

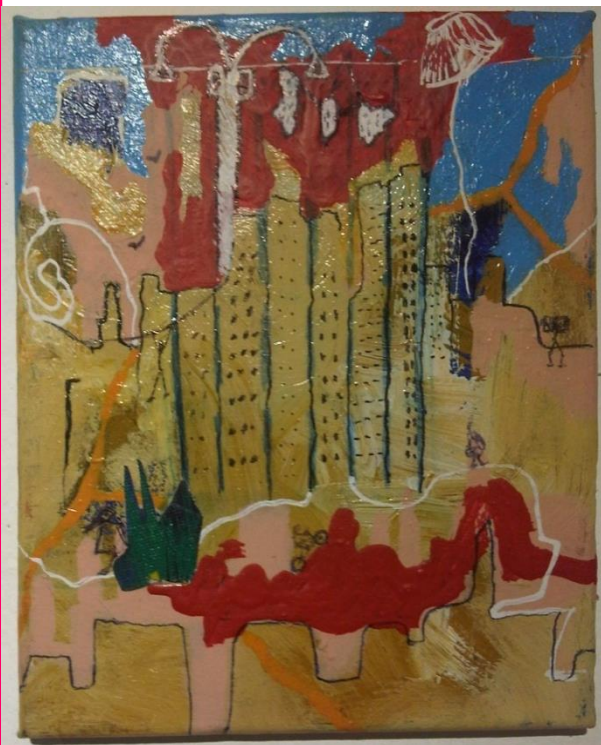
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EDITORIAL**The contexts of uncertainty: VUCA environments or BANI environments? Towards a social science *episteme***

I would like to refer in this opportunity to the problem of uncertainty that is increasingly gaining ground in the epistemological status of the social sciences. In particular, one of the aspects of the epistemology of management sciences or organizational management, as it may be called, stands out. This is BANI *environments*, as the issue of uncertainty at the level of the activities of organizations or governmental institutions is now called, which replaces, in a theoretical sense, but also in the sense of the praxis of management, the concept of VUCA *environments*, also referring to the same concept of uncertainty, but from other epistemic spheres for its consideration, since it is observed that as society faces the great challenges of nature that changes at the speed that marks the tachometer of the organicity of institutional and organizational life, it is clear that the elements that constitute these critical moments, experienced by society, must be addressed in order to successfully face the uncertainty that is transformed into a voluptuous act by negative within organizations and society itself.

Beyond the origin of the terms, which I leave to the readers and researchers to freely choose to investigate and specify, the central question I want to highlight is whether we are going through, as a civilization, the moments described conceptually by these two types of linguistic creations through their acronyms in the English language. Regardless of their meaning, I would like to emphasize that both terms refer to extreme situations of uncertainty, since the environment in which institutions develop has, as a characteristic, to be covered with nodules or observation points through which to deploy appreciations or scrutinizing glances towards social reality, and from there to organizations in particular, together with the environment that surrounds them, a matter that most of the time is appreciated in a diffuse way. And it is precisely there where the detail of this whole issue lies, discussed to satiety in the social sciences, especially as part of the elements of uncertainty that human action brings with it.

With regard to VUCA environments, it can be said that its application dates back to the beginning of the Cold War, since it was generated, from the very beginning, as a consequence of the uncertainty produced by the ideological confrontation of the two most powerful military blocs in the world, after the end of World War II. This brought

about a hostile environment for global diplomacy that put civilization itself on edge a few years after the end of that conflagration. The 1962 missile crisis was the culmination of previous episodes of mutual threats and skirmishes between the blocs, based precisely on the possession of weapons of mass destruction through the use of nuclear technology, tested to satiety by both sides in the icy conflict. I believe that humanity was on the verge of extinction at that time, had it not been for the skill and cunning of the great men involved in that episode (I refer the reader to the History of World War II and the Cold War).

VUCA environments, whose application dates back to the period mentioned in the previous paragraph, are characterized by providing organizations with strategies to overcome the crisis situation due to the uncertainty of the environments surrounding them. There are four elements: volatility, uncertainty, complexity and ambiguity. However, it must be said that the systems that are described and operate in a world of uncertainties, were already described by philosophy in general since classical antiquity (Heraclitus wrote passages with his doctrine of war and that of change; see in Sandoval, 2018), and by the theories of complexity, which especially, modernly stands out from the epistemology of complexity of Morin (2005), in addition to the system theory (Bertalanfy and Luhman are the reference; see in Martínez-Miguélez, 2005). In this sense, interpreting the fundamental elements of reality, described by the aforementioned philosophy, it can be seen that unstable systems, which by definition are complex, like all systems, tend to transform themselves as a product of their own energy and that of the environment; but also to disappear, as a consequence of the volatility of their parts, especially those that do not resist the onslaught of the environment in which they operate.

The example that we cite in this special point of reflection, comes from our childhood memory, when we had fun in the backyard of the house with brothers and friends, some of these already gone from this earthly world and others of whom I no longer have news, and others of whom we received pleasant impressions for their achievements; But of whose moments of all of them come to us pleasant memories of that distant time full of happy moments, like for example, playing with objects and toys of little elaboration, others of great work for their confection, but in general, all with which we obtained great moments of amusement. I remember the game of the spinning top, which is a piece of wood turned in the shape of a quasi-cone with a solid structure and a hard metal tip. This was played by winding a rope from its thinner end to the

thicker side, and it was thrown upwards with the thin end to then pull the rope, which allowed a spin up and down, thereby printing great spinning speed (torque speed, as this *momentum* is called in physics), which occurred physically in its metal tip.

Well, this type of movement constitutes a temporal system, in which, of course, the child is part of it, given his intervention to initiate the movement; but also, in his spinning, the spinning top can be hindered by the action of the same child that set it spinning (or of another child, to prevent its opponent from winning). In this way, a system is constituted that we could call a *finite system under threat*, since its existence in time is not only short, but minimal, as such a system, due to the threats of untimely interruption. In this sense, the spinning top as a finite system is threatened by an environment that is volatile, since we do not know what circumstance during its spinning may force it to break the equilibrium that sustains it "dancing" with the same force with which it was launched. The spinning top is threatened by the volatility of the environment formed by the players and the environment, the uncertainty of its duration as a system, the complexity that constitutes it (a solid piece of wood, a metal tip, a long rope, the action of rolling it up and throwing it into the spin, the surface where it spins, the children around it, etc.), but also the ambiguity of its movement (caused by the back and forth produced by the spinning speed, the obstacles of the surface, its initial torque, etc.).

This system of the spinning top, finite by definition, will stop at some point, since the friction of the surface will make it slow down until it stops. Therefore, it is also made up of a structure whose composition has all the complexity to be such a finite system, but not before possessing a certain characteristic as a system: the uncertainty of its permanence as a system, since it will disintegrate as a whole when it stops definitively, ceasing to be a system as such: its existence is uncertain and finite, although its duration is not known (the strategy consisted precisely in giving it more torque so that it could remain much longer; my brother, a year younger, was always better than me in this game). And this is what also defines its complexity as a system, so that interpreting when it becomes a system, going from a mere static object to a finite dynamic object, allows us to determine it as an uncertain but fun object (the fun consists in giving it enough force for its longer temporal duration). The spinning top is a system as threatened by VUCA environments, or BANI, depending on how you look at it.

Like the spinning top, the forces of an organization's environment operate in such a way as to introduce elements of uncertainty in general in order to carry out its business turn. It receives energy from its founders and partners to start its spin, with an environment that turns into a threat every time the energy that feeds it is interrupted. And we increasingly have environments shaped by greater uncertainty; hence, the change of descriptive nomenclature of the reality of organizations and complex systems (all systems are complex but shaped by singularities that are themselves complex) (HAWKING, 2022a; Morin, 2005). Affected by the VUCA environments, volatile in the ontological sense, society is experiencing in its structures, as sustainers of the gregarious sense, the disintegration of its elements in such a way that they make it change from volatile environments to brittle, fragmented environments, so much so, that it is possible to pass from one state, as described, to another state of greater instability, a matter described through the BANI environments.

The latter ones represent an element that the sciences of organizations are looking at to solve the great problems generated by the circumstances of excessive volatility of complex systems in this era of technoscience, coronavirus and warlike confrontation. That is to say, of excessive uncertainty, since all these definitions are rooted in the uncertainty that covers human actions and the uncertainties of knowledge about the physical and human reality that compose it. Environments are no longer volatile; rather, the reality of the environment within which they unfold is, rather, of a weak nature; that is to say, so lacking in strength that they break at the slightest jolt of energy received from their external context. Hence, this *momentum* is defined as "*brittle*" (*brittle*, which is the word that begins the respective acronym with its initial letter). But in addition to brittle, organizational systems today are described in another level of uncertainty, caused by personal elements of those who are at the head of the business or organizational turn.

Therefore, organizations and society as a whole as a system are not only covered by external energy, but also by internal forces that sustain the system thus formed, being also of vital importance the personal elements translated into motivational ones; these, i.e. the personal elements, are those who have under their responsibility and direction or turn, in a general sense, the materiality and energy of the organization. Ontologically, we thus see a system that is made up of external energy and internal energy; or, as we stated at the time (Villalobos, 2010), every organization, and every system, is made up of an internal context and an external context, mediated by an element that

transports energy in the two senses mentioned, this element being of a human or personal nature; this serves as a communicating vessel of the energy from which the organizational system is nourished. Well, if this vector element enters into psychological states that are not favorable to the social or organizational turn, the system enters into decline, and may even disappear as a system, transforming itself into a new one, or integrating its parts into another system, or simply disappear.

This is the central point of this editorial; that is, the elements that make up the states of uncertainty in any social organization and that are defined under the acronyms mentioned above. As in the game of the spinning top of our childhood, the finite systems that we form with the aspiration that their duration be prolonged in time, are affected by energies foreign to their systems, which, always, will tend to separate, dissect, fragment, even stop them, both from the physical point of view, as well as from the psychic point of view. From the psychological or personal point of view, the systems can enter into mental barriers of its directors, managers or leaders, which put it under threat, and from the physical point of view, enter into breakage of its ontological structure formed by the materials of which it is made and of the energy that moves it. For this reason, VUCA environments transitioned to BANI environments.

The anxiety provoked by the state of uncertainty by which the system entity is threatened is due precisely to the perception of destruction or disappearance that hangs over its head like the Sword of Damocles, since the ups and downs provoked by the reductions and increases of the energy that feeds it resent its reproductive system, thus causing the worst crisis that the system thus formed can face. BANI environments are the highest level of uncertainty that organizational and social systems can face. The 21st century has been an era of energetic storms in the social and organizational world, threatening their existence.

For the above reasons, from an epistemological perspective, the scientific positivism with which we persist in knowing the elements of these systems, not only continues to become obsolete, but also becomes an epistemic impediment, since the dynamics that shape the systems do not correspond to the ontological and epistemological conception on which positivism is based. Its logic is linear and, therefore, it is not possible to know its elements in depth in order to do organizational science.

Positivism as an epistemic paradigm is still not very useful to know the physical reality of social phenomena, much less to know the psychic reality of human nature. The logic of this epistemic method is based on non-dynamic reality, so that its consequences as a science will give us unhelpful results to understand and explain the phenomena that occur around the energies that feed the systems (although often these results may be contradictory to the very reality it explains). The singularities that physics defines only occur in the understanding that they persist as systems, a question that applies to everything that exists in the Universe (Hawking, 2022b). An organization or any social system is never a singularity, so that pretending to study it with a linear logic we will be destined to epistemological failure.

The VUCA and BANI environments are a living example to organizations and society of the chaos and uncertainty that physics describes as characteristic of the phenomena of the Universe. These environments turned into epistemological apparatus are the proof that positivism does not make much congruence with the definitions they embody; both are marked by uncertainty, although defined or characterized in different ways. These, being complex phenomena, and corresponding to the explanations given about organizational and social systems, merit a complex and systemic approach, since the threats to their duration in time are also complex and systemic. As in our childhood game, organizations and society are threatened by the energies that make up their systems, only that, unlike the spinning top, in society and organizations, our life is passing, because in them and through them we transit ephemerally.

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