

Uncertainty as a constitutive condition of human experience. An extensive review of the paradoxes and complexities of sensemaking processes in the face of uncertainty crisis

De Luca Picione, R.¹ & Lozzi, U.

Abstract

The work presents an extensive review on the theme of the crisis of meaning generated by uncertainty. Generally, uncertainty is considered an affective-cognitive condition of human experience that is characterized by a crisis of predictability of the expected future, of decision-making, of identity, of sociability, and of agency. Uncertainty requires an intense effort of sensemaking to re-establish a worldview as ordered and predictable. On the one hand, uncertainty is a natural condition of human experience, on the other hand it is the exceptional condition of discontinuity/rupture/turning point generated by the breaking of common sense, of the habits of daily life and by the crisis of the frames of meaning of the worldview. A broad and varied set of perspectives from the interdisciplinary fields of anthropology, philosophy, semiotics, narrative studies, cognitive and social psychology, cultural psychology and psychoanalysis are considered. The authors discuss a series of defensive processes, control recovery strategies, meaning making processes for the re-establishment of an orderly vision of the world, of one's own identity and one's own social systems of belonging. Finally, uncertainty as a condition of decoupling with one's own world is therefore the condition that makes possible the transformation, development and generation of new semiotic systems of relationship by means of sensemaking processes. This is followed by a reflection aimed at enhancing the ability to sustain uncertainty, to contain and to elaborate it, and to enhance the reflective capacity against the thrust of the denial, the thrust of its elimination through totalizing, saturated, rigid and extensive defensive strategies.

Keywords: *Uncertainty; Sensemaking process; Crisis of sense; Socio-cognitive processes; Psychoanalysis, Cultural Psychology; Semiotics; Liminality; Defensive Strategies; Processes of Containment and Elaboration.*

DOI: <https://doi.org/10.32111/SAS.2021.1.2.2>

¹ Giustino Fortunato University, Benevento, Italy.

Corresponding author: Raffaele De Luca Picione, r.delucapicione@unifortunato.eu

Introduction

Since the twentieth century, the theme of uncertainty has increasingly occupied the attention and interest of the epistemological, scientific, philosophical, anthropological, sociological and psychological debate. The beginning of the last century is characterized by the overwhelming entry of uncertainty on the scene of human knowledge. Uncertainty begins to be recognized as a constitutive element of nature through the developments of contemporary physics beyond the Newtonian deterministic view. The epistemological bases of knowledge are gradually shaken by the theory of relativity and the discoveries of quantum physics (with the principles of complementarity and indeterminacy), the idea of the field as an emergent and overdetermined interaction of the single parts that compose it. The assumption of a probabilistic logic overcomes a mechanistic and deterministic vision of the world. We witness a gradual and exponential growth of the theories of non-linear and open systems, the theories of chaos (with the idea of perturbation, equifinality, multideterminism and strange attractors) and the theories of complexity.

In the field of the formal logics, Gödel (1931) elaborated the theorems of incompleteness. They identify true propositions that cannot be proved. However, these systems, although incomplete and undecidable within them, could be validated in other and more extensive systems. These, in turn, in a circular process, are not able to demonstrate every formulation contained within them but will refer to new attempts to overcome the limit of each system. In these terms, a never-ending circle

of demonstrations (potentially infinite) has opened. The methodology derived from the theorems on incompleteness provides for the overcoming of the logic of true and false and, in the challenge to complex reality as it is never clear and defined, it accepts both the dimension of uncertainty and the continuous confrontation with the undecidable that does not necessarily lead to a problem (Lolli, 2007).

For their part, the anthropological, sociological and psychological fields also recognize the centrality of uncertainty in human experience. The idea of a consciousness that has a clear, lucid and complete vision of oneself and its world loses its solidity and monolithicity. In addition, the rationality is not anymore the absolute paradigm of the human knowledge (Mangone, 2021).

Psychoanalysis with the notion of the unconscious introduces an irreducible subjective division: one's identity, one's will, one's bonds with others are not fully under the control and knowledge of the conscious individual. At same time, the foundation of the social bond underlying civilization becomes another element of uncertainty as it dissolves more and more into a series of innumerable proposals that cannot be reduced to each other. Where are the origin of sociality? There is a kaleidoscopic proliferation of hypotheses: from the divine will to an original state of goodness in nature, from the need for protection and security to the submission under a coercive force, from the need to control aggressive and sadistic impulses to the inclusion of a prosociality on a genetic basis. The catastrophic sequence of historical social events throughout the twentieth century up to the last

years of the third millennium (De Luca Picione et al, 2021; Schimmenti et al, 2021; Scablabrini et al, 2021; Venuleo et al, 2021) makes it impossible to base the certainty of the social bond and civilization on the knowledge of a precise foundation.

According to the lesson of Edgar Morin (2000), human thought has always faced complexity, trying to reduce it or translate it. Furthermore, in the postmodern time of globalization, where knowledge is impoverished by disintegration through an accelerated process of fragmentation, Morin welcomes the complex thinking, i.e. the need to learn to be surprised and to accept uncertainty and the unexpected as a strategy of social science called to extricate oneself in a world in constant transformation.

This incessant social metamorphosis assumes the connotation of a *liquid society* (Bauman, 2006) wherein there is a pressing of an existential insecurity, the uncertainty of one's own stability and personal insecurity in reference to one's own embodied entity. Human being has only one certainty, that of living in uncertainty. According to Bauman, progress - the same that at first induced every form of optimism - now represents the threat of unstoppable and inevitable change, it does not bring peace and relief, but constant crisis and tension. Instead of great hopes and sweet dreams, progress now evokes sleepless anguishing nights, nightmares of 'being left behind', fear of missing the train of opportunities or being kicked out from a world that accelerates more and more.

The discomfort of modern civilization evoked by Freud (1930) involved the sacrifice of freedom in the name of personal security and gain of order. The discomfort of modernity was therefore a consequence of the search

for security, which contemplated a very limited freedom to be able to pursue happiness. On the contrary, today, for Bauman, the discomfort of postmodernity derives from a type of freedom that assigns very little space to individual security. In this game of freedom, there is no clear border between winners and losers: for both of them being free is equivalent to submitting to the 'whims of fate' and therefore of uncertainty. The loser stops before he has reached despair and the winner stops before he has obtained absolute certainty of his means.

In an even broader and universal discourse, we find these themes in the reflection of Karl Jaspers (1925). According to the German psychiatry and philosopher, human being, by his constitution, lives constantly within the splitting of subject and object, that is to say, man is endemically immersed in a condition of uncertainty: he always tends to something, to an end, to a purpose, to a value or to any good. This tension often manifests itself in a conscious form that is not at all clear. For Jaspers, the more man reaches knowledge and vocation, the more he becomes aware of the antinomical structure of the world: everything he strongly desired (construction in the subjective world) is followed by an unwanted one (destruction in the objective world). This is a real antinomical split between the world and ourselves. It leads in rational terms, into contradiction and therefore into uncertainty. Man is called to deal with so-called *limit-situations* (*Grenzsituationen*), in which the finiteness and the antinomical nature of existence emerge. Limit-situations represent the very structure of the human since antinomicity accompanies not only thinking, knowing, but also its capacity for evaluation, judgment and action. The limit-situations are *par excellence* those of struggle,

death, hazard/random and guilt. An antinomy is implicit in each of them: struggle and mutual aid, life and death, random and sense, guilt and conscience are all couples in which the terms are closely linked and complementary. The common element in all extreme situations is the suffering and the incomprehensibility. In such conditions, the individual is faced with infinity and everything in a state of restlessness and suffering.

Human experience is inherently ambivalent and uncertain: it, in fact, inevitably moves between SELF and OTHERS and between PAST and FUTURE (Valsiner, 2007, 2014, 2021). Through the limit-experiences the subject is faced with a discontinuity of experience (De Luca Picione & Freda, 2022/forthcoming, 2016c), a rupture (Zittoun, 2006), a turning point (Bruner, 1990).

In the 40s and 50s of the last century, the Italian anthropologist Ernesto De Martino (2012, 2019) recognizes a profound affinity between the experience of “*the end of the world*” in the cultural apocalypse and in the psychopathological apocalypse. This leads him to focus on the theme of the *crisis of presence*. The anthropologist defines presence as the ability to preserve the memories and experiences necessary to respond adequately to a specific historical situation, actively participating in it through personal initiative and going beyond it through action. Presence implies participation as a subject to a shared context endowed by meaning. One of the most important forms for the redemption of presence is the *rite*, which through its stability, repetition of forms and behaviors offers a model of reassurance in the face of the unexpected, uncertainty and the loss of sense of the world.

Also in van Gennep's anthropology, the rite is a very powerful symbolic and cultural tool capable of supporting the transitions and

transformations of human life (van Gennep, 1909). It celebrates, identifies, and conveys those moments of individual life and all that are always on the verge of representational impossibility. The rites of passage accompany the transformation of the life of an individual or a group and concern all the critical moments of human life (birth, baptisms, rites of passage to adulthood, marriage ceremonies, funeral rites, etc.). Van Gennep's anthropological model for the study of rites of passage consists of a process of three phases: a) *separation* (from normal life), b) *margin*, and c) *aggregation* (understood as a return to social life through the acquisition of a new status). Following the separation from daily habits through the symbolic break through ritual forms, people go through an intermediate phase, defined by Van Gennep *margin* or *limen*. This represents an area of ambiguity, a sort of sociocultural limbo, in which identity is placed in check through processes of *ambiguation* and *hybridization* (one can simultaneously be neither adult nor child, neither male nor female, neither man nor animal, neither alive nor dead). It is a condition of *total uncertainty*, in which the previous representations of the world, one's own identity and relational schemes are no longer useful and new symbolic tools are not yet available for new forms of action, thought and feeling. This transition phase is a transformation phase in which the initiates are deprived of their past identity.

This marginal phase can take place through the subtraction of the meaning, of the name, of the identity being considered invisible or being masked or by moving away from the central spaces of the community and positioning at its margins, in the suburbs, in isolation. Only after passing through this phase,

and through ritual ceremonies of re-aggregation, the initiates are reintroduced with a new status now recognized and shared within the community. The ritual form – by means of a symbolic and shared form - channels the passage from a social state (which defines one's identity) to another, allowing not only the overcoming of a border area (non-identity, ambiguity, uncertainty, confusion and coincidence of opposites) but making sure that individuals can make use of this experience in a creative, innovative and meaningful way for themselves and for the entire community.

Victor Turner (1983) re-takes Van Gennep's model and emphasizes the importance of the transition phase, stressing the concept of *limen* ("threshold", "margin", "border" in Latin) and proposing the *liminoid* (namely, *limen* + *eidos*, Greek term meaning form, idea, model). The liminoid is considered as the space in which novelties can occur, where it is the experimentation of the new and the different, the introduction of a new knowledge about the world. The novelty emerges through the free recombination of familiar elements with unfamiliar elements. It is a space for play and recreation, for theatrical and performative representation, which recomposes, reconfigures and often subverts the constituted social orders. The subjective and social time of the uncertainty is the transitory condition between the past and the new order.

It seems useful to recall in this introduction on the theme of the relationship between sensemaking processes and the experience of uncertainty, William James's reflection on the *perception of reality* and Alfred Schutz's *multiple realities*. According to both authors, the human experience moves within a continuous flow through multiple worlds (Possenti, 2005). James calls them "*sub-universes of the real*" (1890b) and Schutz defines them "*finite*

provinces of meaning" (1944). These are contextual situations in which the individual experiences a frame of meaning that makes the living endowed by meaning and provides an orientation for the future.

It is not possible here to deepen the depth and extent of these arguments; however, it seems useful to recall the importance of *habits* and *common sense* in the construction of the relational context of individual and social life. James considers habits as a system of relationships that offer a sense of stability, repetition and automatisms aimed at conveying human action, simplifying behavior, offering support and freeing attention and receptivity for other purposes (James, 1890a). Schutz notes the importance of suspending doubt and judgment (an *epochè* of common sense) for the social and constructive sharing of daily life (Schutz, 1932, 1944). Only starting from an objectified naturalized and shared basis of the assumptions of experience (namely taken-for-granted), the actions, the choices, the behaviors and social interactions become possible. In this way, we note that the stability of the context, the foreseeability, the obviousness and predictability of meaning (in terms of concrete, pragmatic, agentive dimensions) are constantly sought to found the basis of human experience. The two authors – although with their differences - are strongly interested on the other side of the coin, namely the changes, the passages from a frame to another one, the constant flow of transformation of the experience and its development.

Recognizing the fundamental ambivalence of human experience within a dialectical process of continuity and discontinuity (De Luca Picione & Valsiner, 2017), this work proposes a long and extensive examination of the notion of *uncertainty* and the need to con-

struct sensemaking processes aimed at restoring the sense of control, predictability, narrative continuity of one's identity and sharing within relational and social systems.

Multiple theoretical perspectives are examined below: from narrative and semiotic processes aimed at developing new forms of continuity, to socio-cognitive theories based on the study of uncertainty management strategies, up to the recognition of the value of uncertainty and its importance in the field of psychoanalysis.

Morin's principles of uncertainty of a complex world

According to the sociologist and philosopher Edgar Morin, the complexity of the world produces uncertainty as a natural implication of itself. Furthermore, the contemporary scenario based on a changing epoch (characterized by ambivalence of values and deep interconnection of systems) imposes to learn to deal with uncertainty.

The next educational processes need to confront with the relationship between uncertainty and knowledge. Morin proposes a series of tenets about this relation:

- A principle of cerebral-mental uncertainty that follows from the process of translation/reconstruction proper to all knowledge.
- A principle of logical uncertainty, as clearly described by Pascal: "neither is contradiction the mark of falsity, neither is non contradiction the mark of truth."
- A principle of rational uncertainty because rationality that does not maintain self-critical vigilance turns into rationalization.

- A principle of psychological uncertainty due to the impossibility of being totally aware of what happens in the machinery of our mind, where some part of the functioning remains unconscious. This makes critical self-examination difficult; our sincerity is an insufficient guarantee of certainty, and there are always limits to self-knowledge. (Morin, 2008, p. 44).

The strict connection between uncertainty and knowledge (under several forms) implies that reality is not matter of readability (in terms of immediacy mirror of the truth nature of the things). Each idea and each theory is a translation (or a mistranslation), namely an act of interpreting the experience.

Tolerating the uncertainty and learning to elaborate it entails the permanent risk of the illusion of the error, yet the rejection of it implies the worst risk of intolerance, of the dogmatic stance, the doctrinaire certainties, the denial of the importance of doubt, demand investigation, verification, and possibility of different perspectives.

The certainty is the result of parcelization of the complexity of the world, where the detail is isolated, framed, and treated as classifiable elements as in the Mendeleev table (Morin, 2008).

Human being is called to understand that the complexity means random incidents, chance, initiative, decision, crisis, the unexpected, the unforeseen, and awareness of deviations and transformations.

Uncertainty is also connected to a series of loops, where making decisions and choices is never a linear process. These loops are: a) *the risk-caution loop* (this uncertainty principle comes "from the dual necessity of risk and caution. Every act undertaken in an uncertain environment bears a contradiction between the principles of risk and caution, both of

which are necessary” – p. 45); b) *the ends - means loop* (“this is the uncertainty principle of ends and means. Since ends and means inter-retro-act on each other, base means put to noble ends almost inevitably pervert them and finally replace them” – p.46); and c) *the action - context loop* (“this principle of uncertainty show that “every action escapes the will of its initiator by entering into the play of inter-retro-actions of the environment in which it occurs. This is the ecology of action principle. Action risks failure but also risks diversion or perversion of its initial meaning, and may even turn against its initiators – p. 46).

The ecological complexity of the world implies that the uncertainty is also the form of a long term unpredictability. Also if we are able to foresee or to compute the short-term effect of an action or a choice, yet we are always confronted with an impossibility of predictability of effects in the long time. This argument leads Morin to argue that a decision can be a *wager* and/or a *strategy*. In the former prevails the *faith* (all kinds of faith: faith in a better world, faith in fraternity or justice, and all ethical choices), while in the latter prevails the *program* (namely a sequence of actions to be executed without variation in a stable environment) (p. 47). Morin considers that the decision-making in condition of uncertainty requires a dynamic dialectics between these two forms considering the above paradoxical loops.

Moscovici's social representation: making known the unknown

According to Serge Moscovici's psychosocial perspective, social representations are processes of knowledge that take the form of "*common sense theories*". They have a collective character, and are widely disseminated

and shared (they are therefore not imposed by any authority). Rather than providing constraints, they offer orientations and meaningful resources for actions and understanding of the world and the environment around us. The theory of social representations is concerned with explaining how people reconstruct social reality with the aim of controlling it, adapting to it, acting and sharing it with others.

Moscovici highlighted how - despite an evident series of epistemic differences - there is nevertheless some interdependent relationship between scientific knowledge and the knowledge of common sense. Typical is the "*transfer process*" of knowledge. A scientific theory becomes part of common sense by going through a process of re-elaboration and reconstruction by the different social groups. These processes are characterized by two precise mechanisms: *anchoring* and *objectification*.

Anchoring allows the assimilation of the unknown to the known, that is, to make the unknown familiar. In this way, it works in such a way as to use already existing categorical schemes to hook and assimilate unknown, uncertain and unfamiliar objects and experiences. In this situation, memory tends to predominate over logic, and the past over the present. In other words, everything new is brought back to something already experienced.

About objectification, it fulfills the important function of giving material consistency to ideas, that is, of giving substance to abstract conceptual schemes by translating them into images. Think of Moscovici's research in the 1960s on the passage of abstract and darker notions of psychoanalysis (for example, unconscious, drive, neurosis, repression, censorship, etc.) to common sense language through a process of simplification and

objectification (Moscovici, 1961). Through steps of de-contextualization and re-organization into figurative schemes and easy-to-conceive iconic forms, abstract notions become concrete, accessible and - to a certain extent - coherent. Through repeated passages of these notions through interpersonal communications, public debates, dissemination of the press, TV and internet, scientific concepts are rooted in common sense giving rise to a flourishing production of stories, narratives, and even those that once known as "Urban legends" have now become known as "fake news" (characterized, however, by an accelerated speed of production and decay typical of the hyper-connectedness of our media).

The functions of social representations are three. The first function is to make familiar what is unfamiliar and it represents the outcome of the anchoring. The second function of social representations is to foster interpersonal and social exchanges. Representations can be handed down from generation to generation, they help to create a social context, a culture, in which individuals share routine relationships, meeting and conversation rites (they function as a shared code for action and interaction social, as systems of shared knowledge that guide and orient in behavior).

The third function is that of normativity and identity construction. Social identity is a representation of the self, which is derived from a categorization process (based on belonging and sharing representations within one's own group). Social representations work as powerful processes against the uncertainty of the world.

Bruner's narrative sensemaking as reply against the violation of the canonic view of the world

Jerome Bruner (1990) believes that it is culture and not biology that forms the mind of man. This presupposes the *centrality of meaning* (as an interpretative process and construction of reality) against the idea of information (as a result of the computational action of coding-decoding). The meaning takes a public and social form rather than a private and autistic one. The meaning of anything is inherent in a recursive system of relationships that are historical, causal, inclusive, spatial, affective, and so on. The meaning of things, of the world, of reality is not given but is sought, discovered, constructed each time according to the reference of the cultural context.

Such a sensemaking process is inherently narrative, cultural and intersubjective. It does not respond so much to logical, categorical, verifiable assumptions (for the purpose of a paradigmatic version of mental functioning) (Smorti, 2020). According to Bruner, the narration has several characteristics, some of them are:

- *Sequentiality*. The sequencing of events, mental states, events involving human beings in the guise of characters or actors gives order to the experience and makes sense.
- *Indifference to the facts*. The narration can be real or imaginary without compromising the strength of the narration. Furthermore, the narration performs a mimetic function.
- *Management of deviations from the canon*. The narration has the specific ability to establish links between the ordinary and the exceptional, between the familiar and the unknown, between the certain and the uncertain. The ordinary is what people take for granted in reference to the world around them.

The obvious, ordinary behavior is experienced as canonical and therefore self-explanatory. On the contrary, faced with a deviation from the ordinary, if someone is asked what is happening, it will spontaneously produce a version of the facts that contains justifications for this deviation.

- *Theatricality*. A narration, capable of constructing meaning, has five elements: an actor, an action, a purpose, a scene and an instrument. Furthermore, it addresses also the problem, which consists of an imbalance between the previous five elements: an action not suited to a particular purpose in a certain scene and which requires resolution.
- *Morality*. Deviations from the canon refer to moral issues such as legitimacy, normativity, moral commitments and values. A narration, therefore, necessarily refers to what is morally valid, correct, or uncertain.
- *Uncertainty*. The narrations unfold themselves on an uncertain level of reality. The narrations unfold simultaneously both on the level of action and on that of the subjectivity of the characters. It is precisely the consideration of uncertainty, of surprise, of not knowing that distinguishes history from fact. The narration frequently uses metaphorical language, does not have a linear course, is open and leaves a space between reality and imagination.

According to Bruner (1990), narration, as a process, is made possible by the symbolic and linguistic resources shared within a cultural and intersubjective relationship. It is a means for the construction of the meaning of

human action and intentionality. It mediates between the canonical world of culture and the more idiosyncratic world of beliefs, desires and hopes (in reference both to possible hypothetical versions of reality and to the plurality of points of view). Narration is the process of construction of meaning that allows us to build our own identity in relation to others, to manage the crisis, the turning points, the violation of expectations and to face the situation of uncertainty and unpredictability.

Valsiner's semiotic mediation on the perennial border of uncertainty

According to Jaan Valsiner's cultural semiotic perspective, the sensemaking process of experience is a complex dynamics of continuous mediation between the *already-given* of the past and the *not-yet* of the future with its extent of unpredictability and uncertainty (Valsiner, 2007, 2014, 2021). The development of the human being is a systemic-open phenomenon, involving *feedforward* processes that guide the organism to face the uncertainty of future states and its relations with the environment.

In this perspective, semiotic mediation becomes the central principle of all human psychology. *Semiotic mediation* devices - that is, signs of various forms operating in dynamic configurations - catalyze the human processes of acting, feeling and thinking. From this principle, we deduce the basic assumption of functioning of the human psyche: human beings produce signs, use them to organize their life, to guide their passage towards the future, and abandon these signs when they are no longer needed. Signs "*stand in the place of*" something (other than themselves) according to some aspect and for some purpose (Peirce, 1935; Salvatore et al, 2021).

Valsiner claims that the necessity to create signs is the result of uncertainty of living, namely the need to make decisions at *bifurcation points* (that is, each moment of the present where the future appears unknown and many scenarios are equally probable). If there were no uncertainty in human living, there would be no need for the invention and use of signs to reflect upon the life course. Only when such uncertainty exists—at bifurcation points—is the invention of signs necessary.

For this reason, the signs act to "adapt" to an environment in constant evolution and with a constantly uncertain outcomes. Signs play a dual role in organizing the continuous flow of experience: that of giving shape to immediate ways of "being in the world", as well as of producing a forward orientation towards the indeterminate future.

The adaptation therefore appears as a sort of anticipation of possible and personally desirable future conditions. Human beings are goal-oriented actors who firstly create goal orientations and then, through signs, attempt to pre-adapt to expected conditions.

In the present moment, the sign not only "represents" a state of the world, but also "is" that state of the world. The meaning of a sign is not given once and for all but it is only temporarily stable. Crises, thresholds, turning points, uncertainty, ambiguity and ambivalence put in motion affective activation, the need for a new balance and the dynamics of development (De Luca Picione & Valsiner, 2017; De Luca Picione, 2021a, 2021b, 2020b).

By means of the sign, human being is able to realize process of *presentation*, *representation* and *interpretation*. All these processes can be considered as different forms to deal with the forms of uncertainty in the becoming of the time.

From trauma to reformulation of the meaning

According to Janoff-Bulman (2004, 2014), a person's patterns of meaning are constructed for the purpose of understanding events, predicting them, and exerting some control over them. This implies that a trauma is configured as the failure of these schemes in their fundamental function. For this reason, they appear to be seriously compromised. The individual experiences a sense of helplessness - due to the lack of control -, and a sense of strong anxiety - due to the lack of ability to foresee the event and to interpret it according to existing schemes, which are ineffective. A good part of the structures of signification that the individual uses to interface with the world collapses, and she then finds herself in a condition of pain and disorientation.

Following a trauma, however, over time, individuals attempt to overcome that experience through a restoration of their internal world, that is, through a process of restructuring their own patterns of meaning (Janoff-Bulman & McPherson Frantz, 1997).

Janoff-Bulman (2004) proposes some possible healing modalities, namely possible paths through which the individual is able to overcome a traumatic experience. These modalities involve a profound restructuring of the pre-trauma patterns of meaning, and of the worldview subsisting by virtue of them.

The first modality is defined as "*Strength through suffering*". It refers to the fact that, following the confrontation with a great pain and a strong stress caused by a traumatic experience, the individual becomes not only aware of possessing a strength he did not think he had, but he also develops new skills and resources to allow him access to new possibilities. In his reaction to the trauma and its consequences, however, the individual would

still be able to acknowledge the fact that, however painful the consequences of the traumatic experience were, he survived them. The very idea of having overcome, in some way, such a dramatic event without falling apart leads the individual to reconstruct the patterns of meaning inherent in the self, and inherent in the self in relation to the world, attributing to one's person new qualities and positive characteristics.

In other words, the very fact of having survived a traumatic experience could lead the individual to believe that he must have some attribute by virtue of which he was able to resist the profound suffering experienced.

The second modality is defined as "*psychological preparedness*". It consists in the fact that a traumatic experience can give rise to processes for which not only the individual appears prepared, in the future, towards other similar experiences, but is also less traumatized. This happens through a reconstruction of one's own interpretation schemes of reality so that they are able to accommodate the possibility of experiencing traumatic experiences in the course of one's life. The experienced event can be defined as traumatic precisely because it violated the individual structures of meaning, which were not capable of predicting it and consequently controlling it. The reconstruction of the structures that can take into account the possible onset of similar events means that - in the event that they actually take place - they are less deviant from the canonical, less difficult to interpret than they were by virtue of the pre-trauma schemes.

The third modality is defined as "*existential reevaluation*" and consists in a change of the overall view of the world in response to a traumatic event. People report a gain of greater ability to appreciate their own life. Specifically, there is a greater appreciation of

close interpersonal relationships, entertained with family and friends, and a greater approach to spirituality. This is attributable to the fact that, before a traumatic event, individuals tend to have a vision of the world as responding in a just and equitable way to their actions, i.e. it is believed that if you are a good person and behave with caution, then nothing bad will happen to you. A traumatic event collapses these assumptions and forces the individual to confront a feeling of absurdity and lack of meaning. In response to this and the anguish that follows, human beings have to try to build new assumptions and values, in order to signify what has happened to them and insert it into a coherent structure. The recognition of the possibility that one's life and the things one possesses may be lost leads the individual to reevaluate these things in a more positive sense, living them not as something taken for granted, but as a constant gift, something of being thankful for (Janoff-Bulman, 2004).

All the ways of overcoming a trauma involve a reconstruction of one's own meaning schemes. A traumatic event, by virtue of the great perturbations it causes in the individual, necessarily produces drastic changes, for example:

- The self-attribution of a great force, capable of comparing such experiences.
- A profound restructuring of one's own systems of meaning, capable of predicting and controlling similar events
- A distortion of one's own standards of hedonic evaluation of reality, by virtue of the trauma.
- The delegation of one's existence to an entity powerful enough to be able to provide the strength and resources to confront such a great threat.

In any case, the internal world of the individual and its meanings are profoundly revolutionized.

Socio-cognitive theories on strategies for restoring the control conditions of experience

In this paragraph a series of socio-cognitive theories are presented. The wide focus of the theme is that of elaborating the idea according to which in the face of uncertainty, of lack of predictability, and of crisis of meaning (as a regulator of experience), several recovery strategies are implemented in order to restore a sense of control over one's own experience and the surrounding world.

The origins of the theory of cognitive dissonance

Considered prodromal with respect to the others that will follow in the years, the theory of cognitive dissonance comes to life in 1956 with the publication by Festinger, Riecken & Schachter of a scientific report on the observation of a small community convinced that the end of the world is coming in on a specific day.

Dissonance and consonance are relations among cognitions – that is, among opinions, beliefs, knowledge of the environment, and knowledge of one's own actions and feelings. Two opinions, or beliefs, or items of knowledge are *dissonant* with each other if they do not fit together – that is, if they are inconsistent, or if, considering only the particular two items, one does not follow from the other. For example, a cigarette smoker who believes that smoking is bad for his health has an opinion that is dissonant with the knowledge that he is continuing to smoke. He may have many other opinions, beliefs, or items of knowledge that

are consonant with continuing to smoke but the dissonance nevertheless exists too.

Dissonance produces discomfort and, correspondingly, there will arise pressures to reduce or eliminate the dissonance. Attempts to reduce dissonance represent the observable manifestations that dissonance exists. Such attempts may take any or all of three forms. The person may try to change one or more of the beliefs, opinions, or behaviors involved in the dissonance; to acquire new information or beliefs that will increase the existing consonance and thus cause the total dissonance to be reduced; or to forget or reduce the importance of those cognitions that are in a dissonant relationship. (Festinger, Riecken & Schachter, 1956, p. 36)

To be successful and achieve the goal, these attempts must obtain some form of support from the physical and / or social environment. Without such support, even the most determined efforts to reduce dissonance are doomed to fail. The pivotal hypothesis is people who for some reason find themselves sharing certain beliefs, when the latter are denied and therefore invalidated, then strengthen their beliefs about them. This cognitive dissonance causes a certain degree of emotional distress and a consequent attempt at rebalancing which certainly results not in the abandonment of the erroneous belief but in its strengthening. This result appears as valid mainly for people, in the name of their belief, have invested a large part of their energy in it, sacrificing everything else. It must be emphasized that the theory of cognitive dissonance, while developing in intra-individual terms (discomfort of the individual struggling with two contrasting cognitions), however is the result of a process of interpersonal construction of the meaning of reality (negotiations and comparisons of meaning that converge in an implicit system of mutual norms and expectations specific to that group).

The psychology of worldviews

The worldview provides the normative model and the frame of reference within which actions, choices, thoughts, relationships and affects acquire meaning, and have an adaptive level of predictability. Mark E. Koltko-Rivera collects from different definitions of worldviews the general traits and provides one that summarizes them all in itself.

A worldview is a way of describing the universe and life within it, both in terms of what is and what ought to be. A given worldview is a set of beliefs that includes limiting statements and assumptions regarding what exists and what does not (either in actuality, or in principle), what objects or experiences are good or bad, and what objectives, behaviors, and relationships are desirable or undesirable. A worldview defines what can be known or done in the world, and how it can be known or done. In addition to defining what goals can be sought in life, a worldview defines what goals should be pursued. Worldviews include assumptions that may be unproven, and even unprovable, but these assumptions are superordinate, in that they provide the epistemic and ontological foundations for other beliefs within a belief system (Kolto-Rivera, 2004, p.4)

Whenever they are in a state of insecurity (not only in the face of a death threat, but also in the face of a state of disappointment, economic instability, emotional distress, etc.) people will more strongly defend their worldviews. This defense will also be activated when you are faced with those who have different worldviews, regardless of whether there are situations of threat of mortality.

Intolerance of uncertainty

Intolerance to uncertainty (Dugas & Ladouceur, 2000; Freeston et al., 1994) is expressed by an excessive tendency to find uncertain situations as stressful and upsetting, to believe that unexpected events are negative and to be avoided, and to think that being uncertain about the future is unfair. This condition is a very common state in the Generalized Anxiety Disorder (GAD).

According to this model, the worry triggered by the intolerance of uncertainty is connected to any variables:

- a. *positive beliefs about worry* (belief that worry is useful in predicting the worst in preparing to avoid it. It is a sort of protection in terms of prevention).
- b. *cognitive avoidance* (in terms of efforts made to dispel the mental images of a feared scenario, the associated feelings of anxiety and thoughts that produce anxiety).
- c. *negative orientation to the problem* (i.e. the general tendency to be pessimistic about problems, to perceive them as threats, and to doubt one's ability to solve them).

This modalization find its original basis on the intolerance of ambiguity model, which theorizes the specific individual tendency to interpret ambiguous situations (i.e. new, unpredictable and apparently complicated) as threatening, followed by uncomfortable reactions and attempts to avoid (Frenkel-Brunswick, 1948).

The various aspects of intolerance to ambiguity have been identified and classified (Bochner, 1965). These are nine characteristics described in terms of: Need for categorization; Need for certainty; Inability to allow

the coexistence of positive and negative traits in the same person; Acceptance of attitude statements that represent a black and white outlook on life; A preference for the familiar over the unfamiliar; Refusal of the unusual or the different; Resistance to the inversion of fluctuating stimuli; Early selection and maintenance of a solution in an ambiguous situation; Premature closure.

Furthermore, these characteristics of the construct have also been used to describe a particular personality structure that should be intolerant to ambiguity, defined as authoritarian personality (Adorno et al, 1950). Its traits are: authoritarian, dogmatic, rigid, closed-minded, ethnically prejudiced, non-creative, anxious, extra-punitive, aggressive.

Terror management theory

Greenberg, Solomon & Pyszczynski are the founders of the well-known *Terror management theory* model. According to the TMT, humans are instinctively driven to self-preservation, just like other animals; however, unlike them, humans possess the faculty of self-awareness, which makes them explicitly aware of their existence - and with it, of their inevitable death (Greenberg, Solomon & Pyszczynski, 1997). Terror therefore arises from the awareness of being alive and from the recognition of one's vulnerability: illness and death can occur suddenly for reasons beyond any kind of control. On these assumptions, the authors place two typically human desires at the basis of human experience: the desire to have a positive self-image and the promotion of one's beliefs and cultural values (often also with a certain prejudice and ethnocentrism).

The TMT therefore recognizes the specificity of typically human dimensions in the

face of the experience of uncertainty, end and terror:

1. Anxiety is a response to the worry.
2. The importance of culture in human affairs.
3. The human need for a meaningful conception of reality.
4. The importance of self-esteem.
5. The role in the unconscious of the motivation of human behavior.

Greenberg, Solomon and Wyszynski claim that cultural worldviews perform the important function of alleviating the anxiety generated by the human awareness of vulnerability and death. In particular, they provide the tools to organize various perceptions (e.g., clocks and calendars), to answer basic cosmological questions (e.g., how did the world begin? What is the purpose of life? And of death?). All that contributes to give an ordered and meaningful idea of the universe.

These conceptions of reality allow people to feel significant, to have self-esteem, through the adoption of social roles. In turn, the value standards of the culture of belonging, also thanks to spiritual reflections, confer a literal and symbolic value to immortality: literal immortality concerns the soul and the afterlife, symbolic immortality refers instead to the identification with larger and more enduring entities than the self such as the nation, society etc.

Self-esteem and cultural worldviews function as defense mechanisms from the existential terror generated by the awareness of the inevitability of death. As a result, people are strongly motivated to maintain self-esteem and their worldviews. The authors define the specificities of these constructs within the TMT.

Self-esteem is:

1. A cultural construction that acts as a primary psychological mechanism in buffering anxiety.
2. The perception of being an important member of a meaningful universe.
3. It is maintained by exhibiting adequate behaviors and results, playing roles that are socially appreciated and activating many defensive responses when the same self-esteem is threatened.
4. *Faith in one's cultural worldview:*
5. It is maintained through secular and religious teachings, rituals, and defensive reactions towards those who have different or alternative worldviews.
6. It can lead to the emergence of numerous prejudices, as it is a fragile symbolic social construction.
7. The mere existence of different-alternative conceptions of reality constitutes a threat to absolute faith in one's worldview. Defense attempts in the face of such differences are:
 - a. Do not pay attention to the different-alternative views of others or consider them unreliable, judging others as savage, uncivilized etc.
 - b. To inculcate one's vision in others.
 - c. To arrange / to place the different / alternative opinions within the cultural vision of the dominant world.
 - d. To annihilate those who do not share their own cultural vision of the world (think of the fundamental role played by prejudice that can lead to violent conflicts).

For an effective terror management, Greenberg, Solomon and Pyszczynski believe it is necessary to have:

- Faith in a meaningful conception of reality (cultural worldview)
- Conviction of being able to meet the standards of value prescribed by that worldview (self-esteem)

The authors believe that this model has relevant implications - not only theoretically but also practically - on social, clinical and pedagogical levels. For example, it allows us to predict the salience of mortality (in moments of natural or cultural collective crisis) strengthens the defense of one's worldview, conformity and obedience, prejudice, rejection and aggression against others other than the group, positive reactions and prosocial behavior towards those who share their values.

Compensatory Control Theory

According to the *Compensatory Control Theory* model - CCT - (Kay et al, 2008; Kay et al, 2009; Landau, Kay & Whitson, 2015) people are generally motivated to think that they have control over their social environment in order to prevent feelings of discomfort due to the randomness and chaos of the social world. These perceptions can be psychologically stressful, traumatic and anxious and, therefore, they try to avoid them in favor of sensations of order and structure.

In situations where personal control is threatened up to the extreme, for example, people may respond with equally extreme levels of approval from external sources of control. Think of the well-known trend towards increasing rates of religious extremism and terrorism in the name of religious ideologies among the members of communities where there is a regime of limited freedom.

According to the CCT, when individuals experience a sense of loss of control, they become inclined to adhere to ideologies that emphasize personal, social or religious control, by virtue of the need to perceive the world as controllable, predictable and orderly. In short, according to the CCT, individuals are induced to compensate for a reduction in perceived personal control by strengthening the belief in the existence and influence of external entities having control, such as the government or a deity (Landau, Kay & Whitson, 2015) - and in some cases also the power of knowledge and scientific progress (Rutjens et al., 2013).

The expression “perceived control” indicates the belief, on the part of a person, of being able to obtain the desired results, avoiding unwanted results, and achieving one's goals (Landau et al., 2015). High levels of perceived control are generally associated with better adaptability, healthier lifestyle practices, better relationships, better interpersonal skills, and better emotional functioning. Conversely, experiences and environmental conditions that impede or impair performance, frustrate and hinder the achievement of goals or impair the sense of personal control are generally associated with malaise (Landau et al., 2015).

By virtue of the need for control, individuals would respond to events that lead to a reduction in perceived control through a series of compensatory strategies:

1. To increase the sense of personal agency (Bandura, 1989). An individual comes to overestimate his abilities and resources in relation to the possibility of obtaining a given result or reaching a given goal.
2. To associate one's own person with external systems or entities (e.g. state, deities, etc.) that are perceived as operating in accordance with the self. This compensatory mechanism consists in relying on external systems, which are deemed to have the necessary control to allow the achievement of certain objectives or the achievement of certain results. In this case, the individual would renounce direct control over his own life, delegating it rather to external entities, which are deemed to act in his interest.
3. To consolidate the belief that particular actions will necessarily produce certain results. The individual supports the affirmation of specific meaning structures. It consists in convincing himself that, in a given context, there are a series of relationships, which function in a stable, orderly and predictable manner. All those random and unpredictable factors, which could actually jeopardize the expected result, are therefore deliberately ignored.
4. Affirmation of non-specific meaning structures. They are interpretations of the general functioning of physical and social reality, aimed at representing the elements and the relationships between them as simple rather than complex, clearly discernible rather than ambiguous, and coherent and stable rather than random and inconstant. This strategy therefore consists in the affirmation of ‘*non-specific*’, or *general structures* (not specific to a given domain) and not necessarily directly related to the aforementioned condition (Landau et al., 2015).

In order to maintain a sense of personal control, knowledge of the outcomes that some actions are capable of producing is not enough: it is also necessary to have a general conception of the world as it is structured in such a way as to ensure that the actions undertaken have a consistent probability of produce certain outcomes. This implies that it is preferable the relationships between the elements of the world are simple and deterministic. If stable/solid meaning structures are lacking, or in cases in which they are compromised, or the reality turns out to be difficult to interpret, the individual finds difficult to orient his behavior effectively, as he is not able to predict the outcome of his own actions with sufficient confidence (Landau et al., 2015).

It must therefore be recognized that the natural propensity of the human being for order is not intrinsically due to order itself, but rather it appears to be largely due to the predictive power that an ordered structure allows to exercise.

Multiple possible modes of preference for non-specific epistemic structures have been identified and highlighted:

- *Pattern recognition.* A reduction in perceived control would correspond to an increase in the tendency to perceive visual patterns even if they are not present, as within random visual stimuli - for example, the recognition of shapes of objects and animals within visual noise (Whitston & Galinsky, 2008).

Our definition of pattern perception, both illusory and accurate, encompasses a range of phenomena that were previously studied independently. Despite their surface disparities, seeing figures in noise, forming illusory correlations, creating superstitious rituals, and perceiving conspiracy beliefs all

represent the same underlying process: the identification of a coherent and meaningful interrelationship among a set of random or unrelated stimuli (Whitston & Galinsky, 2008, p. 115)

- *Preference for defined contours.* In response to a reduction in perceived control, people are more likely to prefer stimuli that are delimited by a well-defined outline, rather than stimuli whose contours are not sharp, clear and defined (Cutright, 2012). This preference would concern not only the visual contours, but would also extend to mental, purely categorical boundaries.
- *Preference for deterministic theories.* In situations of reduced perceived control, human beings to prefer theories about the world that can provide certainties on the merits of the relationships between the parts, rather than theories with specific reference to random and purely probabilistic processes. For example, in a contest of crisis, people is more prone to believe in a creationist theory of the world than a probabilistic evolutionary theory.
- *Pseudoscientific beliefs.* An increased propensity to believe in astrology has been observed during periods in which there is supposed to be a reduction in perceived control - for example, in times of personal crisis (Lillqvist & Lindeman, 1998). A reduction in perceived control may lead to a greater investment in pseudoscientific beliefs that provide a structured view of reality (Wang, Whitson & Menon, 2012).

- *Preference for hierarchical structures.* In response to a reduction in perceived control, individuals show a greater tendency: to perceive an ambiguous social situation as hierarchically connoted; to support hierarchical systems; to prefer a hierarchical organization in commercial and corporate activities; to prefer careers capable of allowing a hierarchical climb. A hierarchical structure is therefore seen as a source of order.
 - *Objectification, attachment to objects and anthropomorphization.* Objectification is a way of compensating for the perception of lack of control, reducing people to simple concrete attributes, such as their body or the role they play. In this way, the individual would have more confidence in their own possibilities to manipulate them and control them (Landau, Sullivan, Keefer, Rothschild & Osman, 2012). Regarding attachment to objects, a reduction in perceived control in the ability to influence the behavior of others is associated with an increased tendency of the attachment towards inanimate objects compared to people of flesh and blood (Keefer, Landau; Rothschild & Sullivan, 2012). With regard to anthropomorphization, it has been observed that there is an increased tendency to attribute human characteristics to inanimate objects, if they show unpredictable or unexpected behaviors (Waytz, Morewedge, Epley, Monteleone, Gao & Cacioppo, 2010).
 - *Paranoicization.* Seeing the world or a part of it as hostile and systematically intent on damaging and sabotaging one's own person (or social group to which one belongs) constitutes a way of giving order to reality. Conspiracy theories reduce a multiplicity of chaotic events to the systematic machinations of a few malicious agents. Thus conspiracy theories can be a way of restoring a sense of order, as if malicious events are the result of machination, then they can somehow be predicted. Similarly, imagining the existence of enemies who intend to cause damage or hinder us could constitute a more structured way of representing reality than the thought of a myriad of unpredictable dangers.
 - *Preference for pessimistic but certain prognoses.* In the event of a reduction in perceived control, the need for order and structure can become so strong that people prefer a certain (definitive) but unpleasant fact rather than a hope characterized by uncertainty.
- Affirming non-specific meaning structures in response to a loss of control is a way to strengthen one's confidence in the fact that the world is structured in a coherent and understandable way for the individual. This would cause reality events to be perceived as predictable - it is by virtue of such structures, therefore, that one would compensate for lost control. Solid patterns of meaning would hold up the human perception of being able to control one's life.

The meaning maintenance model.

According to Proulx & Inzlicht (2012), meaning is anything that is capable of giving sense to personal experiences. Personal expectations can be defined as expected relationships that allow you to perceive your experiences as familiar. Meaning is what gives you the sensation of understanding reality and of predicting and controlling the events of reality.

However, it can very often happen that such relationships fail to give meaning to one's own experiences, violating personal expectations and leaving the subject in a state of bewilderment, of uncertainty. This state of discomfort generates a common and general state of aversive arousal (in terms of physiological arousal of the autonomic nervous system and neurocognitive activation¹), regardless of the predicted associations that are threatened. The psychological distress would derive from experiences that violate the way in which people understand the what or why of the experience regardless of the consequences of the violations themselves (Proulx & Inzlicht, 2012).

The authors propose a theory called *Meaning Maintenance Model* (MMM). It hypothesizes that when a particular structure of meaning is compromised, the individual acts in a compensatory manner by reaffirming with greater force other meaning systems that have remained intact, regardless of whether or not they are related to the damaged one. It is a real *fluid compensation model*.

The MMM proposes three general domains in which human beings are committed

to stable and coherent meaning structures: the *external world*, the *self*, and the *self in relation to the external world*.

- In the *domain of the external world*, human beings try to structure predictable relationships between the elements of external reality, that is, people, places, objects and events belonging to the external environment.
- In the *domain of the self*, all the beliefs of the individual relating to himself are found. There are relationships that have the function of unifying the self both in a diachronic sense (that is, by unifying the past self with the present and future one) and in a synchronic sense (that is, by unifying the present self by reason of the existing roles and contexts). Individuals would attempt to maintain a sense of self continuity throughout their life.
- In the *domain of the self in relation to the external world*, the individual is engaged in constructing patterns of meaning by relating the self to people, places, objects and events of the external world, or by inserting himself into structures of meaning which also include elements of the outside world.

The MMM postulates that the intensity of the drive to compensate for a loss of meaning varies according to the realm of meaning affected by the loss. The efforts aimed at maintaining the meaning would be greater where the domain affected by the loss is more salient for the individual.

¹ Starting from a wide psychophysiological literature, the authors defines general aspects of a common syndrome of anxious arousal in response to experiences that violate expected relationships. It can occur in the absence of conscious and/or subjective awareness of

the arousal. Characteristics of such a syndrome is its beginning with the release of epinephrine and cortisol, then there is a "physiological threat response" with increased skin conductance, constriction of the blood vessels, and a marked variability in cardiac activity.

The authors propose a set of five processes aimed at maintaining / regaining a stability of meaning after experiences that are inconsistent with one's expectations have occurred. These processes perform a common compensatory action:

1. *Assimilation* (reinterpretation of an event, aimed at making the latter compatible with the patterns of meaning already possessed by the individual).
2. *Accommodation* (modification of one's own meaning schemes, so that they become suitable for allowing the interpretation and explanation of an event, which appeared incompatible with them).
3. *Affirmation* (act of reinforcing or reaffirming familiar and solid patterns of meaning following the violation of some other pattern of meaning, even unrelated to those reinforced).
4. *Abstraction* (action of restoring order through the act of building new meaning schemes starting from presumed regularities identified in reality - think of conspiracy theories).
5. *Assembly* (construction of new patterns of meaning in order to respond to a violation of the previous patterns. This action is often used for the purpose of signifying negative or traumatic experiences. The content of the patterns produced by the assembly activity may have no correlation with the schemes object of the violation. We arrive at a new and original construction, sometimes artistically connoted, of new schemes, which are organized in coherent narratives).

The five different modalities can also be distinguished by the degree of awareness:

while some of them seem to take place without the individual being aware of it (affirmation, abstraction), others will require some degree of conscious effort (assimilation, accommodation, assembly).

Uncertainty-identity theory

Hogg's uncertainty-identity theory (Hogg, 2007) is based on a motivational principle, according to whom feeling uncertain about perceptions, attitudes, values, or feelings can be very uncomfortable. Such a feeling leads to several kind of processes in order to reduce the uncertainty. In this sense, Hogg considers it is more appropriate to talk about reducing uncertainty than achieving certainty.

We can distinguish between *epistemic* and *affective dimensions of uncertainty*: the former is considered relatively focused, whereas the latter dimension is more diffuse (namely, a person feels generally uncertain, but is not sure exactly what about). Anyway, there is an important relation between uncertainty reduction and the pursuit of meaning.

According Hogg's uncertainty-identity theory, the condition of uncertainty is triggered by contextual factors that challenge people's certainty about their cognitions, perceptions, feelings, and behaviors, and ultimately, certainty about and confidence in their sense of self (Hogg, 2007).

Hogg elaborates his model starting from the social identity theory (Tajfel & Turner, 1986), acknowledging the importance of the memberships and group belonging as a fundamental guide for self-definition. In fact, a group is collection of individuals that share a common worldview, and share a definition about their identity and about differences with other groups. The belonging of a certain group provides a positioning that is able to construct

one's own identity, to categorize the others and help to predict what is expected for the future. This wide categorization process works as a meaning construction of the world. Some prototype can be very useful to set the categorization and to compare what is appearing as discrepant (by maximizing differences between groups in terms of contrast, and by minimizing differences within one's own group in terms of assimilation). These processes are based on a recursive circuit of communication at manifold levels: beyond the dyadic ordinary communication in the daily life, the leader communication and media communication have a strong impact.

Uncertainty management model. The role of fairness and justice

Van den Bos (2009) argues that people have a fundamental need to feel certain about their world and their place, inasmuch an excessive personal uncertainty threatens the meaning of existence. Human being feel a need to eliminate personal uncertainty or to find some way to make it tolerable and cognitively manageable. Van de Bos considers personal uncertainty can deprive a person of confidence in how to behave and what to expect from the physical and social environment.

A person experiences an aversive state and a reduced control if she feels a sense of uncertainty about one's attitudes, beliefs, feelings, perceptions, and about one's relationship to other people.

Although, in some cases people want to experience new, uncertain events, and situation of thrill and danger, in this cases uncertainty often is feel as manageable (in a certain measure and within some constrains).

Van den Bos elaborates a model of Uncertainty management in order to assess how

people react their personal uncertainties. A first tenet of this theory is that under heightened levels of personal uncertainty people will react in particularly negative terms to unfair treatment and positively toward fair treatment. The positive reaction to the fairness –under an uncertain situation – is experienced by people in terms of reduction of the level of uncertainty and in terms of major tolerance of it.

Fairness information is an environmental signal that can help reduce uncertainty because it increases or decreases employees' fear of being exploited in a social exchange (Lind & Van den Bos, 2002).

Lind and Van den Bos (2002) claim that when uncertainty is linked to fairness and equity, people are less likely to engage in behavior that harms the interests of the organization and its members. Fairness is able to induce a reduction of anxiety, worry and doubts about being exploited. That has relevant implication, since people are able to maintain a positive attitude towards the organizational relationship and are more motivated to refrain from behaviors that harm the organization or its members. Conversely, people are more likely to engage in antisocial behavior (in terms of hard competition, lack of solidarity, enemyization, etc.) when they feel unfairly treated and are uncertain (Thau, Aquino & Wittek, 2007).

A General Process Model of Threat and Defense: From Anxiety to Approach

Jonas et al. (2014) recall how social psychological research on threat and defense took its first steps with Festinger's Theory of Cognitive Dissonance (1956) which focused on aversive arousal resulting from discrepant experiences in which relevant cognitions con-

flict (for example, smoking despite the awareness of the dangers involved). In particular, for Jonas et al., any experience that conflicts with prevailing cognitions or motivations produces anxious alertness, motivating efforts to reduce it with reactive thoughts and behaviors.

The authors, in composing a review of the different existing theories that explain the defensive mechanisms of people's reactions to the threat, while recognizing their structural diversity, identify yet their common point: the threat highlights a discrepancy that can be of a perceptive, epistemic, or motivational nature by activating greater attention and anxiety. According to a biopsychological perspective, anxiety is produced by behavioral inhibition.

The threat first leads to proximal elaboration related to the threat and mediated by the *behavioral inhibition system* (BIS). Subsequently, the levels of motivation disposition approach to moderate the speed with which people switch to approach-oriented reactions mediated by the *behavioral Approach System* (BAS). These reactions can be both concrete and abstract, and at the same time either personal or social in nature.

- The BIS system responds to discrepancies in experience through a series of symptoms including hypervigilance, anxious excitement, motivation to avoid and inhibition of all ongoing behaviors. This system is adaptive as it guides the organism to resolve the discrepancy at hand or to move towards objectives and contexts with fewer discrepancies. The basic processes associated with proximal defenses involve a combination of increased vigilance for new information and more efforts to suppress or distract and distance oneself from thoughts

and circumstances deemed anxious. A second antidote to the activation of the BIS is given by the motivational approach through an incentive (according to a behavioral approach).

- The BAS implies a shift towards an alternate focus that is less fraught with discrepancies than the threatened goal or domain. These responses can be called distal defenses. Once a conflict-free commitment is restored, the motivation for the non-mitigated approach regains altitude and the activation of the BIS system automatically decreases, since the states motivated by the approach reduce anxiety and conflict. These states motivated to approach can be restored through the effort and struggle for an effective solution to the problem in question if the discrepancy appears manageable. If the direct solutions are obvious, people will immediately approach supplanting or shortening the anxious and alert BIS phase. If solutions are not available, such as in the case of impending (death) threats, or if people are unaware of the source of the threat and therefore unable to resolve it, they can resort to distal reactions that resolve the threat immediately or perform simple palliative work.

Causal Uncertainty model

Weary & Edwards (1996) developed the *Causal Uncertainty* (CU) model focused on beliefs and feelings of causal uncertainty and associated strategies for reducing uncertainty. When the cognitive representations of the world are incompatible with our experience or

with other memorized representations of reality, we experience the feeling of uncertainty and the inability to predict the future. To reduce the anguish resulting from this situation, the subjects implement strategies to improve the state of causal knowledge. Often these strategies involve research and processing of information from the social world that could reasonably make the world more understandable, predictable and controllable.

Feelings of causal uncertainty refer to metacognitive feelings experienced with surprise, bewilderment, or confusion. They indicate the unsatisfactory nature of the current state of causal knowledge of the perceiver; the causal beliefs of uncertainty are self-constructed on the uncertain or inadequate understanding or identification of the causal relationships of the social world.

There are two movements to overcome the crisis of certainty:

1. The causal determination
2. The construction of the motivation

Ambiguous or vague causal determination is universal in nature.

Motivation is a cognitive representation of a desired state, event or future outcome that will lead to a better feeling, and in this case, an accurate understanding of causal relationships in the social world (causal certainty). The authors argue that this goal is universal as is causal understanding, essential for adaptation.

They theorize a negative feedback curve, according to which the motivational effects of the goal are due to a desire of reducing the discrepancy between the current state and that desired by causal knowledge.

If the expectation of success is too low for all feasible plans, no action is carried out and disengagement from the objective will be activated. This is also the case for abstract

goals which, compared to concrete ones, are more likely to be achieved gradually and over longer periods of time.

Weary, Tobin and Edwards (2010) list six postulates in addition to the re-formulation of their model:

- *Postulate 1. The chronic beliefs of CU arise from a lack of perceived control.* The ability to control outcomes depends on causal knowledge; feelings of inability to control important events question one's ability to understand causal relationships.
- *Postulate 2. Individual differences in CU beliefs are differences in chronic accessibility.* Chronic beliefs of causal uncertainty are not at the level of availability but at the level of accessibility.
- *Postulate 3. CU is associated with a negative affect.* In particular, CU triggers anxiety, sadness and depressive symptoms.
- *Postulate 4. The CU model activates the motivation of accuracy.* When there is an accurate process, then there are activated: laborious processing of information, attributive adjustment, correction of judgments for perceived prejudices, less influence of persuasive messages, greater diagnostic attention towards source of information.
- *Postulate 5. The choice of action plans depends on the expectation of success.*
- *Postulate 6. The importance of causal understanding can moderate efforts to reduce CU.*

The prospect theory (Kahneman & Tversky)

Prospect theory focuses on decisions under risk conditions, which are defined as decisions where the probability associated with the possible outcomes of each available alternative is known (or can be estimated). Compared to the theory of expected utility, the theory of the prospect of Kahneman and Tversky (1979) replaces the concept of utility, as well-being that can be achieved, with that of value. Value is considered as a measure of gains and losses that takes into account changes in wealth and not the person's final position. Generally, according to the studies carried out, people are led to consider the loss more important than the gain, violating the principles of economic rationality. The psychological effects are:

1. *The context effect* (the way in which the problem is formulated affects the choices made).
2. *The certainty effect* (the will to avoid a loss is greater than the motivation to obtain a gain)
3. *The isolation effect* (in the evaluation we tend to identify a value based on the potential results and on the probability of having the greatest usefulness; often, therefore, we focus our attention on inadequate solutions with inconsistent or isolated choices in the hope to obtain a substantial profit).

For Kahneman and Tversky, the prospect theory shows how people, rather than to think about wealth, think in terms of gains and losses. Also, if there are positive rewards, the person shows some aversion to losses; in the event of negative premiums, people reverse the order of preferences by identifying only the final solution, neglecting the losses (those

who do not like to risk in this case will do so). For these reasons, economic models describe behavioral types that do not correspond to those theorized by the maximization of learned utility according to rational principles but to subjective cognitive beliefs.

In particular, Kahneman (2011), adopting the terms coined by Keith Stanovich and Richard in reference to *mental systems 1* (which operates quickly and automatically without any effort and / or voluntary control) and *mental systems 2* (with which thought resorts to subjective experience of action, choice and concentration), emphasizes their interaction: system 1 (automatic) continuously produces ideas for system 2 (reflective).

If system 2 validates the impressions obtained from system 1, these are transformed into beliefs and the impulses into voluntary actions. System 2 is activated more when a question arises which system 1 cannot answer. System 2 is activated as soon as an event is detected that violates the world model to which system 1 constantly refers". In this sense, the surprise channels our attention: the surprising event is fixed and a story is searched in the memory that explains its meaning. In short, almost everything we do (system 2) originates from system 1, but system 2 greatly increases its activity in difficult and uncertain situations.

For Kahneman, a very surprising aspect of our mental life is that it can very rarely happen not to find an answer to everything: in fact, the normal state of everyone's mind moves between intuitive sensations and opinions on everything that happens. This is due precisely to the fact that, if you are in difficulty when faced with a complicated question, system 1 provides to formulate a second question that is much simpler, even if connected to

the first, to which you can easily answer (substitution of the questions). The target question is the one on which you intend to make a judgment. The heuristic question is the simplest question to be answered instead of the other.

The heuristics, therefore, are real mental shortcuts of an intuitive type that lead our mind to easily process quick answers. While this can be considered positive in some areas, in other circumstances it can lead to glaring errors of judgment called *cognitive biases*.

Psychoanalysis and uncertainty

Psychoanalysis since its inception has recognized an important value from an epistemological and clinical point of view to the uncertainty and unsaturation of knowledge, emphasizing the ability to support the ambiguity, ambivalence and uncertainty of the intrasubjective and intersubjective unconscious dynamics (Avdy, 2021; Guerra, 2021; Saporta, 2021; Craparo, 2017; De Luca Picione & Freda, accepted / 2022).

Being able to sustain and endure these perturbing forms means being able to suspend an immediate reactive action, to avoid acting-out towards hasty conclusions, to avoid ideological and definitional interpretations of individual and collective psychic phenomena, to accept that other possible readings are always possible and that knowledge it is always partial and incomplete (Salvatore et al, 2021; Zittoun, 2021; Venuleo et al, 2021).

Freud's Primary Process and Secondary Process

In Freud's thought it is possible to find the initial foundations of an epistemological approach that will have a long following both

inside and outside the psychoanalytic perspective, namely the distinction between the two types of principles of psychic happening (Freud, 1911): the *primary process* and the *secondary process*. The former is characterized by being unconscious and by tending directly towards an immediate discharge of the drive with the aim of procuring pleasure and relieving bodily and psychic excitatory tension. The latter, on the contrary, develops gradually and only subsequently, its main characteristic is the ability to delay the time between the need and its satisfaction. The terms "primary" and "secondary" have first of all a temporal and evolutionary meaning, and it should be noted that they do not imply a hierarchy of importance, given that they will continue in some way to be present in all psychic processes (normal and pathological).

The primary process works according to the unconscious mechanisms of condensation and displacement. According to these modalities, one passes freely from one representation to another, without these being connected by logical links, and the principle of non-contradiction does not apply.

The secondary process is the result of the impact of reality and the environment on the psychic apparatus during its development. The tendency of the secondary process is to defer, divert, dampen or prevent the discharge of drive investments. The drive discharge (the satisfaction of the pleasure principle) is enslaved - through the secondary process - to the principle of Reality - a mode of operation aimed at deferring the fulfillment of desire with reference to the conditions and requests of external reality (but also of social canons, cultural and normative forms). It makes possible to achieve realistic gratification and thus it becomes an important element in the adapta-

tion process. The secondary process is connected to alert thinking, reasoning, judgment. Furthermore representations are stable and distinct, connected by logical links, and the satisfaction of desire is deferred in relation to a more suitable and less dangerous moment.

The two Freudian psychic processes therefore have completely different ways of dealing with uncertainty as a source of excitement, frustration and anguish. One is unable to sustain them and thus rushes to acting out and magical thinking (Ogden, 2010), the other is capable of promoting transitory reflective forms aimed at the elaboration and transformation of points of view, expanding their scope, development and potential. However, it would be wrong to claim the necessary overcoming of the primary process in favor of the secondary process.

The emergence of creative uncertainty in Winnicott's transitional space

The theme of uncertainty - understood as a corollary of potential and creativity - is worked on by Donald Winnicott in his concept of *transitional space*. A sufficient (and never completely perfect!) adequacy of maternal care allows the child (between four and twelve months of life) to experience the formation of the transitional object and the transitional space. It is a third psychic area (called the *zone of illusion*), whose function is to constitute a buffer that connects fantasy and reality, the internal world and external reality. The transitional space is a real psychic border area, potential, which is neither internal nor external, but separates and at the same time connects the inside and the outside, the *me* and the *not-me*, the object of desires and the things of the objective world. The transitional space is

a vital and creative liminal area that accompanies the development of man throughout life, and is at the heart of play, dialogue, art, literature, culture (Winnicott, 1953; De Luca Picione, 2017; De Luca Picione & Valsiner, 2017). It is the area wherein it is possible to experience the ambiguity, ambivalence and uncertainty of things in a vital, creative and subjective way without a distressing sensation of psychic death taking over.

The three Lacanian registers of the Symbolic, Imaginary and Real

The theme of uncertainty and unpredictability is worked on in a very original way by Jacques Lacan (2006). He believes that the construction of subjectivity requires a work of knotting between the three different registers of experience. They are the three registers of the *Real*, *Symbolic* and *Imaginary*.

The register of the Imaginary pertains to the image and its morphogenetic power of identification and capture, mimesis, deception. It belongs to the ego, to the image of the body invested with libido, to one's fellow man, to illusion.

The Symbolic is the register *par excellence* of language, of the Signifier and of its functioning within a differential symbolic cultural system (that is, each signifier is within a symbolic structure, which is based on relationships of difference). It is the register where castration occurs as a symbolic lack and which allows the phallic signifier to order the experience.

The Real - unlike reality which is a fiction based on the consensuality of common sense and the mixture between the Symbolic and the Imaginary - is the register of the *impossible*, of what cannot be universalized. The

Real deals with what is always posed as absolute singularity, what undermines the symbolic and its predictability, generating a state of continuous uncertainty, escaping any symbolization. The Real is the impossible of sexual intercourse and its fusional fantasy of union and wholeness. It is the register of meaningless enjoyment. The real is therefore something pre-symbolic and not symbolized. The Real is what the Symbolic, like a blanket, tries to cover, to capture in his mesh but something always escapes you. In this sense, the symbolic "significantizes" the real, captures it but never completely, and what remains excluded emerges as an unsymbolized leftover.

The Real is the "pre-symbolic", but also the unsymbolized rest. At the same time, it is important to note that the Real is precisely an "effect of the symbolic", namely this register emerges only from the work of the symbolic. Each symbolization generates a waste, something that is its product but of a different order, outside the symbolic, a beyond that leaves the symbolic unchanged. Every knowledge generates ignorance; every forecast reformulates and renews the field of uncertainty.

Therefore, human experience to subjectivate itself needs to keep the three registers intertwined in their independence (this means that the exclusion of one of them or their merging into a single system generates psychopathology and the suffering of the individual and of the bond social - De Luca Picione, 2020a).

Bion's negative capacity and tolerance of uncertainty

The theme of uncertainty is considered in terms of an unsaturation of knowledge from both an epistemological and an affective point

of view. It is developed by Wilfred Bion by means of the the so-called *negative capacity*.

Bion uses the term *rêverie* (daydreaming) to indicate the mother's elaboration process of the disquieting elements of experience of the newborn. It refers precisely to an idea of thought that is free, loose, not tied to any specific constraint, which can pass from an idea to another following unusual and particular associations starting from one's own bodily states. Freud himself had recommended to psychoanalysts a freely fluctuating state of attention, as the psychic state of the analyst who places himself in a receptive way to grasp any stimulus, coming from the patient's stories. This state is only apparently passive; it is a state of waiting, of patience, of tolerance of the frustration of not understanding, capable of grasping what is emerging from the stories.

Bion defines this state with an aphorism "*without memory, without desire*" (Bion, 1967), indicating that there must be no spasmodic search to grasp forced connections between the present and the past, nor desire to connect the present with an expected future state, fixed in advance.

It is a matter of supporting and elaborating on the one hand the pure and terrifying experiences of the body, but on the other hand also of supporting the contradictions of reason, the aporias of the logics, the indeterminacy of polysemy, the undecidable paradoxes, ultimately a dimension of irreducible uncertainty. Bion call this as a *negative capacity* precisely because it is aimed at supporting the void, the meaningless nothingness, waiting for a reconfiguration of chaotic experience into a new form of meaning. The origin of such an expression is in the poet Keats that uses it to characterize the capacity of the greatest writers to pursue a vision of artistic

beauty even when it leads them into intellectual confusion and uncertainty. Negative capacity is opposed to a preference for philosophical certainty over artistic beauty. Negative capacity implies the capacity to wait for a bodily-epistemic transformation. This is the matrix of learning from experience. It shows itself as the ability to tolerate the pain and confusion of not knowing, rather than imposing ready-made or omnipotent certainties upon an ambiguous situation or emotional challenge.

The negative capacity further developed in Bionian terms is linked to the ability to tolerate doubt, to allow the gradual development of a container (♀) in which contents (♂) - a "cloud of uncertainty" of uncanny elements - can be dispersed and to remain in this state for a certain period of time, before some surprise intervenes to organize them into something coherent. Bion considers as very important that this process is never definitively concluded; there can always be an oscillation between the ordering phase (*depressive position*) and the chaotic phase (*schizoparanoïd position*) of confusion, disorder, and anxiety.

It is interesting to note that Bion also studied *group dynamics* and specific defensive forms in the face of excesses of anguish and uncertainty (Bion, 1962, 2014). According to Bion, the group is a superordinate entity with respect to the individuals who are part of it, and it is made up of a shared and unitary unconscious mental dimension within which the individual members lose, albeit to varying degrees, their specificity and uniqueness.

Within the group, there are two opposite tendencies: on the one hand, the one aimed at the execution of the task (it is conscious and it orientates itself in the direction of rational thought) and the one that opposes it to the task (it is unconscious and it aims to boycott the

formation of thought. The individual is absorbed by the emotional atmosphere and by psychic dynamics of the group until he no longer exists in his singularity).

Bion defines the specific unconscious group defensive modalities as "*basic assumptions*". These assumptions are group fantasies, endowed with omnipotent and magical traits relating to the possibility of achieving the aims that the group proposes.

Bion identifies three basic assumptions:

- *Dependence* (typical of religious social forms, for example the *Church*). The group lives the experience of helplessness. Everyone feels lacking in initiative and no possibility of getting by on their own. There is the fantasy that a single person, the idealized leader, like divinity, can protect, nourish, guarantee the survival of the group. A close relationship of dependence is generated with the leader, while there is distrust of the whole group. Individuals share feelings of greed, guilt, depression.
- *Fight/Flight* (typical of military social forms, for example the *Army*). The group organizes itself to defend itself and escape from an enemy or to attack someone / something by which it feels threatened. There is a Fight and flight mix. Generally the position of leader is taken by people with paranoid personalities.
- *Coupling* (typical of oligarchic social forms, such as *Aristocracy*). The group identifies the reason for its existence in the fact that from a union within the group, a couple, but also an alliance of ideas, something of saving will be born. The members of the group await the advent of a Messiah,

of a saving event (however, in order to work such a wait must never happen). There is a widespread and shared feeling of confident expectation.

These basic assumptions manifest themselves as intense and primitive, unconscious and irrational emotions, which have the function of making the group unassailable by thought activity. Bion defines these dynamics as *protomental phenomena*, characterized by chaotic emotions, shapeless sensations of ontogenetic and phylogenetic material located between mind and body. During these activations, the single individual is no longer called into question, whose identity and subjectivity vanish, but group functions with transindividual and homogenizing characteristics are activated. They are therefore very powerful and primitive unconscious processes of dealing with anxiety and uncertainty.

Jung's acausal connections and unconscious processes

From the point of view of Jung's analytical psychology, we find the theme of uncertainty developed in a very original way. In a complementary (and not as substitute) way to the conception of causal links between natural phenomena, Jung begins to study the phenomena of the so-called *synchronicity* starting from the 1930s. In this period, Jung was engaged in a passionate dialogue with the physicist Wolfgang Pauli (Nobel Prize in Physics in 1945 for decisive contribution through his discovery of a new law of Nature, the exclusion principle or Pauli principle). By synchronicity, Jung means *significant coincidences*, that is, the simultaneous manifestation of two different events, in particular between an interior

/ psychic event (a dream, a sudden idea, a pre-sentiment, etc.) and an external event (i.e. an objective fact) (Jung, 1952; Jung & Pauli, 1955).

Synchronicity is based on a principle of non-causal links. This principle consists of a bond between two events that occur simultaneously, connected to each other, but not in a causal way, that is, in the absence of any material influence of one on the other. The two orders of events are associated through the same context or through meaningful content. In a *significant coincidence* the relationship between the psychic and the physical event cannot be explained by resorting to the cause-effect relationship; rather, it is subjectively experienced as strongly interconnected and similar. The principle of synchronicity is proposed as a different explanatory principle of reality, complementarily to that of causality. Jung believes that Eastern culture has always contemplated an order, a harmony, a connecting network between all things in the world (material, psychic, spiritual), while Western thought has progressively strengthened causal determinism and linearity.

The dialogue with Pauli on quantum physics, based on an inherently probabilistic conception, implies the impossibility of predicting with certainty what the evolution of a microscopic phenomenon will be. The events described are by their nature statistical, that is, singularly unpredictable. According to Pauli, reality is too complex to be described in an exhaustive manner by the principle of causality, therefore the introduction of a principle of synchronicity appears necessary.

According Jung, the *acausality of synchronicity* - which implies unpredictability, uncertainty and the uncontrollability of events - shows itself in very meaningful life circum-

stances (mostly during very intense emotionally moments, particular moments of crisis or transformation) in which psychic processes and external events appear simultaneously according to certain unconscious symbolic affinities.

Although the introduction of synchronicity implies the consideration of an epistemology very distant from the ordered and linear worldview of nineteenth-century physics, by introducing a relationship between causal indeterminacy and the unconscious psychic life of the individual, it advances the hypothesis there are higher orders than the sensitive and perceptive experience of the individual.

Beyond a series of new-age and transpersonalistic drifts that have trivialized and impoverished this principle, it must be recognized that Jungian thought invites us to overcome the anthropocentric monopoly of the ego and of conscious psychic life by inviting us to find a new centers of equilibrium with the unconscious, the multitude of expressive forms, indeterminacy, prolificacy and creativity.

Conclusions

The issue of uncertainty, considered as constitutive of human experience, has been examined from different perspectives. In general, we have seen that uncertainty is a condition with an affective, cognitive, agentive and relational impact that is generated starting from a contextual discontinuity of one's own systems of life. We can see uncertainty from two related point of view: on the one hand, it is a preliminary and constitutive condition to be avoided by several forms of oblivion, automatism, repetitions, common sense; on the other hand, it is a sudden perturbation of the

stability of existence that ask for an urgent reconstruction of it.

Uncertainty produces a condition of disorientation, since the continuous trajectories of meaning (that work on the connection between intra-subjective and inter-subjective systems, between identity and sociality, between past orientations and future orientations) have ceased to exist. We have seen that the condition of uncertainty is 'certainly' an universal characteristic of human experience (in the face of death, illness, sexuality, growth, identity, decision, etc.).

Through the construction of habits, social bonds, normative / cultural systems and processes of semiotic mediation, the human being finds and tries to maintain flexible forms of stability and compensation in the face of fluctuations, perturbations and crises.

Moscovici's theory of common sense (see *social representations*) put in evidence hermeneutic strategies capable of reconstructing social reality in order to act on it and control it through the tools of anchoring and objectification. Situations of uncertainty and unpredictability, in Bruner, lend themselves to being adequately addressed by the flexible, reconstructive and metaphorical nature of the ongoing *narrative sensemaking process*. With Valsiner, the uncertainty of a constantly becoming environment leads the human being to continuously activate processes of sensemaking of experience, making use of *semiotic mediation* tools. Human beings, naturally projected towards the achievement of goals, use signs to pre-adapt themselves to what they predict. For Morin, uncertainty is a natural implication of human experience, which, in turn, determines the non-linearity of decision making: this can be implemented according to the structure of an irrational bet (faith) or a more

rational strategy (up to rigid and codified programs).

The main socio-cognitive theories examined in this article and concerning the dimensions of uncertainty, unpredictability and the crisis of meaning, have widely shown the complexity of the cognitive strategies implemented to restore the feeling of control over one's own experience and over the things of the world around us. They share a common matrix starting from the notion of *cognitive dissonance* as a critical moment that needs to be resolved in order to re-establish a balance from the point of view of one's own identity (both in reference to the individual and to the one's own in-group), social belonging, agency, trust, fairness, prediction and capacity of control. The operation of the meaning making process - sometimes aimed at finding hidden meanings, other times at re-adapting them or rebuilding them from scratch - is considered the main and most formidable tool for regulating adaptive strategies.

The psychoanalytic perspective has recognized the bivalence of uncertainty in human experience (Salvatore et al, 2021). On the one hand, there is the acknowledgement of unconscious defensive systems of protection from anxiety and the danger of uncertainty. On the other hand, there is the recognition of the value of the ability to tolerate and to contain uncertainty and give rise to transformative and development processes in order to be able to confront reality without a definitive affective saturation.

The topic of uncertainty in the psychoanalytic field takes on particular relevance in epistemological and clinical perspectives in reference to the degree of tolerance and containment capacity of the subject in the face of ambiguous, ambivalent, uncertain situations

within the intra-/inter-personal unconscious dynamics.

In conditions of uncertainty and frustration, the *primary process* (i.e. instinctual discharge and search for immediate satisfaction) is activated with a magical illusion of omniscience, to the detriment of the reflexivity and temporal expansion of the reality examination of the *secondary process* (Freud, 1911).

In Winnicott, the creative nature of uncertainty is emphasized, in the form of *transitional space*, a psychic border area neither internal nor external but which acts as a liminal link between the inside and the outside, between the me and the not-me, between the object of desires and the things of the objective world (Stenner, 2018; Zittoun & Stenner, 2021). For his part, Bion developed the concept of *negative capacity* understood as the possibility of elaborating and tolerating situations of confusion, anguish and uncertainty: in a condition of emptiness and absence of meaning, it is the ability to wait for the experience to be recomposed under the form of a new configuration endowed with meaning. In Lacan, there is a close relationship between the three registers of the Real, the Symbolic and the Imaginary, and uncertainty is a condition of *Impossibility* of fully symbolizing all the field of experience. A hole of knowledge is always remaining.

Summarizing the main reflections, we can say that the sensemaking process is therefore one of the main activity of the human being through which he is able to carry out a series of indispensable semiotic dynamic processes (De Luca Picione, Martino & Freda, 2017, 2018; De Luca Picione & Freda, 2016a, 2016b, 2016c; De Luca Picione, Martino & Troisi, 2019; Salvatore et al, 2021):

- Continuous construction and reformulation of one's own identity and subjectivation of the experience.
- Construction of systems of social relations (belonging, sharing, exchange, pursuit of common ends, sharing of a teleological and ideological vision of the world - also see the value and functions of the *worldviews*).
- Socio-semiotic recursive mediation of corporeality (starting from the regulation of bodily processes - such as hunger, sleep, sexuality, etc. - up to the forms of decoration, embellishment, social positioning, funeral rituals, etc.).
- Construction of frames of sense within which the agentic experience based on the predictive stability of human and natural relationships is possible. A frame of sense works in terms of pertinentization of the experience (see Salvatore et al, 2021).
- Orientation of choices, decisions, behaviors and actions in a proleptic direction towards the future (imagining and creating expected, desired, predictable scenarios).
- Attribution of intentionality and causality to the manifestation of human and natural events.

Finally, we are interested in pointing out that all these operations are made possible only starting from a background of uncertainty, discontinuity, crisis, rupture and constant becoming: in fact, the sensemaking processes are aimed at building flexible relationship systems in order to convey human experience over time. Every form of development is made possible by the mediation between processes of rupture, undoing of the past and

reconfiguration of the new, at an unprecedented and creative level. Development does not correspond to the determined and deterministic trajectory of growth detached from any contextual, historical and contingent form.

The development of a system is a semi-otic ecological process in which the organism tends to organize new systems of relations starting from:

- Establishment of a framework of stability (consolidation of perceptive, affective, cognitive, agentic and relational habits).
- Integration of the environmental crisis into one's own autopoietic systems (by following a break of the relational balance with the world)
- Creative and subjective construction of new ways of approaching the future (which for the most part always remains uncertain, unexpected, unpredictable).

The sensemaking of experience is the main ordering activity of the human being and its condition of possibility are to be found precisely on the opposite side of confusion, uncertainty, ambiguity, chaos, unpredictability. The sensemaking does not definitely resolve the uncertainty; rather it is the same efforts of make sense that produces new forms of disorder and chaos since the human experience is not fully understandable (the individual is not fully aware of his behavior/thought/feeling/decision; one individual is not fully aware of the others' world; the future is always unforeseeable in a conspicuous part; and so on). Uncertainty is the former and principal expression of the liminal condition of the human experience (De Luca Picione, 2021; De Luca Picione & Valsiner, 2017; Stenner, 2018).

Rather than thinking of sensemaking as an exclusively defensive and homeostatic process against a hostile and inhospitable world by definition, we can then think of sensemaking as the constant oscillation in a dialectical becoming process whose polarities are the continuity and the discontinuity: once an extreme pole is reached, then the semiotic system needs a trajectory inversion and therefore to move towards the opposite pole. It means that when the frame of sense becomes excessively rigid, stereotyped, codified and normativized, then sensemaking process loses its characteristic of flexibility, of regulation of exceptions, and of subjectivation of relationships. An explosion of chaos is therefore triggered, as the semiotic system collapsed on itself under the weight of its own rigid structure.

Conversely, when there is no frame of sense and everything appears chaotic, shapeless, unrepresentable and unpredictable, the semiotic activity of sensemaking begins the effort to find stable forms of relations, relational invariants and regulatory systems endowed with a certain predictability. This is not a mere illusion or imaginative creation of fanciful links; rather, this is a test of the construction of sensemaking processes in agentic and decisional terms, of evaluation of effects and results (evaluation is always elaborated under the simultaneous affective, cognitive and collective profiles).

The sensemaking process acts as a whole like the *mandala practice* performed by Tibetan Buddhists. Once concluded, the drawings made with colored powders and depicting very complex geometric figures (with many simultaneous levels of order and symmetry) are erased with the hand to remember the impermanence of existence and its continuous becoming, but above all to allow that a new meaningful activity may come to light. The

sensemaking activity therefore not only ensures the search for stability and order in the face of uncertainty, it is the evolving result of the relationship between order and disorder, identity and otherness, knowledge and ignorance, predictability and unpredictability, certainty and uncertainty.

References

- Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The Authoritarian Personality*. New York: Harper & Row.
- Avdi, E. (2021). Psychoanalysis and the ethics of meaning-making. *Subject, Action, & Society: Psychoanalytical Studies and Practices*, 1(1), 81-90.
- Bauman, Z. (2006). *Liquid Times: Living in an Age of Uncertainty*. Cambridge: Polity.
- Bion, W. R. (2014). *The Complete Works of W. R. Bion*. Edited by C. Mawson. London: Karnac Books.
- Bion, W. R. (1962). *Learning from Experience*. London: William Heinemann.
- Bion, W. R. (1967). Notes on memory and desire. *Psychoanalytic Forum*, II (3), 271 – 280.
- Bochner, S. (1965). Defining intolerance of ambiguity. *The Psychological Record*, 15(3), 393-400.
- Bruner, J. (1990). *Acts of meaning*. Harvard university press.
- Craparo, G. (2017). *Elogio dell'Incertezza. [Praise of Uncertainty]*. Milano, Mimesis.
- Cutright, K. M. (2012). The beauty of boundaries: When and why we seek structure in consumption. *Journal of Consumer Research*, 38(5), 775-790.
- De Luca Picione, R. (2017). La funzione dei confini e della liminalità nei processi narrativi. Una discussione semiotico-dinamica. *International Journal of Psychoanalysis and education*, 9 (2), 37-57.
- De Luca Picione, R. (2020a). *L'impresa topologica di Jacques Lacan. La psicoanalisi tra superfici, confini, buchi e nodi [The topological adventure of Jacques Lacan. The psychoanalysis between surfaces, borders, holes and knots]*. Milano: Mimesis.
- De Luca Picione, R. (2020b). The Semiotic Paradigm in Psychology. A Mature Weltanschauung for the Definition of Semiotic Mind. *Integrative Psychological and Behavioral Science*, 54(3), 639-650.
- De Luca Picione, R. (2021a). Metapsychology of borders: Structures, operations and semiotic dynamics. *European Journal of Psychotherapy & Counselling*. <https://doi.org/10.1080/13642537.2021.2000463>
- De Luca Picione, R. (2021b). The Dynamic Nature of the Human Psyche and its Three Tenets: Normativity, Liminality and Resistance—Semiotic Advances in Direction of Modal Articulation Sensemaking. *Human Arenas*, 4(2), 279-293.

- De Luca Picione, R. & Freda, M. F. (2022/forthcoming). The semiotic forms of continuity and discontinuity in the narrative process. The psychological tension between the idiographic and the nomothetic. In S. Salvatore & J. Valsiner (eds). *Yearbook of Idiographic Science, Vol. X*. Charlotte, NC: IAP.
- De Luca Picione, R., Freda, M. F. (2016a). Borders and Modal Articulations. Semiotic Constructs of Sensemaking Processes Enabling a Fecund Dialogue Between Cultural Psychology and Clinical Psychology. *Journal of Integrative Psychological and Behavioral Science*, 50:29–43.
- De Luca Picione, R., Freda, M. F. (2016b). The processes of meaning making, starting from the morphogenetic theories of René Thom. *Culture and Psychology*. Vol. 22 (1), pp. 139–157.
- De Luca Picione, R. & Freda, M. F. (2016c). Possible use in psychology of threshold concept in order to study sensemaking processes. *Culture & Psychology*, 22(3), 362–375.
- De Luca Picione, R. & Freda, M.F. (accepted / 2022). The otherness in the constitution of the psyche: arguments from psychoanalysis and cultural psychology. In Fossa, P. (ed.). *New perspectives on inner speech*. Springer.
- De Luca Picione, R. & Valsiner, J. (2017). Psychological functions of semiotic borders in sense-making: Liminality of narrative processes. *Europe's journal of psychology*, 13(3), 532–547.
- De Luca Picione, R., Martini, M., Cicchella, C., Forte, S., Carranante, F., Tateo, L. & Rhodes, P. (2021). The Impact of the Covid-19 Pandemic: Psycho-Social Perception of The Crisis and Sense-Making Processes. *Community Psychology in Global Perspective*, 7, (2), 103–128.
- De Luca Picione, R., Martino, M. L., Freda, M. F. (2017). Understanding cancer patients' narratives: meaning-making process, temporality and modalities. *Journal of Constructivist Psychology*, 30(4), 339–359. DOI: 10.1080/10720537.2016.1227738
- De Luca Picione, R., Martino, M. L., Freda, M. F. (2018). Modal articulation: The psychological and semiotic functions of modalities in the sensemaking process. *Theory and Psychology*, 28 (1), 84–103.
- De Luca Picione, R., Martino, M. L., Troisi, G. (2019). The Semiotic Construction of the Sense of Agency. The Modal Articulation in Narrative Processes. *Integrative Psychological and Behavioral Science*, 53(3), 431–449.

- De Martino, E. (2012). Crisis of presence and religious reintegration. *HAU: Journal of Ethnographic Theory*, 2(2), 434-450.
- De Martino, E. (2019). *La fine del mondo: Contributo all' analisi delle apocalissi culturali [The end of the world: Contribution to the analysis of cultural apocalypses]*. Torino: Einaudi
- Dugas, M.J., & Ladouceur, R. (2000). Targeting Intolerance of Uncertainty in two types of worry. *Behavior Modification*, 24, 635-657.
- Festinger, L., Riecken, H. W., & Schachter, O. (1956). *When Prophecy Fails: A Social and Psychological Study of a Modern Group That Predicted the Destruction of the World*. Harper-Torchbooks.
- Freeston, M.H., Rhéaume, J., Letarte, H., Dugas, M.J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences*, 17, 791-802.
- Frenkel-Brunswick, E. (1948). Intolerance of Ambiguity as an Emotional and Perceptual Personality Variable. *Journal of Personality*, 18, 108-123.
- Freud, S. (1911). *Formulations on the two principles of mental functioning*. In The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XII. London: The Hogarth Press.
- Freud, S. (1930). *Civilization and Its Discontents*. In The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XXI. London: The Hogarth Press.
- Gödel, K. (1931). Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme, I. *Monatshefte für Mathematik und Physik*, 38, 1, pp. 173–198. [doi:10.1007/BF01700692](https://doi.org/10.1007/BF01700692)
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. *Advances in experimental social psychology*, 29, 61-139.
- Guerra, G. (2021). For a psychoanalytic clinical psycho-sociology. *Subject, Action, & Society: Psychoanalytical Studies and Practices*, 1(1), 31-40.
- Hogg, M. A. (2007). Uncertainty–identity theory. *Advances in experimental social psychology*, 39, 69-126.
- James W. (1890a). Habit. In *Principles of Psychology*. Vol. 1, cap IV. New York: Holt.
- James W. (1890b). The perception of Reality. In *Principles of Psychology*. Vol. 2, cap XXI. New York: Holt.
- Janoff-Bulman, R. (2004). Posttraumatic growth: Three explanatory models. *Psychological inquiry*, 15(1), 30-34.

- Janoff-Bulman, R. (2014). Schema-change perspectives on posttraumatic growth. In *Handbook of posttraumatic growth* (pp. 95-113). Routledge.
- Janoff-Bulman, R., & McPherson Frantz, C. (1997). The impact of trauma on meaning: From meaningless world to meaningful life.
- Jaspers K. (1925). *Psychologie der Weltanschauungen. [Psychology of the Worldviews]*. Berlin: Springer.
- Jonas, E., McGregor, I., Klackl, J., Agroskin, D., Fritsche, I., Holbrook, C., ... & Quirin, M. (2014). Threat and defense: From anxiety to approach. In *Advances in experimental social psychology* (Vol. 49, pp. 219-286). Academic Press.
- Jung, C. G. (1952). *Synchronicity: An Acausal Connecting Principle*. C.W., 8:416–519.
- Jung, C. G., & Pauli, W. (1955). *The Interpretation of Nature and the Psyche*. New York: Pantheon.
- Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 363-391.
- Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.
- Kay, A. C., Gaucher, D., Napier, J. L., Callan, M. J., & Laurin, K. (2008). God and the government: testing a compensatory control mechanism for the support of external systems. *Journal of personality and social psychology*, 95(1), 18.
- Kay, A. C., Whitson, J. A., Gaucher, D., & Galinsky, A. D. (2009). Compensatory control: Achieving order through the mind, our institutions, and the heavens. *Current Directions in Psychological Science*, 18(5), 264-268.
- Keefer, L. A., Landau, M. J., Rothschild, Z. K., & Sullivan, D. (2012). Attachment to objects as compensation for close others' perceived unreliability. *Journal of Experimental Social Psychology*, 48(4), 912-917.
- Koltko-Rivera, M. E. (2004). The psychology of worldviews. *Review of general psychology*, 8(1), 3-58.
- Lacan, J. (2006). *Ecrits: The first complete edition in English*. WW Norton & Company.
- Landau, M. J., Kay, A. C., & Whitson, J. A. (2015). Compensatory control and the appeal of a structured world. *Psychological Bulletin*, 141(3), 694.
- Landau, M. J., Sullivan, D., Keefer, L. A., Rothschild, Z. K., & Osman, M. R. (2012). Subjectivity uncertainty theory of objectification: Compensating for uncertainty about how to positively relate to others by downplaying their subjective attributes. *Journal of Experimental Social Psychology*, 48(6), 1234-1246.

- Lillqvist, O., & Lindeman, M. (1998). Belief in astrology as a strategy for self-verification and coping with negative life-events. *European Psychologist*, 3(3), 202-208.
- Lind, E. A., & Van den Bos, K. (2002). When fairness works: Toward a general theory of uncertainty management. *Research in organizational behavior*, 24, 181-223.
- Lolli, G. (2007). *Sotto il segno di Gödel. [Under the sign of Gödel]*. Il mulino.
- Mangone, E. (2021). *Incertezza, Futuro, Narrazione. [Uncertainty, Future, Narrazione]*. NaSC Free Press.
- Morin, E. (2000). *Dialogue sur la nature humaine*. Paris: L'Aube.
- Morin, E. (2008). *On complexity*. Hampton Press (NJ).
- Moscovici, S. (1961). La psychanalyse, son image et son public. Paris : PUF.
- Moscovici, S. (1989). Des représentations collectives aux représentations sociales: éléments pour une histoire. *Les représentations sociales*, 5, 79-103.
- Ogden, T. H. (2010). On three forms of thinking: Magical thinking, dream thinking, and transformative thinking. *The Psychoanalytic Quarterly*, 79(2), 317-347.
- Peirce, C. S. (1935). *Collected papers of Charles Sanders Peirce*. Harvard University Press.
- Possenti, I. (2005). *William James, Alfred Schutz. Le realtà multiple e altri scritti. [William James, Alfred Schutz. Multiple realities and other writings]*. Pisa: ETS.
- Proulx, T., & Inzlicht, M. (2012). The five “A” s of meaning maintenance: Finding meaning in the theories of sense-making. *Psychological inquiry*, 23(4), 317-335.
- Rutjens, B. T., van Harreveld, F., & van Der Pligt, J. (2013). Step by step: Finding compensatory order in science. *Current Directions in Psychological Science*, 22(3), 250-255.
- Rutjens, B. T., Van Harreveld, F., Van der Pligt, J., Kreemers, L. M., & Noordewier, M. K. (2013). Steps, stages, and structure: Finding compensatory order in scientific theories. *Journal of Experimental Psychology: General*, 142(2), 313.
- Salvatore, S., De Luca Picione, R., Bochicchio, V., Mannino, G., Langher, V., Pergola, F., Vellotti, P. & Venuleo, C. (2021). The affectivization of the public sphere: the contribution of psychoanalysis in understanding and counteracting the current crisis scenarios. *Subject, Action, & Society: Psychoanalytical Studies and Practices*, 1, 1, 3-30.
- Salvatore, S., De Luca Picione, R., Cozzolino, M., Bochicchio, V., & Palmieri, A. (2021). *The role of affective sensemaking in the constitution of experience*. Integrative psychological and behavioral science. <https://doi.org/10.1007/s12124-020-09590-9>
- Saporta, J. (2021). Psychoanalysis and our cultural crisis. *Subject, Action, & Society: Psychoanalytical Studies and Practices*, 1(1), 91-109.

- Scalabrini, A., Mucci, C., Angeletti, L. L., & Northoff, G. (2020). The self and its world: a neuro-ecological and temporo-spatial account of existential fear. *Clinical Neuropsychiatry*, *17*(2), 46-58.
- Schimmenti, A., Billieux, J., Starcevic, V. (2020). The four horsemen of fear: An integrated model of understanding fear experiences during the COVID-19 pandemic. *Clinical Neuropsychiatry*, *17*(2), 41-45.
- Schutz A. (1932). *Der Sinnhafte der sozialen. Welt*. Wien, Springer-Verlag, 1960.
- Schutz, A. (1944). On multiple realities. *Philosophy and Phenomenological Research*, *5*, (4), 533-576.
- Smorti, A. (2020). *Telling to Understand*. Springer International Publishing.
- Stenner, P. (2018). *Liminality and experience: A transdisciplinary approach to the psychosocial*. Springer.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel, & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-H.
- Thau, S., Aquino, K., & Wittek, R. (2007). An extension of uncertainty management theory to the self: The relationship between justice, social comparison orientation, and antisocial work behaviors. *Journal of applied psychology*, *92*(1), 250.
- Turner, V., Harris, J. C., & Park, R. J. (1983). Liminal to liminoid, in play, flow, and ritual: an essay in comparative symbology. In J. C. Harris & R. J. Park (Eds.), *Play, games and sports in cultural context*. (pp. 123-164). Champaign: Human Kinetics Publisher.
- Valsiner, J. (2007). *Culture in minds and societies: Foundations of cultural psychology*. Sage.
- Valsiner, J. (2014). *An invitation to cultural psychology*. Sage.
- Valsiner, J. (2021). *General human psychology: foundations for a science*. Springer.
- Van den Bos, K. (2009). Making sense of life: The existential self trying to deal with personal uncertainty. *Psychological Inquiry*, *20*(4), 197-217.
- Van Gennep, A. (1909). *The Rites of Passage*. University of Chicago Press.
- Venuleo, C., Gelo, C. G. O., & Salvatore, S. (2020). Fear, affective semiosis, and management of the pandemic crisis: COVID-19 as semiotic vaccine. *Clinical Neuropsychiatry*, *17*(2), 117-130.
- Wang, C. S., Whitson, J. A., & Menon, T. (2012). Culture, control, and illusory pattern perception. *Social Psychological and Personality Science*, *3*(5), 630-638.

- Waytz, A., Morewedge, C. K., Epley, N., Monteleone, G., Gao, J. H., & Cacioppo, J. T. (2010). Making sense by making sentient: effectance motivation increases anthropomorphism. *Journal of personality and social psychology*, 99(3), 410.
- Weary, G. & Edwards, J. E. (1996). Causal uncertainty and related goal structures. In R. Sorrentino and E. T. Higgins (Eds.), *The Handbook of Motivation and Cognition (Vol. 3): The Interpersonal Context*. (pp. 148-181). New York: Guilford Press.
- Weary, G., Tobin, S. J., & Edwards, J. A. (2010). *The causal uncertainty model revisited*. Psychology Press, New York na. (pp. 78-100)
- Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science*, 322(5898), 115-117.
- Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *science*, 322(5898), 115-117.
- Winnicott, D. W. (1953). Transitional objects and transitional phenomena. *International Journal of Psychoanalysis*, 34, 89–97
- Zittoun, T. & Stenner, P. (2021). Winnicott, Donald. In: Glaveanu, V. P. (ed.). *The Palgrave Encyclopedia of the Possible*. Cham: Palgrave Macmillan.
- Zittoun, T. (2006). *Transitions: Development through symbolic resources*. IAP.
- Zittoun, T. (2021). Symbolic resources and the elaboration of crises. *Subject, Action, & Society: Psychoanalytical Studies and Practices*, 1(1), 41-50.