined in this way by their contemporaries. Although in Italy the word "create" appears in 1276, borrowed from Latin, and the creative adjective, according to historical sources, makes its first appearance in 1406, these words were not used to describe the skills of particularly gifted people. In pre-medieval culture, the terms that characterized talent and genius had to do with the Greek word that designates the act of generation; for example, in the treatise on aesthetics and rhetoric *Del Sublime*, we speak of γενεσεως στοιχείον (generating principle), translated by contemporaries as a process of creativity or a foundation of creativity, or as fantastic and imaginative. In the treatises of rhetoric and ancient philosophy, the creative process was also defined as the substantive φαντασία, derived from the verb φαινω (to show), which perimeters the concepts of imagination and representation. The first appearance of the word "creative" (in Italian) in the De Mauro dictionary dates back to 1951, and it is only since 1970 that the term has been used in specific professional sectors (IT, advertising, marketing, and industrial relations).

For the Zingarelli dictionary,

> Creatività [da creativo; 1951] s. f. 1, significa: Capacità creativa, facoltà inventiva. La c. dei bambini | (psicol.) Capacità di produrre nuove idee, invenzioni, opere d'arte e sim. 2 (ling.) Capacità del parlante di capire e di emettere enunciati che prima non ha mai sentito.

The pre-modern but post-medieval terms of "inventiveness" and "ingenious" can be considered direct ancestors of the term "creativity".

In scientific circles, *creativity* has often been called *serendipity*, a word that we will discuss at length in the following chapters. The term "creative" was born with certain attributes and over time, successive connotations were added to arrive at the contemporary definitions, most of which are functional to the way of conceiving ingenuity as a procedural generative process. In fact, creativity has been defined (it would be better to say interpreted and then negotiated in the academic sphere) by most psycho-sociological scholars as a change and overcoming of the rules that cannot develop in the absence of the rules or procedures to be changed and overcome. Today, creative is applied in all fields of knowledge. The use and abuse of this word has generated many misunderstandings, often resulting in perceptual self-referencing. This is the case for many communication professionals who define themselves as creative for the simple fact they are working in a sector that is commonly perceived as such. However, the creative expression (going beyond the usual concepts of imaginative, ingenious, inventive, intuitive, and talented) represented a meta-semantic bridge between different fields of knowledge, making explicit, beyond the specific and subtle differences of applicative character and methodology, the strong concept of the ability to overcome previous rules through a new way of observing them. It is no coincidence that in the psychological field at the beginning of the twentieth century, creativity was officially defined as "the ability to grasp the relationships between things in a new way, formulating unconventional syntheses" (De Caroli, 2009). This definition was also shared in mathematics since one of the most well-known definitions of creativity comes from the scientist Henri Poincaré who says, in *Scienza e Metodo,* (Poincaré, 1908; trad. it. 1997) that a new result has value when establishing a link between elements that have been known for some time but have been until now unrelated to each other establishes an order where disorder seemed to reign. In 1929, more simply, Poincaré said that creativity means combining existing elements with new connections that are useful. In the same decade, economist Frederick Taylor also defined creativity as the process that gives life to a new product[6]. For more than a century, the twentieth century, the words "create" and "invent" were brought together in such a way as to transform into interchangeable

[6] The affirmations of these well-known scholars are lovingly combined with the happy aphoristic intuitions of writers of the late 1800s and early 1900s. How can we forget the well-known definition of Proust: The real discovery does not consist of finding new territories but of seeing them with new eyes?

synonyms. Poincaré, with his definition, reworked the meaning of creativity that has gradually been extended to all disciplines. In the twentieth century, therefore, creativity replaced *fantasy*, *ingenuity*, *inventiveness,* and *talent*.

The meaning of creativity became the ability to invent, building new and useful combinations. The two categories that substantiated creative activity in society and in the twentieth century became *new* and *useful*. "New" is the category relating to the historical period of the early twentieth century; "useful" is connected to understanding and social recognition. New and useful adequately illustrate the essence of the creative act: an overcoming of existing rules (new) that establishes a further shared and functional (useful) rule. In this way, we also identify the antipodic dimensions of the creative process – disorder and order, paradox and method – held together by a single word.

Lastly, the new and useful categories extend the sphere of creative activities to all human action recognized as having an economic utility – aesthetic or ethical – that develops one of the possible degrees of innovation: a) the new application of an existing rule; b) the extension of an existing rule to a new field; c) the establishment of a completely new rule. With the term creativity, the concepts of talent and genius, but also those of imaginative and full of imagination, decay or, better, undergo a Weberian process of secularization. Talent and genius, capable of evoking a mystique and a mythology of irrational and anomic elusiveness, are replaced by a word that turns the concept of talent into a "technical-practical ability to overcome the rules" through methods of reversal, replacement, combination, and different observation.

The romantic figure of the irrational fury of the genius (a typical construction of the nineteenth century) is replaced by the person who follows the rules, capable of giving order to the spontaneous process of invention and imagination. In some ways this passage represents a return to classical conceptions, as evidenced by the treatises of the ancient rhetoric of the Greeks and Romans in which creativity depends on putting in order[7]. In this sense, language remains the most complete manifestation of the creative process in that it allows the ordering of the large or small thoughts that come to the creator's mind as well as understanding how the creator's mind orders its plot; that is to say: tell me how you classify things and I will tell you who

[7] On the concept of order see: R. Barthes, *La Rhétorique ancienne*, in "Communications", n. 16, 1970; trans.: *Trattato di retorica antica, Alle origini del linguaggio letterario e delle tecniche di comunicazione,* Bompiani, Milano, 1972, p. 55.

you are[8]. It is no coincidence that, again in the ancient *Del Sublime* treatise, the anonymous author begins by reconstructing the difficult relationship between the two faces of creativity – the rational and orderly, and the spontaneous and anomic – preferring the first of the two faces

> Prima di tutto dobbiamo esaminare se esista un'arte del sublime o della passione: infatti, alcuni pensano che sbaglia completamente chi vuole ricondurre cose di questo genere a regole tecniche. La grandezza – dicono – è innata e non si può insegnare; l'unica tecnica in ciò è possedere le doti naturali. Le qualità naturali – pensano – si immiseriscono e diventano assai più fiacche quando sono inaridite da una serie di precetti. Io affermo che si potrà dimostrare il contrario, se si osserverà che in genere la natura basta a sé stessa nei momenti di maggiore tensione ed altezza emotiva, ma non ama procedere a caso e in modo completamente spontaneo. Essa è in ogni caso il principio primo e archetipico della creatività (γενεσεως στοιχείον), ma solo il metodo è capace di delimitare e facilitare la misura, l'occasione, la pratica e l'uso più sicuri[9].

Between classic rational thought and the techno-rationalist one of contemporaneity, we find common traits. The contemporary meaning of creativity has its roots in the rational knowledge of the rules to be overcome; it cannot develop in the absence of preliminary skills.

This meme is functional to contemporary organizations governed by procedures. Creativity is, therefore, above all "sociological": its meaning summarizes an epochal passage that shifts the generative capacity of the human being from an artistic dimension determined by inspiration to a professional result of methodical application capable of triggering the inspiration.

Howard S. Becker masterfully demonstrated that the creative process has always been the subject of individualistic mythologies but, in reality, over the centuries this process has involved a rational and collective work in every area, from art to science to daily life[10]. What has always been seen as an expression of the individual and the fruit of an irrational talent is actually configured as the result of shared activities and conventions/ procedures that have allowed a social understanding of a new idea and, consequently, made possible its practical application within a social system, thus reifying product, process, or service innovation. In the contemporary world, the term

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[8] On the concept of classification see: R. Barthes *op. cit.* p. 53.
[9] Anonymous author, *Il Sublime,* Mondadori, Milano, 1991, p. 43.
[10] H. S. Becker, *Art Worlds*, University of California Press, Berkeley, 1982, p. 10-12.

creativity expresses the need to continue experimenting and innovating from an evolutionary perspective. Creativity is the way to regulate originality. It is the recursive recombination of pre-existing elements.

In this sense, it is systemic and adaptive. Creativity is an instrument of autopoiesis since it is only possible to overcome it by means of itself. It is thermodynamic because it builds/destroys/rebuilds and is functional to the production and commercial systems that need it as a deterrent. It is real and imaginary, emotionally rational and anti-systemic, but systematically functional to the system because it can be systematized. It is an integral part of dialectics and the fundamental principles of differentiation since it is an act that implies a selection and a reduction of complexity.

It is the only way that allows authentic learning; it is theory in practice. It is deduction and empiricism; it is process-system-medium. Creativity is a:

- process that allows you to find new ideas through the act of revealing itself in language, thought, or creative action.
- system as a method for formulating an idea.
- medium as a tool through which to spread an idea.

If we try to briefly describe some definitions of creativity, still today at the basis of important lines of research we find different ways of conceiving it, antithetical or complementary to each other:

- *Creativity as a process.* It includes the definitions based on the description of a mental path or an analysis of information. This current of thought is attributable to authors such as Rossman (1931), Ghiselin (1952), and Koestler (1965).
- *Creativity as a product.* The concept of creativity is, in this case, connected to the creation of something concrete. The product is recognized as creative if a legitimated context considers it such. Authors such as Barron (1962) and Mackinnon (1962) are recognized in this category.
- *Creativity as an individual project or a person's cognitive system.* All research from personality psychologists identify the characteristics that a subject should have in order to develop creativity. These studies have led to the distinction between creative and non-creative people, defining models that allow this distinction. Authors such as Guilford (1950) and Cropley (1969) refer to this trend.
- *Creativity as a social dimension.* The collective imagination of a historically determined society plays a role in the formation of

creative processes and the phenomenological interpretation of the concept of creativity. The social dimensions of creativity have been little analyzed, or underestimated, by a certain Western vision that has always correlated and confused the proud and libertarian independence of genius with its individualistic and solitary dimension. There is a collective dimension of creativity. There are social premises both in systems based on individualistic ethics and in societies close to collectivism. Authors such as George Gurvitch and Michele La Rosa tackled the theme, emphasizing the potential of collective spontaneity as a spark of conscious social creativity. Authors such as Lewis Feuer (1969), and Alfonso Montuori and Ronald Purser (1997) have instead focused on the religious, economic, and cultural variables that allow some eras to be more creative than others. Eminent sociologist de Masi (1989, 2000, 2003), a scholar of creativity, contrasted the creative process with the procedures determined by the North American scientific and mechanistic organization. According to de Masi, creativity emerges above all in flexible, collaborative organizational structures based on teamwork and interested in informality and aesthetics. In the work *L'Emozione e la Regola* (1989), he presents thirteen creative groups very different in their specializations but with elements in common: from the Thonet House to the Bauhaus, from Bloomsbury intellectuals to the philosophical circle of Vienna, from the Pasteur Institute to the group of via Panisperna. Passing through more or less famous experiences, the author shows how functional the group is in the creative process, often to a greater extent than the individual dimension.

- *Creativity as social persuasion.* This is the vision of Simonton (1988), i.e. the idea that an individual can be considered creative when able to impress others with their creativity. From this point of view, the subject can be compared to a sort of leader who has authority but also needs consent to affirm their ideas and creative conception. In this case, creativity simply becomes one way of conceiving innovation among the many possible ways, a current of thought that produces a way of thinking about evolution that is neither unique nor better.
- *Creativity as the production of new things.* This class includes all the descriptions of creativity that consider the need for novelty whether it is intended as a new product or idea, or as a new context or method with which to apply innovation. Thurstone (1952) and Stein (1953) belong to this current of thinking.

- *Creativity as a contrast to compliance.* Creativity is seen as an antithesis to compliance. Close to this vision of the phenomenon is Crutchfield (1962).
- *Creativity as truth, generalization and surprise.* Bartlett (1958), Anderson (1959), and Selye (1964), although with different levels of importance, support the need for these three characteristics, which determine a creative contribution.
- *Creativity as a process/model.* In these definitions, we agree on the existence of several phases and procedures necessary for creativity. Those who agree with this concept are Wallas (1926), Spearman (1930), Osborn (1948), Patrick (1955), de Bono (1967), Parnes and Biondi (1975), and Munari (1977). Some of these contemporary authors, while embracing the theory of systems and its main postulates, tend to fall into contradiction when they try to model creative processes. However, modeling and procedures are required by the market and by the managerial evolution of companies. Following these paths there is always the risk of reductionism, but identifying the independent variables that determine a creative process is a necessity, even if it is a harbinger of paradoxes.

1.2 Creative process and academic currents

There are other forms of classification of creative processes that differ from those described in the previous paragraph.

Sociologist Melucci[11] comes to our aid here by focusing on the cultural coordinates that have interpreted the concept of creativity, distinguishing three main lines of research on the theme:

- A line of cognitive psychological research that has paid attention to the processes of the mind that support our cognitive faculties, making creativity a specific object of investigation and providing a basis of theories, observations and data through authors such as Calvi (1966, 1972), Sbisà (1976), Rubini (1980), Sternberg (1988), Trumpet (1990), and Fallace and Gruber (1990).
- A line of research defined by Melucci as psycho-social due to the heterogeneity and difficulty of qualifying the authors' contributions in disciplinary terms. This line deals with the relationship between creativity and excellence, especially in the artistic and scientific

[11] A. Melucci, *Creatività: miti, discorsi, processi,* Feltrinelli, Milano, 1994, p.12.

fields, thanks to authors such as Barman and Rheigold (1986), Briggs (1989), Gardner (1987, 1993), Albert (1990), Simonton (1990), Gedo (1991), and Goleman, Kaufman, Ray (1992), and has contributed to the spread of that presumed equation, often taken for granted in daily speech, that leads to building analogies between creativity and talent (or ability).

- A line of research of application interest. This path deals with creativity in practice, especially in the daily practices of organizations, therefore in management strategies, the formulation of tactical communication plans, and decision- making processes. It has an extraordinary following thanks to authors like Drucker (1985), Ray and Myers (1986), Jaoui (1991), Raudsepp (1991), de Bono (1992), and Demory (1993).

But if we try to analyze the authors mentioned, together with other scholars who have worked in other areas of research (natural sciences, philosophy, literature, cognitive sciences, and mathematics), we find a sociological interpretation – in the sense that the specific definitions of the concept of creativity derive from socialization phenomena – that stratified from the end of the 19th century to the beginning of the 21st. From this gnoseological horizon, it is possible to observe the nuances expertly captured by scientists (also social) who have formulated paradigmatic and cultural definitions. Below we list the most influential or well-known definitions that continue to fuel the debate on the topic not only in the academic world but also in the collective imagination of economic and social organizations. Many of the definitions described have not been expressly stated by the authors in the way they appear in the list. In some cases, they have been extrapolated on the basis of reading the classics in an attempt to find an interpretative key aimed at identifying common features:

- Creativity is an analyzable process. Wallas (1926), Spearman (1930), Rossman (1931), Osborn (1948), Ghiselin (1952), Patrick (1955), Koestler (1965).
- Creativity is a way to process new connections of existing elements that are also useful. Poincaré (1929).
- Creativity is a new combination (or a reversal) of old elements. James Webb Young (1940).

- Creativity is an unexpected and unintended consequence that inspires the intentions of a researcher. Merton (1936)[12].
- Creativity is serendipity: a process in which randomness helps prepared minds. Merton (1940, 2002), Antomarini (2007)[13].
- Creativity is the relationship between the entrepreneur's innovative spirit, technological factors, freedom, and the competitive system of the market. Schumpeter (1942).
- Creativity is a specific attitude of the person. Guilford (1950), Cropley (1969).
- Creativity is an overall relationship between the person, the environment, and the restructuring of the relations of the parts that make up a "field" of intervention/ observation. Kurt Lewin (1935).
- Creativity is new. Thurstone (1952), Stein (1953).
- Creativity is a mutual influence between the non-symbolic sensory linguistic system and the symbolic natural linguistic system. Arnheim (1954).
- Creativity is social volcanism. Gurvitch (1958).
- Creativity is a process consisting of truth, generalization, and surprise. Bartlett (1958), Anderson (1959), Selye (1964).
- Creativity is a contrast to compliance. Crutchfield (1962).
- Creativity is the orientation towards improvement. Barron (1962) and Mackinnon (1962).

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[12] In 1936, Merton published *The Unanticipated Consequences of Purposive Social Action* in the first volume of the American Sociological Review. The article analyzes the perverse effects in social life, establishing that the interaction between intentional and unintended actions generates unexpected effects: these unexpected events can determine new phenomena and new ideas. Merton underlines the importance of spontaneous and unexpected in the generation of creative thoughts: the unexpected and spontaneity show a recursive dialectic in which the programmed procedure and its negation generate creative phenomena. From this point of view, spontaneity is inserted as a "rule of anti-rule" regardless of intentionality and its unpredictability.

[13] Serendipity: ingeniously reinvented in 1754 by Horace Walpole, the term indicates that mixture of sagacity and luck with which one unintentionally makes happy discoveries. It was equally ingeniously reintroduced in the 1940s by Merton in the social sciences. In serendipity he saw a model capable of accounting for the "unexpected, anomalous and strategic" data in the process of scientific discovery. On this theme, see also: R. K. Merton, S. Fallocco, *La serendipity nella ricerca sociale e politica*, Luiss Edizioni, Roma, 2002; and R. K. Merton, E. G. Barber, *Viaggi e avventure della serendipity*, published by Mulino in 2002 but written in 1958 (unpublished until 2000). Among other things, the phrase "randomness helps prepared minds" was actually written by Louis Pasteur. Merton takes it up to give exemplary concreteness to his idea of scientific discovery.

- Creativity is fluidity: the ability to verbally or graphically produce a large number of ideas. Torrance (1966).
- Creativity is the result of a hedonistic and liberal orientation of society. Feuer (1969).
- Creativity is a quantitative factor based on generational cycles of exponential growth and cycles of saturation and stasis. De Solla Price (1969).
- Creativity is negative thinking and critical consciousness. Adorno (1970)[14].
- Creativity is a collective behavior that contrasts institutionalization processes. Alberoni (1968; 1970; 1974).
- Creativity is independent of the degree of intelligence. Mannetti (1976).
- Creativity can be a random recursive process, reproducible by intelligent machines. Hofstadter (1976).
- Creativity is intelligence that breaks the previous rules or recombines them by opposing analytical, practical, imitative, and computational intelligence. Sternberg (1985), Mednik (2008).
- Creativity is the conscious spontaneity of the subject and primary factor of social becoming. La Rosa (1977), Montuori and Purser (1997).
- Creativity is a process that can be described in teaching terms and modeled in the form of rules, models, or techniques. De Bono (1967), Munari (1977).
- Creativity is a process that has a direct relationship with the degree of intelligence. De Caroli (1987,2009)[15].

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[14] Creativity and capacity for radical change derive from critical consciousness, a thesis supported by the main exponents of the Frankfurt School (Horkheimer, Marcuse, Habermas). As for the dynamics of negative thinking, they are brilliantly described by T. W. Adorno in *Dialettica Negativa* (Einaudi, Torino, 1970) and *Parole Chiave. Modelli Critici* (SugarCo, Milano, 1974).

[15] In M. E. De Caroli, *Pensare, essere, fare…creativamente. Riflessioni teoriche e indagini empiriche in età evolutiva,* Franco Angeli, Milano, 2009, the author opposes both those who support the low correlation between intelligence and creativity and those who affirm the inversely proportional relationship between the two factors. According to De Caroli, creativity and intelligence go hand in hand. Among other things, the book also deals with all the existing tests that have attempted to investigate and measure the creative phenomenon. As the tests are unrelated from our object of investigation (which is concentrated on the techniques of stimulation of creativity), we will not dwell on them; however, it is interesting to note that at the

- Creativity is persuasion and leadership of genius. Simonton (1988).
- Creativity is a combination of knowledge, intellectual skills, personality, and motivation. Sternberg (1988), Csikszentmihalyi (1999, 2013).
- Creativity is the ability to think in images. Morgan (1996).
- Creativity is the hybridization between study, work, and leisure; leadership and organization; group and individual; emotion and rule; fantasy and concreteness; and otium and negotium. De Masi (1989, 2000, 2003).
- Creativity is a positive correlation between technology, talent, and social tolerance. Florida (2002).
- Creativity is a cultural container that processes change. Melucci (2004).
- Creativity is the instinct of combinations that relates to local development. Battisti-Federici (2007[16]).
- Creativity is an evolutionary effect of the discontinuity determined by the social action of the individual. Weber[17].
- Creativity is discontinuity determined by social facts external and extraneous to the subject's will. Durkheim.[18]

basis of these tests, meta-rules similar to those found in the stimulation techniques highlighted in our census are recognizable.

[16] Definition borrowed from Vilfredo Pareto.

[17] Max Weber does not speak explicitly of creativity but of the change and fluidity of social development determined by the individual's decision or by the interest of the individual. This has been affirmed several times in *Il metodo delle scienze storico sociali* (Einaudi, Torino, 1958) and *L'etica protestante e lo spirito del capitalismo* (Sansoni, Firenze, 1965). This concept is taken up and reinterpreted as a conscious and rational creative capacity for social action by F. Ferrarotti in *Max Weber e il destino della ragione* (Laterza Bari, 1968) and M. La Rosa in *Sociologia della Creatività quotidiana* (Faenza Editrice, Faenza, 1977).

[18] Durkheim (like Weber) also did not make an explicit definition of creativity. However, he conceived of change and innovation as discontinuous phenomena determined by the social system. Social facts influence and push the subject towards action. In this sense, the subject is passive: their creative spirit is heterodirected by the changing social rules, influencing the change of the subject. This is what Michele La Rosa (1977) interprets when he analyzes Durkheim's thought, in particular in the work E. Durkheim, *Breviario di Sociologia* (Newton Compton Italiana, Milano, 1971).

- Creativity is a predictable process of social mechanics derived from non-logical actions. Pareto.[19]
- Creativity is an "imaginative" process that allows us to jump from one perspective to another. Wright Mills.[20]
- Creativity arises from conflictual processes where conflict is not meant to deny unity but is a way to resolve dualisms and achieve unity; a process in which the order is the point of arrival. Simmel (1908).[21]
- Creativity is the negation of the process of classifying the phenomenal reality in pre-established categories. Russell, Adorno, Gödel.[22]

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[19] Vilfredo Pareto (like Weber and Durkheim) does not analyze the creative process. In *Trattato di Sociologia Generale* (ed. di Comunità, Milano, 1964), he distinguishes two types of actions: a. the logical actions dictated by an abstract economic rationality or by the technical rationality that derives from the congruence of means and ends (for example, the engineer who designs the construction of a bridge); b. non-logical actions, that is, social actions, of which the most constant part is not directly observable but is the basis of the actions (the residues) while the most variable part (derivations) is the one that appears most frequently as a posteriori justification of the validity of the actions performed. After all, the actions defined as non-logical exist but they are absolutely foreseeable or can be determined a posteriori. In this way, creativity seems to be mechanically determined by the logical actions of a social system that guides and directs the subject even when they act in a non-logical way. James Webb Young derives his definition of creativity from Pareto.

[20] In *The Sociological Imagination*, published for the first time in 1959 by Oxford University Press in New York, Charles Wright Mills pioneered the relationship between imagination and sociological paradigms by stating that: "imagination is the capacity to shift from one perspective to another – from the political to the psychological; from an examination of a single family to a comparative assessment of the national budgets of the world; from the theological school to the military establishment; from considerations of an oil industry to studies of contemporary poetry" (Mills, 1959, p. 7).

[21] The definition is obtained indirectly on the basis of the considerations that the author himself makes in his famous *Sociology*, published for the first time in 1908; coincidentally the same year as Poincaré's statements. Furthermore, Simmel's considerations on the creative process follow Hegelian thought – thesis-antithesis-synthesis.

[22] There are analogies between Russell's antinomy, Gödel's incompleteness theorems, and Adorno's theories. These three authors, although starting from different disciplinary fields, basically build a similar system of destructuring the "absolute boxing", making evident the paradoxes that emerge when trying to reconcile correctness with completeness or classification with comprehensiveness. The synthetically

- Creativity is a free, happy and fantastic ability to perceive an object without it being present. Marcuse (1937).
- Creativity is a process in which order is only a particular case; a moment within a disordered process, the development of which does not take place uniformly and linearly but due to catastrophes or discontinuities. Thom (1980), Morin (1992).
- Creativity is based on the inseparable relationship between mind and body. Damasio (2003).
- Creativity is a process of reducing complexity, built around some fundamental laws of simplicity. Maeda (2006).
- Creativity consists of doing something new that also inaugurates a new category, a new genre, or a new type of thing. Gold (2007).
- Creativity is a process that generates gradual, linear, and non-discontinuous innovations. It is a process in which an entire popular community also participates anonymously. The legacy of this process is then recoded by the scientist or elitist intellectual who, erroneously, is perceived as the only manager of this process. Conner (2008).

As is evident, the aforementioned definitions reflect not only the disciplines of research but also the personal opinions of the scholars who support them, as well as the influences of the eras. Furthermore, in all the definitions (many of which are seemingly antithetical to each other), it is possible to trace analogies that lead to a set of meta-rules that attempt to process the rules of creativity. Words such as novelty, utility, negation, reversal, spontaneity, freedom, intuition, catastrophe, reduction of complexity, combination, synthesis, process, rule, and reversal of common rules are recurrent in the definitions given. The real rift between the different definitions would seem to lie between two schools of thought: the rationalist, which believes it is possible to "learn" to become creative; and the spontaneist, convinced of the uniqueness of the rules imposed by an individual talent. However, the dialectic between the different visions triggers a recursive revision of the way of understanding and studying creative processes. Each vision follows its own rules and indirectly stimulates new interpretations that are also useful to those who support the opposite view. The term creativity, socially shared since the twentieth

reported definition reconciles the visions of three great authors who have attempted to overcome the customary rules of knowledge, creatively restructuring the approach itself to knowledge.

century, expresses a new way of conceiving the concept of the unexpected, shifting attention towards the hidden rules that can determine it.

We must introduce a further aspect of the term creativity, one of sociological relevance: the second-order logic hidden behind every creative process. Creativity is not simply the ability to overcome the rules after metabolizing them; it is interpreted and, therefore, pragmatically perceived (because the interpretation of words indirectly determines their practical and social use; the change in interpretations and definitions also changes the way of knowing) as the ability to encourage new associations. Obviously, there must be a rule or rules hidden behind this ability, one or more meta-rules that many social scientists have tried to classify in order to manage, monitor, evaluate, measure, or stimulate creativity. Starting from the social and historical assumption that the concept of creativity has secularized the concept of talent, proceduralizing the methods through which it is possible to arrive at the generation of new ideas, we can affirm that creativity is the medium, a container of messages that determine the system's self-referential evolutions in the form of incremental or radical innovations. From this point of view, creativity is the daughter, ante-litteram if we want, of the Luhmanian system/environment paradigm.

Creativity is a proactive catalyst for procedures that trigger evolutionary forms. The definition of a proceduralized creative process is a complex and adaptive socio-systemic event. It is also one of the operations of the object of analysis itself (defined as a creative process) since it is accomplished with writing. Writing is the main medium (although not exclusive) through which creativity generates models. More generally, the creative process is determined with any type of language, whether natural or formal. With it, a structural coupling matures in the sense that the generative and recursive capacity of one is strictly dependent on that of the other. The description of the creative process accomplishes what is described: a creative act on one’s definitory status. Between the nineteenth and twentieth centuries, many definitions of creativity were given: each of them captured a series of aspects of creativity through ever-changing definitions generated by the same creative processes.

In this sense, our research object also implements the operating procedures of the process in which it occurs. It understands its object as one that describes itself. Furthermore, each definition is imbued with the values and cultural variables of the epochs in which they were formulated. This means that every definition of creativity – as we have already seen in the definitions listed above – brings with it a description of the object, the subject who

made it, the social values within which this definition was conceived, and the creative description of the subject who made it. Using a formulation that derives from the logical analysis of linguistics, we could say that every social definition of creativity and its process brings with it a description of the sociological theory of the creative process, which has an autological component since it includes both a theory of society, which a particular observer produces when they talk about the creative process (inserting it in the given theory), and the language that this observer uses (language/medium that describes the creative process self-describing itself). Creativity is capable of self-description and manifests itself through a proceduralized process useful for the functional differentiation of contemporary societies. The different creative processes triggered by theories, models, techniques, procedures, and tea towels are the conventions – as Becker puts it – that allow the shared passage of knowledge and the social metabolization of new ideas.

1.3 Creative process as a set of procedures

When we say that creativity, as contemporaries define and interpret it, often arises from a proceduralized process, we tend to argue that there are strong procedures; that is, techniques adopted in an orthodox way, or weak procedures (canvases), but there are absolutely no creative processes without procedures. In jazz, we follow a pre-defined track that allows variations and improvisations on the theme up to total detachment; to write articles, essays, novels, you need a starting point, a rough program in the construction of a television format, you need a track; in the thought-shower sessions (previously called brainstorming) organized within communication agencies, semi-structured minutes are written that report some links between ideas and actions in the form of a diagram; in the focus groups, the discussion begins with a series of keywords that trigger reflections and an expert moderator has the task of reorganizing them following a formally structured path; painters and sculptors prepare sketches for the actual realization; business managers prepare reports or schemes to follow for meetings; the script of a film starts from the elaboration of the subject, paradigm, development of the plot, and dialogues. The writer Kundera speaks of procedures,

> dans chaque composition musicale, il y a beaucoup de technique: l'affichage du thème, son développement, les variations, le travail polyphonique souvent automatisé, les remplisseurs d'orchestration, les transitions, etc. Aujourd'hui on peut écrire de la musique avec l'ordinateur, mais dans l'esprit des musiciens l'ordinateur a toujours existé: ils pouvaient même écrire une

> sonate sans une seule idée originale, en développant simplement les règles de composition "cybernétiquement" (...) avec le roman, ça se passe plus ou moins pareil: même le roman est embarrassé par la "technique", par les conventions qui agissent à la place de l'auteur: présenter un personnage, décrire un environnement, cadrer l'action dans une situation historique[23].

Consequently, creativity and its processes are symbolically generalized media – as hypothesized in the previous paragraph. In this way, creative processes are considered operationally closed systems, subject to autopoiesis and capable of self-describing. The abundant presence of manuals dedicated to the theme (in the publishing world there are plenty of vademecums that illustrate rules to stimulate creativity, but also treatises that describe the relationship between creativity and innovation; there are numerous biographies and autobiographies of innovators and creatives who have tried to describe their creative process in retrospect by dismantling it, deconstructing it, and subjecting it to verifications and comparisons) demonstrates the self-reflexivity and high proceduralization to which the creative process is subjected today. According to a famous definition given by Luhmann (1991) and borrowed from Talcott Parsons (1965 and 1981)

> i media della comunicazione simbolicamente generalizzati sono media autonomi caratterizzati da un riferimento diretto alla improbabilità della comunicazione. Essi presuppongono la codificazione sì/no del linguaggio e si assumono la funzione di rendere oggetto di aspettativa l'accettazione di una comunicazione nei casi in cui è probabile il rifiuto[24].

By giving an open interpretation, the symbolically generalized media (according to Luhmann they are money, power, religion, love; I add the creative process) constitute a functional equivalent to morality with the difference that while morality tends to unification, the symbolically generalized media are generated in large numbers and for specific constellations of problems. If we want improbable selections of meaning to become probable, we must use a plurality of codes that are specialized for this end. Symbolically generalized media as expression was used for the first time by Parsons. By symbolic, Parsons intended to refer to the difference between Ego and Alter; that is, the social dimension. By generalized, he meant to refer to the distinction between situations; the material dimension of the sense which is processed from time to time [25].

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[23] M. Kundera, *L'art du roman,* Gallimard*,* Paris, 1986, page 107.
[24] N. Luhmann, R. De Giorgi, *Teoria della Società*, Franco Angeli, Milano, 2003, p. 105.
[25] T. E. F. Parsons, *Il sistema sociale,* Edizioni Comunità*,* Milano, 1965.