Chapter 4
Between the Psychology of Creative Processes and the Dynamics of Innovation in Culture: Semiotic Challenges in the Modeling of Creativity

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Creativity in Cultural Psychology

Understanding creativity as an object of psychological study is a rather complex task. First of all, as Valsiner (2017) warns us, creativity is not a scientific concept per se but a term coined in culture, widely loaded with common sense meanings, which aims to define a certain phenomenon – which, in our perspective, is the emergence of the novelty. In general terms, the creative act could be understood as a goal-oriented act that establishes a partial rupture with what is traditionally offered in response to a given situation.

Based on cultural psychology, Glăveanu's studies (2008, 2009, 2010, 2015) aim to develop an interpretation of creativity anchored in its sociocultural genesis, highlighting three key concepts: *We-Paradigm*, *5As*, and *Distributed Creative Action*. The *We-Paradigm* emerged from the late 1970s, when studies began to search for a social nature of creativity, conceiving the environment as a context of strengthen and/or limiting creative abilities. It arose in response to the *He-Paradigm*, in which we find *creativity associated with* the figure of the genius and revolutionary, quite distinct from ordinary subjects, and the *I-Paradigm*, in which creativity is thought as a *potential that exists* in every individual and can be developed in different ways through socialization.

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The *5As*, *Actor*, *Audience*, *Action*, *Artifact*, and *Affordance*, coexist contextually and dynamically, expanding the possibilities of action and perspectivation. They can be identified in a variety of situations, as we are constantly subjected to circumstances that require us to respond to perspectives of our audiences, in which we make use of the resources available in the context for the construction of something, leading us to the third concept: the concept of *Distributed Creative Action*. In this perspective, creativity concerns to the generation of new artifacts in a specific cultural contingency. Space and time relationship and intersubjective construction over the alterity of the world are fundamental in understanding the creative-imaginative actions involving the actor, artifact, and audience that drive the generation of a new object, understandings, or its uses for significant purpose.

Cultural Psychology uses the concept of perspective as fundamental baseline to understand the process of constructing and transforming actions. The perspective is understood as a social and evaluative position, which is subject to multiple interactional possibilities between person, object, and context, allowing innumerable alternatives of action and, among them, the creative action. This process involves social actors in interactions and present or virtual-semiotic materialities, which enable them to recover memories and project results in a unique and unrepeatable way. For this reason, perspectivation is understood as the ability to move between evaluative positions in a process of meaning reorganization/recreation opening a space to the emergence of the novelty. Creativity is, in this aspect, dynamic, built/reconstructed circumstantially, subject to the moment and to the otherness in terms of actions that allow temporal displacements through recoveries (past), prospectations (future), and panoramic repositioning, using available resources seeking for an equilibrium in the produced meanings for the sake of an achievement.

Creativity is therefore inseparable from the cultural and semiotic context because it is through interactions with the multiple alterities that we transform ourselves, just as we re-signify our particular meanings. This transformation, in our significations, occurs through the perspectivation, articulated mainly through communication: in thinking, speaking, acting, feeling, wishing, etc. in its spatial-temporal uniqueness.

This transformation of the human psyche is based on symbolic activity. According to the concepts of Vygotsky (1996), language works as an organizing system capable of producing new forms of behavior, in which the sign emerges as a psychological instrument, producing and stabilizing a network of semantic-psychological meanings through socio-historical-cultural relations.

Creativity and Innovation: Semiotic Challenges

The shifting of creativity from its historical focus on the individual *to a more dialogical approach* puts it in tension with the process of innovation. Despite the investigation of the resonances of the new in culture, innovation studies are *also* dedicated to the understanding of its emersion. The impasse of differentiation between the

signs and grammars of creativity, in the psychological culture, and of innovation, in the culture of contemporary organizations, seems particularly relevant to be analyzed in so far as innovation becomes a frequent object of study with an increase in published materials in the period from 2009 to 2011 (Bruno-Faria & Fonseca, 2014). This expansion of the theme especially involved the organizational question of the *culture of innovation* in institutions such as the company and the school.

Innovation has been seen as a competitive organizational element, enhancing the performance of an organizational entity, leading to better economic results (Dobni, 2008). Organizations and leaders are trying to create an institutional framework in which creativity and innovation are accepted as basic cultural norms. It has become clear that the "unwritten rules of the game" (norms of behavior) and shared values influence the moral, performance, and the application of creativity and innovation in different ways (Martins & Martins, 2002).

It is pertinent to note that the terms creativity and innovation are used in similar forms in contemporary culture. Such similarity occurs once both notions share a social character in its inner nature (Glăveanu, 2009). In this sense psychology and innovation culture share a similar object of investigation, asking for answer about how a practice or new product can emerge from a particular social arrangement, in the case of innovation: from an organizational entity. The notion of innovation, therefore, becomes attentive to the emergence of the newness from social arrangements and the interaction of a subject with a cultural structure, which must be able to accept this breakthrough of novelty and must be ready to foster it and to generate a good space of exchange between subject and society. According to Pinheiro and Meira (2016):

> Inspired by the conceptions of Schumpeter (1988) and Kelley (2005), we understand innovation as a novelty capable of triggering in society the emergence of new ways of acting and communicating, based on the use of artifacts, processes and services specially designed and distributed through of high performance channels. A novelty is innovation only when it responds to demands, dialogues with expectations and effectively resolves problems experienced by any social group. (p. 223)

But then, how to differentiate the concepts of innovation and creativity? This is a challenge that, based on semiotic cultural psychology (Valsiner, 2014), we aim to address as a sustainable way to analyze the phenomenon of the constitution of creativity and innovation as symbolic productions that try to account for the emergence of the novelty in the world of life and science.

Fragments for Discussion About Creative Processes in an Innovation Institution

In order to give shape to the challenges of creativity modeling and its differentiation from the innovation culture, we bring a fragment of Melo's research (2018), which seeks to understand the dynamism of the creative process in the development of artifacts in an innovation institution. In the analyzed data, professionals from

different areas of knowledge and work at the institution were brought into dialogue to bring to the discussion the points of view of those who work in the operation, customer service, *and* systems planning *in* search of a synthesis that meets the needs of *stakeholders*. Subsequently, the narrative of one of the subjects*, who was* characteristically questioning and, thus, important *in the* guiding of knowledge in the elaboration process of the presented result, was explored. We selected two passages of his narrative, produced by an interview, in order to problematize, from the participant's speech, the possible tensions and approximations of the grammar of innovation and creativity in the field of subjective experience.

> E: Now I wanted you to complete the sentence with what comes to mind: working on *the name of the institution* is like:
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> S: (...) (Laughter) It's like? It's a comparison, right? Right. It's like a metaphor. You want a metaphor. (...) It's like ... It's like working in a car machine shop, there's always something for (...) there's a problem to solve, I do not know (laughs).

In this interaction, it is interesting to observe that the interviewee – an engineer – uses a metaphor of the popular imagination of engineering, a mechanical work field (a car machine shop), in this case, a place of fixing and repairing and a place where it is known how things work and how they are produced. This statement, provoked in the interaction with the researcher, seems to emerge in speech as an important signification for his activity that on the one hand could allude to the set of meanings at play in the grammar of repair, restoration, maintenance of the order of things, and, in the other hand, a solving problem field, which could indicate the recognition of the emergence of the new in the process involved in the construction of the solution. If the present answer does not allow us to infer an opposition in terms of the significations that the participant constructs for his activity, later in the interview, we find the following formulation:

> Q: And what do you mean by technological innovation?
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> S: Technological innovation is technology innovation, it's not what we do in [name of the institution that he works]. Or it is very little what we do there. Technological innovation is what the university does, is what some leading research laboratory does, which is to advance in the state of the art, to advance in the state of technology, what we do is not this. For example, you develop a new material, a new way of (..), like, I am studying about batteries for electric cars, right? So there are labs in the world that are developing new materials to use on cathode and battery anode, on battery terminals, that this improves battery life, improves shelf life, such as graphene and other revolutionary materials there, so this is technological innovation for me, this is the university's role, laboratories… what we do here is open innovation, we use these technological innovations as a tool to solve real problems.

In this passage, the interviewee uses a differentiation between technological innovation and open or applied innovation, seeking to situate his activity in the universe of fluidity between institution and the market, as opposed to the closed, pure, technical innovation, inside the laboratories, in a disruptive relationship to external demand. It seems that here comes a differentiated meaning that obeys the objectivity of the action taken to meet the demands, where innovation gains degrees of classification and open innovation uses closed or technological innovation for practical

applications. Further on, commenting on the process of ideation of the solution in which he was participant, *he* states:

> S: [...] And this project has nothing challenging, it's just work, that's the way it is, it's not a different thing from what we do here, so that was the vision I wanted to show them, it's an engineering project and we have a process to follow.

In this context, the opposition previously addressed in an abstract, static way, now acquires acuity in the universe of the interviewee's understanding of his doing, characterizing it as non-challenging, procedural, of the engineers' office, despite requiring information from other sectors of the company. In this sense we can infer *that*, through the statements in the speech of the participant, two oppositions emerge: the first of a more static and limited nature, open and closed innovation, having as definer element the market demand (virtualized/perspectivized by the interviewee), and a second one, between the procedural, work, routine, and challenge-oriented innovation grammar, which subverts familiar repertoires for the construction of solution.

In making the differentiation between technological and applied innovation, the engineer's discourse brings to light meanings produced according to the recognition of the actions: being technological if the amplitude of this new one is more generalized in terms of applicabilities and hovering in a level of signification pure and high. On the other hand, the applied innovation is directed to the fulfillment of demands, approaching techniques of problem-solving, being remarkable/expressive the term *process* to designate the adoption of a method to be followed for the achievement of objectives.

It is interesting to note that innovation, in a broader sense, seems to play a place at the same time as precious, value, and axiological; on the other hand, it is not recognized in the ordinariness of the processes – the understanding of the requirements of the task, etc. In this context, the domain of engineering emerges as a point of negotiation of meanings, while reaffirming its difference, about the activity with the other actors involved in the project (non-me) who participate in the daily life of an open innovation company. Based on the reflective turn promoted by the interview situation about the daily life of his activity, the interviewee perspectives his work through the signs of his personal culture, producing new meanings. The emergence of the novelty would, thus, be conducted by a shift from his position in the routine of his professional doing to one in which he becomes an audience of himself. In this sense, engineering becomes not only an identity but also a triggering affordance of constructive actions of significant dualities in the agent's experience such as open and closed innovation, work and challenge, and solution and innovation.

In this perspective, according to Valsiner (in the present book), culture is a meta-concept accessible only through agentive semiosis that occurs in the relation between subject and culture. In this sense, in the participant's experience, it is as if the grammars of identities and domains of knowledge were more resistant and less open to dialectical syntheses as proposed in the Valsiner model (in this book). A problem could not be engineering and non-engineering simultaneously. However, in innovation, these differentiation edges become open, caring on some porousity, due

to the market place, the appropriation of the requirements, the necessary fluidity of the dialogues to understand the problem and build the solution.

In the interviewee's speech, creativity is a term that does not appear on its expressive vocabulary but in terms of its dynamics seems to be oriented between the tensions between its technical domain and everything that stands as distinct from the grammar of engineering with its procedures, as we can see in the following section:

> [...] Regarding the issue of creativity, really this story I do not know if this exists in Germany (..) they always try to understand how the business has been done in the past, what went right, what went wrong, is a different way to think, right? Nobody thinks much (..) is (..) does not have other visions, so, you know? You do not try to bring to the discussion different profiles, they are always engineers, engineers, engineers, engineers, have already done that, already done it, 10 years, 15 years, 20 years, so it is very traditional [...]

We perceive that, in this understanding, creativity departs, in the participant's language game, from the usual engineering environment, in which the solutions arise in response to analytical and technical reapplications. This may be due to the cultural charge of recognition of creativity only in great deeds and great works. So, his perception concerning his own work is lost, in terms of creative activity, once it faces the task procedural executions in the search for solutions or in attending demands according to technical process prescribed by engineering scientific discipline. However, there is a certain recognition of the relevance of the participants in the act of engaging in this process when it refers to the insertion of different profiles for the discussion. The temporality, in turn, acts here as a guide in the rescue of experiences configured in the game of right and wrong. Even though that novelty emerges in technological and practical innovation as well as in creativity psychological research, it seems that the participant takes its meaning according to the contextualization involved in its production, changing its social recognition in organizational practices.

Innovation is therefore a divergent notion of creativity, but not antagonistic. It seems to be connected to an organizational culture that gives it meaning in terms of reaching expected results, while creativity would be positioned in the modes of dialogues, coordination, integration, and perspectivation of the alterities that participate in a certain field of action.

Final Considerations

The novelty's emergence which creativity seeks to account falls into an area not necessarily structured but circumstantial and dynamic, produced by a significant interaction between subject and culture. Creativity is present in art, science, and everyday life through metaphor's construction established in dialogues of quotidian context, in the conception of products, in the solution of problems, and represents the mark of a singular production, temporally situated, co-constructed and using semiotic resources and imaginative projection for to consolidate. However, the

novelty of innovation culture aims to achieve a zone of revolutionary significance, organized enough to remain in culture and continuously modify the practices of a given subject in relation to its ethos. Therefor, the novelty of innovation culture is a new metaphor that proposes itself to be crystallized over time, to become the new consolidated form of use/relationship.

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