Generalized Semiotic Functions of Borders' model. Contributions from cultural psychology, semiotics and psychoanalysis to-wards the understanding of borders in human experience

De Luca Picione R.[1] ⓘD *, Marsico G.[2]* ⓘD *, Tateo L.[3]* ⓘD *& Valsiner J.[4]* ⓘD

Abstract

The article is an exploration of the bordering process, its theoretical foundations, its ontology-dynamics and phenomenology in human experience. The research question is how bordering, which is ubiquitous in human psyche, works and contributes to the way we experience the world and make sense of it. On one hand, borders works in terms of objectification (namely, they define temporary ontologies of objects and scenario); on the other hand borders are processual devices that enable the development of relational systems. Furthermore, we will discuss the ontogenesis and sociogenesis of bordering and its affective dimensions. The theoretical framework we use to discuss borders is a dialogue between cultural psychology, psychoanalysis and semiotics focusing on a processual and developmental perspective. By the dialogue between these perspectives, we will highlight the multiplicity of functions of borders and their ambivalences and paradoxes. Finally, we propose the concept of bordering as primary way of organizing the human experience – in terms of subjectivity and sociality - and discuss the idea of bounded polyvalent affectivity of borders.

[1] Giustino Fortunato University, Benevento, Italy.
[2] University of Salerno, Italy and UFBA, Brazil.
[3] University of Oslo, Norway and UFBA, Brazil.
[4] Aalborg University, Denmark and UFBA, Brazil.

Corresponding author: Luca Tateo, email: luca.tateo@isp.uio.no

Introduction

This article aims at providing a theoretical understanding of the psychological aspects of *bordering* as a process of meaning construction, maintenance, and disregarding of the border. The leading research question is how does bordering work and how does it contribute to the way humans experience the world and make sense of it. We will discuss the cognitive, affective and cultural dimensions as well as the ontogenesis and sociogenesis of bordering.

The end of the 20th Century was characterized by the focus on globalization: the dream of a hyper-connected and borderless planet with free circulation (for economy and capital namely). At the crossing of the 21th Century, the pendulum apparently swung to the opposite side. Conflicts on international borders suddenly rekindled, walls were built again, human rights were denied again to many people. Human ambition in the world collided with the reality of limited resources and the many borders that people create to each other.

Hence, the societal role that borders play become manifest. Humans shifted from an optimistic trust (an illusory creed) of cancellation of all borders (considered as an impediment to human freedom) to a pessimistic and catastrophic vision of human action that requires the strengthening and multiplication of borders as systems of protection, surveillance and defense. On closer inspection in both cases, the border retains a central salience in the organization of people's lives and their development. This prompts us to consider the constitutive and indispensable importance of borders, without easily falling into either apologetic or common-sense defeatist conclusions. Indeed, borders are important not only for their function of demarcation and separation, but also for their ability to create relationships' systems out of distinctions. Indeed, we argue that borders are semiotic devices that are not "localizable" *strictu sensu*. For example, the dialogue between different voices is a form of relationship allowed by the recognition of difference (see Bakhtin, 1984; Linnell & Rommetveit, 1998; Lotman, 1985). Borders can take the form of internalized signs that function as semiotic regulators of psychical experience and action. Bordering is a necessary distinction-making process that enables agency, intentionality, and thinking in an open-ended future. Bordering constructs a temporary contextualization of the intra-inter-psychic field of experience that makes possible to anticipate the future.

Hence, we promote a debate about border-related phenomena and elaborate generalizable conclusions that lead to a high-level theoretical model of borders from a cultural psychological perspective.

The present work aims to provide the basis for meta-theory of borders and bordering that can be heuristically powerful in psychological sciences. The integrated model of border construction and regulation defines the structural and functional components of a border phenomenon in the socio-psychological realm.

Borders that separate and connect

Existing borders are objects that trigger deeply affective experiences. Their divisive aspect easily obscures their relational and connective value. Otherness is often experienced primarily as "enemy", "danger", "threat" to one's 'living space' or identity. This happens especially when identity is signified as purity, continuity and unity, it can lead to rhetorical

constructions such as the populist and sovereign styles in politics. In this case, the border is a homogenizing device that creates a supposed unity and compactness of the people against the "foreigner". It is a fencing tool, a system to be monitored to "shut out" (exclusion) or to "shut in" (ghettoization, isolation, imprisonment) the alleged enemies. Cognitively, it is a way to box the others into rigid categories of evaluation, and to reduce them to single-dimensional aspects based on labeling through origin, social class, economic power, etc.

Besides, the borders become salient in the critical moments of social and cultural systems, when they also play a compass function. For instance, during the European socio-economic-political crisis in the early 1900s, rigid forms of confinement emerged and spread, such as totalitarianism; racial purity and identity ideology; the creation of the other-as-enemy; and the loss of critical thinking and cognitive flexibility.

During the last decades, many events affected once again the foundations of civil and institutional coexistence systems and of symbolic-cultural systems. Considering the period that goes from 9/11 to the current war in Ukraine - including the wars in Iraq, Afghanistan and Syria, the 2008 economic crisis, the Covid-19 pandemic, etc. – one can see an increasing tendency to stiffening borders by a renewed appeal to national identity: to the strengthening of walls and geographic barriers as forms of defense rather than dialogue. This corresponds to a flourishing of border studies, including everyday border-making by understanding borders as institutions, processes and symbols (Scott, 2020).

As a human creation, borders have been object of empirical studies in social sciences (e.g., anthropology, sociology, political sciences, geography, and history). In recent years, many authors have encouraged the inclusion of new dimensions in border analysis, such as the epistemological, political, or emotional aspects (Nail, 2016; Nugin & Palang, 2020; Nugin et al., 2020; Sferrazza Papa, 2020; Kullasepp & Marsico, 2021; De Micco, 2019; De Luca Picione, 2021). However, border phenomena have been mainly understood in terms of topological distinctions between different and adjacent regions. Poor attention has been given to the people who live on the borders (Brambilla, 2007), and even less to the psychological dimensions implied in the process of border-making in mind and society.

So far, border studies are missing a theoretical framework to account for the relationship between macro- and micro-levels of border dynamics.

The bordering process

In the last few years cultural psychology has fostered the elaboration of border phenomena as complex systems made of subparts (in-betweenness; demarcation; demarcated areas; and relationships among them over time) (Kullasepp & Marsico, 2021; Marsico & Varzi, 2016).

The bordering process depends on human understanding and praxis (Brambilla, 2015). Individuals participate in their creation, and regulation of border have a direct consequence at psychological level. Indeed, borders should not be seen only as objects, but also as signs which organise and direct human actions (Marsico, 2016; De Luca Picione, 2021a, 2021b). Material or symbolic borders are assumed and internalised by humans in order to delimit their actions and to reduce the ambivalence in their lives. Therefore, borders

are conceived as semiotic devices, created and established by humans in a redundant circle between outside and inside. External structures and social limits will be internalised and will organise the intra-psychological realm; at same time, the work of subjectivating and affectivating will modify functions and forms. According to Español and Marsico (2021), we need to "humanize" the border and to grasp the bordering process in depth. A psychological theory of bordering needs to understand how humans interpret, create and modify borders, including the signs and actions needed to establish and maintain them. Cultural psychology, psychoanalysis and semiotics provide the conceptual tools for understanding the bordering processes from the micro-genesis to the socio-genesis.

The study of bordering in cultural psychology begins with the reflection about the importance of "*the space in between*" for understanding psychological and cultural phenomena (Marsico, 2011). The space in between is the place where semiosis processes emerge. The semiotic nature of bordering can be already found in the concept of "horizon sign" (Tateo, 2014). There are some particular types of sign whose microgenetic function is to create the condition that allows semiotic objects to enter the person's life space. The sentences "I feel X" or "I don't want Y" express an affective or volitive condition of the person's life space. If a particular type of sign is added, "I feel X *now*" or "I don't want Y *but*", the meaning of the sentences is modified and opens to a potential change on the temporal horizon. This is possible because the horizon sign produces a complex of meaning made of two complementary parts: the sign "*now*" implies that there is "*not-now*" that is an open space of possibilities in the future. The border between the current organization of the life

space – in Kurt Lewin's sense (1936) – and the future of possible states that are not yet semiotized, is the psychological horizon. "The horizon/sign is the specific sign that, once produced, establishes the conditions for the psychological horizon to participate in the production of new psychological phenomena through the co-regulation of psychological processes." (Tateo, 2104, p. 236)

In addition, cultural psychology pointed out some general systemic features as part of any border phenomena that could range from borders between nation-states; to those between one's house and another in the neighbor; or from border between an ethnic group and another to that one which operate at intra-psychological level (Tateo *et al.*, 2018). Psychology may contribute to reflect on the borders in human lives as culturally constructed objects by focusing on the fencing nature of the human being and its interpersonal and intrapersonal implications. Borders are here investigated as material (walls, fences, or gates) and immaterial artifacts (set of rules or signs) both regulating and guiding our concrete and psychological life. We want to explore three different dimensions of the ontology of the bordering in psychology: a) The intra-inter-psychological dimension of border: b) Border as regulatory semiotic process; and c) Bordering process and its polyvalent affective component. In the following pages, we will try to discuss these dimensions by building a dialogue between psychoanalysis and cultural psychology of semiotic dynamics.

The conceptual and clinical elaboration of the notion of border by psychoanalysis

The idea of the border is by no means alien to psychoanalysis. It was present since

Freud's very first works and subsequently taken up and elaborated by several authors who contributed to the development of psychoanalytic theory and clinic.

The idea of the border is developed in many different ways:

- in *spatial terms* as a delimitation of the psychic structure (both towards the outside and towards the separation between internal psychic spaces with specific properties),

- in *functional terms* as a device that makes possible a series of different psychic functions and processes,

- in *relational terms* as a system that enables the construction, transformation and undoing of human relationships,

- in *temporal and developmental terms* as a process that makes possible a series of transformations and changes.

As early as the *Project of a Psychology* (Freud, 1895), we find the notion of a *contact barrier*, which is a border area that protects the psychic system by regulating the passage of the quantity of energy between external and internal. This barrier functions primarily as a defense for the ego integrity (against traumatic experience, psychic rupture and laceration). Furthermore, the contact barrier of the psychic system performs a triple function of *separation/connection* between conscious and unconscious, between memory and perception, and between quantity and quality. In 1923, Freud further elaborated on this idea by promoting a structural model of the psyche called the *second topic* (the psyche is tripartite into Id, Ego and Super-Ego). The Ego is the result of the modification of a portion of the Id, produced by contact with the outside world. At birth, the individual is constituted by the Id, while the Ego develops only gradually through the relationship with the external world and through identifications with others. The function of the Ego is on the one hand of mediation between the internal world and external reality, and on the other hand of mediation between the Id's drives and the censorial demands of the Super-Ego. It is important to note that through its ontogenetic development (never untied from social relationships), the Ego introduces the temporal dimension for the mind that allows us to tolerate frustrations and offers the possibility of delaying / procrastinating drive satisfaction in the future.

Thus, the Ego in Freudian theory is considered as a very border, that is to say as a *body surface of separation and mediation between the inside and the outside* (Freud, 1923). It works simultaneously as a *double interface*, that is, with a double perceptual level, both inward and outward.

The Ego as a border functions as a real psychic skin, actually. The Ego is derived from bodily sensations, mainly from those that arise from the surface of the body and stands as the representative of the superficial elements of the psychic system.

In summary, for Freud the Ego as a Border and mediation surface:

- it is formed by progressive differentiation from the Id, through the pressure of the external world exerted in sensorial / perceptive terms,
- it acquires a gradual (but never full) autonomy of control of the motor system in the environment,
- it makes possible operations of thought through the translation in terms of verbal psychic representations (a true semiotic re-transcription in the form of associative chains of signs and semiotic mediation) of one's own instinctual / affective experience and with the world.

The idea of the Ego as a border is further elaborated by Paul Federn (1953), who discuss the notion of the *Borders of Ego*, stating both the intrapsychic separation between the different psychic instances, and the environmental dimension distinguishing between Self and Other. Federn believes that the borders of the ego have a certain amount of their own energy, which helps to dynamically reshape and modulate drive investments in oneself and in the outside world. This remodeling is susceptible to changes according to age, particular events or situational factors (such as deprivation or excesses of stimulation), but also with respect to daily changes such as the phase of falling asleep and awakening (in which the libidinal charge on the borders of the ego is respectively withdrawn and then recovered).

According to Federn, there is a feeling of the ego that is primary, at the same time constant and variable, and it is regulated by the relation of stability *vs* fluctuation of the ego's borders. It consists of three constituent elements:

a) the feeling of unity over time (*continuity*);
b) the *unity in space* (in the present moment); and,
c) the notion of causality.

We find in this elaboration the idea that borders contribute to the construction of identity (in terms of separation, localization and representability).

The psychoanalyst Didier Anzieu also takes up the idea of the *contact barrier* and of the ego as a border, extensively developing the notion of the *skin-ego*, and highlighting how it fulfills the *function of interface* and *psychic envelope*. Skin-ego is not only a sac – i.e. material container - but a real operator capable of staying in contact between the internal and external world, of collecting and transmitting information, (Anzieu, 1985). It acts as protection from stimuli, delimitation of outside/inside, reception of stimulation, mnemonic recording, transmission, compactness / containment / cohesion of psychic elements, contact and relationship with others. The basis of the processes of symbolization and construction of identity is to be found in the border functioning of the skin-ego.

The psychoanalytic vision emphasizes the fundamental implication of the Other in the development of the process of identity and psychic differentiation. It is necessary that there is an adult (often called *caregiver*) who performs the functions of care and affective investment towards the newborn protecting him from excessive stimulation, allowing the gradual exposure and elaborating disturbances and difficulties, allowing a narcissistic mirroring in order to feel oneself as worthy and be worthy of be loves.

Another fundamental development of the notion of "*contact barrier*" runs through all of Wilfred Bion's work, according to which, at the basis of every thinking activity, there are emotional experiences and unprocessed sensory impressions (*beta elements*). Beta elements are not yet thinkable. They need to be primarily psychically digested and symbolized through the help of the adult (transforming the beta elements into *alpha elements*, i.e. the first forms of symbolization) (Bion, 1972). The contact barrier, in a continuous process of formation, is intended as a semi-permeable membrane that provides the ability to sleep or stay awake, to be conscious or unconscious, to have the notion of past or future, to distinguish between the inside and the outside (without rigid and inviolable positioning). The contact barrier is the basis of the vital relationship with the outside world and with others. Here,

too, the central point that Bion highlights is that the child, in the earliest stages of his development, is unable to autonomously transform his own affective experiences and sensory impressions into symbolic elements. The mother fulfills the *'container function'* of the infant's psychic projections, or in terms of a very bordering process that at the same time delimits, holds together, transforms, and processes the infant's experience, making the experience as psychically digestible. According to Bion, it is in this transition of thinkable elements that the psychic birth of the subject begins. The mother, through her border/edge/containment function, not only transfers symbolized elements, but also the ability to think itself (the so-called *alpha function*). Border and affect processing are closely connected in this original developmental perspective.

The English psychoanalyst Donald Winnicott also recognizes the pre-eminence of maternal containment and the environmental protection that the mother exercises towards the newborn. According to Winnicott, the intersubjective operations that invest in the functioning of borders allowing the gradual *development of identity, integration and independence* (as a process towards separation and autonomy) are three:

1) *Holding*. Maternal containment (think of an enveloping embrace that holds the child cohesive) works as an enveloping border and allows you to feel the integration of the body, to overcome fragmentation and to perceive the continuity of one's existence);

2) *Handling*. Maternal care (cleaning, dressing, cuddling, etc.) exerts sensations on the body that allow the skin to be felt as a delimiting membrane that distinguishes *me* from *not-me* and that produces pleasant or unpleasant sensations;

3) O*bject-presenting*. The mother introduces the world to the child by presenting new stimuli and objects into the child's experiential horizon. This allows a gradual perception of the world as something separate and other than itself and begins the gradual undoing of the illusion of omnipotence (that is, the illusion that whatever exists comes from my magical activity).

This illusion of omnipotence will in reality always remain central to the psychic development of the individual and it is important that it remains present and vital at every age of life. In fact, the most original and well-known idea of Winnicott's thought is the formation of the *transitional object* and the *transitional space* (between four and twelve months of life), or a third psychic area (called the *zone of illusion*), whose function is that of constituting 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, 1962).

Another original and fruitful elaboration on the value and importance of borders is proposed by the psychoanalyst René Kaës. He further develops the notion of border in terms of *limit* and *intermediation*, recognizing their

essentiality for the processes of symbolization, intersubjective bonds and development of cultural systems. In the development of the individual and of civilization, a whole series of "psychic structures" (*psychic containers* and *envelopes*) are fundamental to ensure the processes of *mediation*, *articulation* and *transformation*. These border formations function both as a *limit* and as a *semiotic mediation* and are the conditions for the possibility of psychic work of symbolization and the formation of Otherness (separation is the basis for recognizing the difference between oneself and others). Kaës clearly defines the *limit* as a *threshold*, a *frontier*, a *passage* beyond which the world changes, the outside does not merge with the inside. He considers the limit not only as a topological category but also as a social and psychic one. The *limit* manages to separate and articulate places, generate differences, cohesions and conflicts These formations and these intermediary processes are therefore at the heart of the ability to dream and to play, to think, to love "without sticking to the object" (Kaës, 2013, p. 195).

The border - at the same time limit and promoter of psychic life and cultural development - is not centered on the exclusivity of a prescriptive/forbidding function, rather on the possibility that it as a limit / constraint can properly exercise a *mediation*. This mediation offers the development of that bond at the basis of which *psyche* and *culture* are possible (one the reverse of the other in the development of civilization).

These arguments allow us to highlight how the *intermediary function* of the border is the basis of a semiotic work of symbolization, of creating the sense of experience, of the link between intra-personal, inter-personal and inter-generational psychic life.

The notion of border is also in some way transversal to the whole work of the psychoanalyst Jacques Lacan, who uses a series of notions of topological mathematics to deal with the unconscious (De Luca Picione, 2020). Here we briefly recall the *cutting function*, as a topological operation, which – working in terms of discontinuity on a continuous surface - produces a series of significant effects (separation, loss, lack, singularity, symbolic castration, etc.) which are at the basis of the construction of subjectivity and its foundational relationship with Otherness.

Furthermore, the theme of the border is furtherly declined through the distinction between the *frontier* and the *littoral* (Lacan, 1971). Frontier and littoral follow two very different semiotic and symbolic logics. The littoral is what fades, it is what opens up to "the impossible", to a 'beyond' that is never reachable. The littoral separates in a nuanced way between different territories that cannot be commensurate with each other (just like the indefinite shoreline area between the sea and the beach). The logic of the frontier makes clear distinctions, and functions as an operator of difference by creating the possible conditions for making links, for relating distinct things, for creating chains of signifiers according to a differential logic. The logic of the littoral does not want to do anything but One, namely it aspires to the indistinction, to the fusionality. The frontier is included in the area it delimits, that is, it exercises its reassuring delimitation within a *closed set* (from the formal topological point of view the closed set includes its border), while the littoral is excluded from the area that delimits. In fact, the set in the case of the littoral remains open. The *open set* is that kind of set that does not include its border and therefore there is no ele-

ment that can function as a limit; thus, it becomes possible to infinitely approach the extreme together without ever being able to reach it.

In conclusion, psychoanalysis has elaborated and developed the general idea of the border in dynamic and transformative terms. Borders allow psychic and cultural development within human relationships by allowing differentiation, identity, separation, transformation of experience and its semiotic mediation and symbolic efficacy. Furthermore, a further strong implication can still be deduced: for the emergence of an individual psychic border to be possible, there must exist an intersubjective border (the Other, the 'Third', a super-ordered structure, etc.) that performs the function of containment, of frame and of protection (as care, scaffolding, containment, sharing). That works as a sort of psychic-cultural incubator that allows the gradual experience / expression of one's somatic, psychic and relational limits. This function of the 'Third' of the border ensures the possible conditions of meeting and local delimitation and differentiation. Beyond a trivial view focus on the interiority often attributed to the psychoanalysis, the intra-psychic can only emerge from the inter-psychic work.

These main issues about bordering functions and processes will be now developed further from a semiotic perspective in order to reach a higher level of abstractive modalization.

Borders in-between ontology and relationality: inclusive separation

Rather than mere dividers, borders are elements *in-between* that is parts of at least a distinguishable higher order system. The best example is the biological system of membranes (Kull, 2009, 2015) both separating cells from one another in a multicellular system and uniting them in a higher order system (inclusive separation) *precisely through that separation*.

The ontology of structures *in-between* opens the possibility to understand transactions between parts of a dynamic system. In biological sense, a membrane is a border that unites two cells. In that function, the structural part grants the functioning of the whole organism (figure 1).
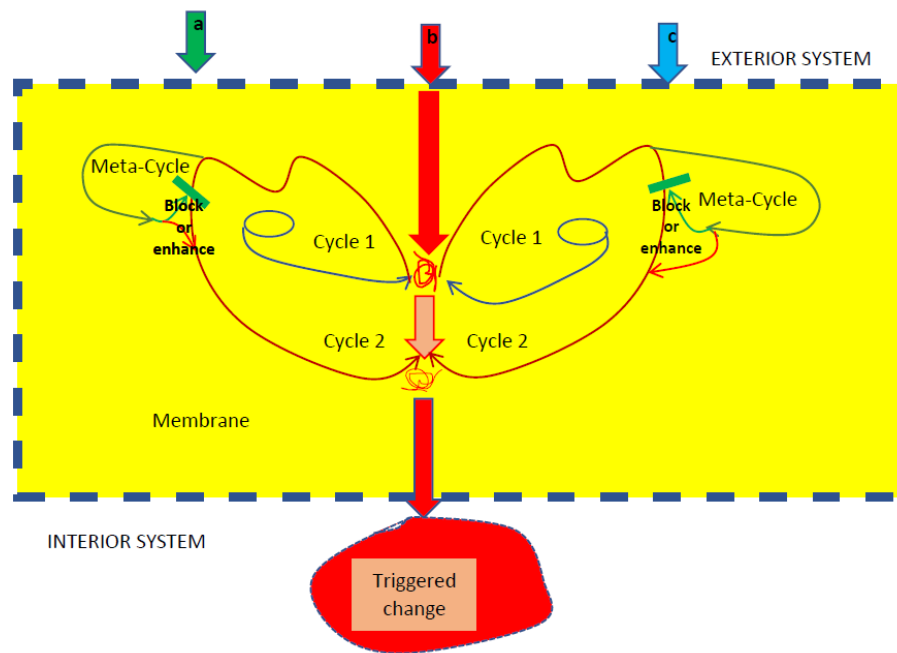
Figure 1. Membrane and its regulatory mechanisms

The basic function of the cell membrane is the maintenance of cellular tensegrity through the selective gatekeeping of what can cross the border. Noteworthy, the gatekeeping works in both directions: the selection of what is going out is also important for the survival of the cell (e.g. not let out too much liquid or nutrients). Another important function is buffering the changes both within and outside the cell in a conservative way: only select materials are left through. However, minimal variations of the conditions can be tolerated without necessity of reorganizing the whole. Figure 1 illustrates the case of redundant checking of the substance looking for transition through the membrane by regulatory cycles (1 and 2) that themselves are regulate by meta-cycles, which play the buffering role. The latter can allow the transition of the material through the membrane (trajectory "b") or direct the regulatory cycles to stop it (described in Figure 1). The membrane blocks other transition-prone substances ("a"; "c") from transit. *Regulated selectivity* is the basic feature of the processes in the membrane.

In psychological and social sense, a border is a regulator in dynamic relationship between the parts in a system. The regulation can be expressed as personal sign-construction (intra-psychological) or social norm-regulation (inter-psychological).

As there is no infinity without a horizon line, there are no biological organisms – since the level of the cell – which can survive without making borders with their surroundings. Both physical and mental life are thus about borders. Moreover, borders are not only about closing and delimiting. In analogy with the organic membranes, borders are living and permeable parts. They are made to delimit and negotiate at the same time (Marsico, 2016). While the dividing nature of borders is a frequent fact of life in everyday situation, borders study from a cultural psychology per-

spective may also unveil interactions and connection as well as the psychological functions of the border-making and border-regulating phenomena.

For example, when children start the school, they learn through repetition of social dramatizations that there are material and symbolic borders, which define and orient their academic experience (Pascarella et al., 2022). They do not experience borders only as *limits or constraints* (e.g., "I cannot cross the gate and leave the school alone"; "I cannot get up from my desk while the teacher is lecturing"). Borders also mark *thresholds* ("when the bell rings at the end of the lesson and you can leave from the classroom to play in the yard, then the rules of interaction between classmates change")*, and *possibilities* (e.g., "what are the rules I can break?"; "What happens if I do not comply?"; "Will I get disapproval by the teacher? Admiration from mates? Punishment from parents?"). Through recurrent situations and social interactions – happening in the form of dramatizations bounded by socio-material borders - children activate open personal cycles of 'internalization <> externalization' that build their own affective and social value of the borders.

Borders as signs: semiotic processes and inherent dynamism of borders

Signs regulate both one's own and others' feelings and conduct, drawing a border between the acceptable and the unacceptable, the past and future, the inside and outside, the identity and otherness (De Luca Picione & Valsiner, 2017). They are disseminated in the human-featured environment in many forms (street signs, architectural elements, sounds). The personal nature of meaning-making in self-regulation makes it possible, for instance,

for a person to know about an expectation or a norm (or to expect others to know about it) but to ignore it or not use it themselves.

Yet, interpretation is purposeful and all signs are ambivalent and polysemic; the first interpretant can become the object of a new semiotic act. So, one can produce another sign, a new regulation ("I will smoke anyway"), that overcomes and neutralizes the first one, albeit both are still working. This is the most basic process upon which distinction-making emerges ("I am me, and you are you, and we are different"). Distinction-making grounds the process of value-adding. At the same time, through the regulation of signs over other signs, distinctions and values can be demolished or circumnavigated to create new meanings (e.g., "I am me, but I do not care, so I will do that anyway") that can lead to different externalizations. According to Marsico et al. (2013), meaning-making, distinction-making, and value-adding are exactly the three processes involved in the construction of borders in mind and society. Borders, in the semiotic perspective, are thus a special type of sign. Individual life course and space progressively populates meaningful objects and persons that constitute a system including (internal and external) borders. Borders produce hierarchies, value differences, and needs that generate complex configurations of vectorial forces (Lewin, 1936).

Within the new established subset (e.g., a group, a territory, or a category) those instances (e.g., individuals, objects, and dimensions) that meet certain criteria will be included and will acquire a special value. The elements that do not have those characteristics will be excluded. However, bordering both reduces and increases ambiguity (Marsico et al.,

2013). On the one hand, borders reduce ambiguity through the act of demarcation, by limiting the space and the expected alternatives of behaving. On the other hand, since the division is neither rigid nor fixed, the interpretation of the border/sign is a partially fluid space where ambiguity reemerges.

Human experience is always guided by directionality and by goals that orient toward the future. When the action clashes against a border (i.e., everything is able to re-sist, namely produces a discontinuity) an imaginative process can occur (Figure 2) This happens when the movement towards the goal X encounters a block, which by opposing a counter-movement prevents its continuity. Such a dynamics produces as effect a third direction Y that emerges starting by the tension of the two forces. The creation of the Y is not already defined *a priori* and it is an act of creation from a field of virtual possibilities.
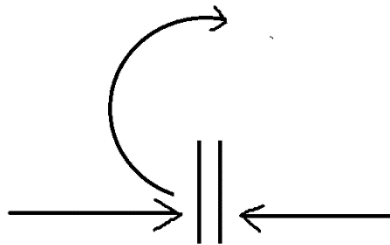

Figure 2. The directionality of sensemaking, the counter-action and the result of a third direction.

In this idea, we find the recall of Kurt Lewin's idea of *topological psychology* and *boundary* (1936) and the use of Meinong's notion of *Gegenstand* (1960). Valsiner's new original model - called "*Triple Gegenstand*" - defines the minimum structural unit of psyche. It is constituted by three necessarily connected moments:

1) The intentional movement A in the direction of a border;

2) The counter-movement B that maintains the border;

3) The reflection / folding of the first movement A on the second movement B and the possible emergence of a new direction (fig. 3).

In synthesis, the *Triple Gegenstand* is constituted of a threefold entanglement of the action on itself: goal-oriented action, resistance to the action, and reflection upon action (Valsiner, 2018b).
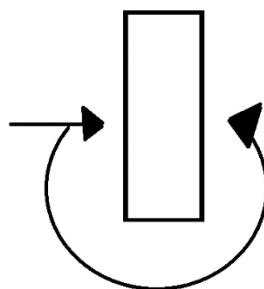

Figure 3. The basic structure of *Gegenstand*: unity of oppositional forces across border

This model prevents from a too static and fixed phenomenological notion of "*intentionality*" of the psyche (that is, the thought always has a content that instantiates it). In order to its working, the psyche constantly requires opposition, tension, resistance. The triadic structures of the *Gegenstands* of the human psyche are inherently dynamic (Valsiner, 2014a):

> This creates a gap — projected into the immediate future — which is filled in by imagination of *as-if* kind ("what will happen when I now enter setting X?", Zittoun & Cerchia, 2013, p. 308). This anticipatory set-up of a border zone

is an *as-if* expansion of the meaning from the *as-is* state of the present. Imagination is the process through which a distinction is set up for creating a new system in which the present is feeding into the future ("X" will *become* "non-X"). Hence, it is a universal mechanism that at any time moment guarantees the movement towards the future. It is constructive by setting up a border that attracts the movement towards it by the actor. It becomes the border zone to pass through, and a meaningful horizon that is constantly moved ahead once the future becomes past. Both the social texture of the border zone and its personal specification are semiotic processes (Valsiner, 2018, pp. 511-512).
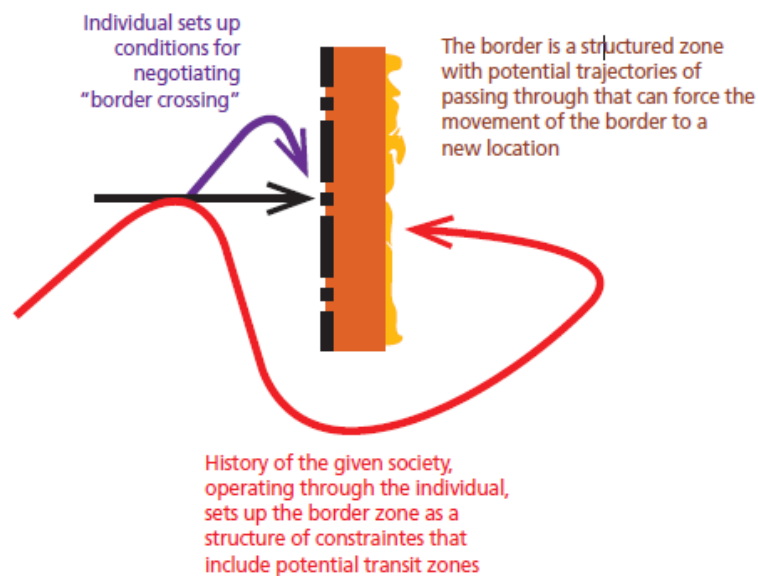

Figure 4. Triple Gegenstand (elaboration from Valsiner, 2018)

In human experience, semiotic mediation by means of borders (as suppliers of resistance but also providers of consistency to experience) transcends the level of the here-and-now and allows us to project ourselves into the future and reconsider/re-elaborate past experiences. This perspective is relational and temporal, it states that there is no identity of objects, people, states of the world, but that they are instantiated and made available and pertinent by the sensemaking. A sign therefore is not a mental object that indicates or represents something already constituted and given, but it is a relational device that relates different

systems (subjects, objects, world) under some situated, local and contingent relevance.

Starting from the above considerations, we assume that *bordering is a pure act of semiosis*. Indeed a border functions in many respects properly as a sign. In Peirce's well-known definition, sign is defined as something that stands for or signifies something else in function of a third entity or, more precisely, something relating, in some respect or capacity, to something else for someone (Peirce, 1935).

If we expand the classic definition of sign, dating back to the Stoic formulation (Eco, 1975; Favareau, 2009) as '*aliquid stat pro aliquo*' (namely, something that stands in place of another), we come to highlight a series of implications that underpin the processual and relational nature of signs. A sign allows operations of:

(a) *Substitution*, because the representamen by definition stands for its object;

(b) *Distinction*, because by logic the representamen cannot be the object it represents;

(c) *Unification*, because the semiotic production of the sign brings into the same whole elements that were not necessarily subparts of the triad before; and

(d) *Temporality* because semiosis takes place into irreversible time: something always turns into something else, which turns into something else, and so on (Marsico & Tateo, 2017; Tateo, 2018). Signs mediate past and future on the border of a transient present system of relation.

We see that also *bordering* process is able to implement these semiotic functions:

(a) *Substitution*. A border by definition bounds its object; therefore, an object can be represented through its borders;

(b) *Distinction*. A border lies between two different entities;

(c) *Unification*. The emergence of a border creates a triadic higher level system between elements that were not subparts of the triad before; and

(d) *Temporality*. Such a mutual relationship is where novelty can emerge. Alongside borders (in terms of liminal space – De Luca Picione & Valsiner, 2017; Lotman, 2005; Valsiner, 2014a; Stenner, 2008), semiotic catalytic processes trigger the emergence/development/transformation of further phenomena.

We can therefore understand the border as a conceptual and pragmatic extension of the sign. The border is a semiotic device that articulates the subject / otherness / world relationship (Simão, 2003; De Luca Picione, 2020b). On the one hand, borders work by exerting a limit (reduction of possibilities through an action of resistance and through the configuration of a structure), and on the other, borders work by offering the very conditions for its over-passing (that is, by creating the conditions for the exercise of thought, freedom, decision-making, creativity, imagination).

Border as operator of momentary ontology

The border creates a series of minimum conditions of experience based on the *separation*, *localization* and *representability* of things (Tagliagambe, 2011). Consider, for example, how Gestalt Theory attributed a core

value to contours and edges in the act of perception.

According to Gestalt theory, the *FIGURE-BACKGROUND* relationship is realized as the simplest and most fundamental organizational tendency of perception. In every perceived totality, we always distinguish the part that stands out in foreground (the figure that has a clear edge) from the one that remains on the background (the shapeless, the undifferentiated, the unlimited).

The principles of perception in the figure - background relationship are:

1. Figure has a smaller size than the background area.
2. Presence of edges around the part considered figure.
3. Shape of the margins: if they are convex, they are considered as figure, if instead they are concave as backgrounds.

4. The most intense and dense coloring.
5. The figure is the one in motion, with respect to the background which appears to be stationary.
6. Familiarity with the object represented (effect of experience and memory).
7. Spatial orientation.
8. Symmetrical areas.

According to the principles of closure and a-modal completion, the spaces interrupted by empty spaces are normally perceived as belonging to complete objects. That is why see a circle in the image even if the figure is not complete. Always for the same reason we see a triangle even if it is not properly drawn (Figure 4)
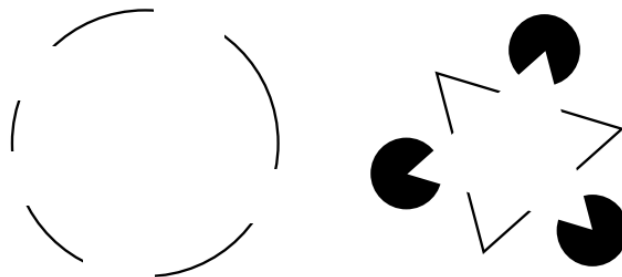

Figure 5. Processes of a-modal completion (images inspired to Kanizsa, 1955)

The *figure/background* relationship and the *principles of closure* and *a-modal completion* are principles of perceptual organization actually based on the constructive function of borders.

It is necessary to consider borders not as a fact (as pre-existing and already given entities), but as processes that act over time by

creating temporary and transitory configurations designed to allow us the experience, its sharing and its transformation.

In this work, we define the *border as an operator of momentary ontology*. A border functions - at multiple levels of interaction - in the definition of a field within which signs momentarily take on a value ontological (i.e.,

of existence and intentionality). This constitutive operation therefore allows a living system (from cellular and bacterial forms to ecosystems, from the single individual to group, social and institutional supranational formations) to experience the world in subjective terms and within it to think / act-interact / perceive / feel / develop relationships.

In this sense, in order for a temporary ontology to take place, the border must ensure a *double morphogenetic function* necessary for the experience of a living system:

a) The border cuts out the space-time edges of a potential shareable field of interactions within which the subject becomes able to intervene in relation to others (*delimitation of a horizon of meaning*). It is a function that acts in the background, generating a system of relevance and pertinence (Salvatore et al, 2022; Salvatore et al, 2021) and acting as a *negative action* (i.e., it reduces the number of possibilities of existence).

b) The border cuts out within the same field a series of parts, which take on a temporary value of unity / identity and interact with each other. In this case, the border acts in *positive terms*, that is, it makes possible the phenomenal existence of specific occurrences.

These two assumptions have several relevant implications:

1) The border is never simply a given and stable entity. Anything that acts in terms of border - a path, a line, a fence, a wall, a trench, a river, a mountain range, etc. - remains so as long as their

function is intersubjectively shared (such sharing can take place through learning, internalization, but also through implicit agreement or forced imposition). Therefore, a border is always a process that develops and transforms over time. That is, border is a *dynamic tensive area*: even when it assumes a stable form for a certain period, it is indeed the result of a series of opposing tensions that push towards different possible trajectories of development (De Luca Picione, 2021c). The stability of a border is therefore the *temporary ontological form* that a system of relations assumes over a certain period of time. The border is the emerging epiphenomenon of a series of multiple tensions. The border therefore also acts as a *threshold*, that is, as a sensitive receptor to solicitations: when certain values of intensity / conflict / tension / imbalance are exceeded, the border becomes an activator and catalyst of transformations[1]. Actually, the border acts simultaneously and complementarily as a semiotic device in search of balance between feedback processes (aimed at reducing perturbations, and maintaining the homeostasis and identity of the systems) and feedforward processes (aimed at amplifying the stresses and perturbations in order to amplify imbalances and push towards transformation - Maruyama, 1963, 1978)[2].

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[1] About the explosive and transformative processes alongside borders, see: Thom's theory of catastrophes (Thom, 1972); the elaboration of catalysis processes (Cambell & Valsiner, 2014; De Luca Picione & Freda, 2014, 2016); the idea of borders as explosive areas characterized by rapid and sudden changes unlike gradual changes in the identitarian core, is a relevant contribution of Lotman's semiosphere (2005).

[2] During an inspiring international workshop at University of Salerno (October 13th, 2022) to discuss the draft of this paper, the research group has contributed to develop the idea of semiotic explosion along the border as the contingent event of rupture of borders and the triggering of an occurring condition of a pluri-potentiality. Furthermore, the break cannot be total, inasmuch some lines of continuity are needed for the development of

2) The idea of ontology to which we are referring is not aimed at finding ultimate and irreducible forms of identity; rather, we are referring to an idea of relational, processual and ecosystem ontology, that is, it is only starting from the systems of relationship and development that certain processes take on a phenomenal, local and situated form.

3) Furthermore, this process contributes to specify the single parts (dividing, differentiating, asymmetrizing, and hierarchizing). In this way, the functioning of the bordering processes ensures that there is a founding system of relations between all the parts that can act:

a) *at the level of synchrony*. The whole is greater than the simple sum of the parts and every transformation of the system reverberates in the present time on each of its parts, as a hologram of the whole);

b) *at the level of diachrony*. Each individual part - as characterized by its partial identity - is capable of developing, differentiating and interacting with relative autonomy and independence and giving rise to diachronic transformations over time that then they will come to relate / interface with the whole system).

Each semiotic system (see the *semiosphere* - Lotman, 2005; Kull, 2015) always presents a complex interaction between the *molar level as a whole*, and the *molecular level of the structural irregularity of its parts*.

These observations lead us to affirm the *paradoxical nature of bordering semiosis*. Through this kind of semiosis, people are able to perform two - only apparently antinomic but actually complementary - operations at the same time:

a) Moving away from the *here-and-now* of experience (*distancing function* through semiotic mediation).

b) and, at the same time, *living the present time by "forgetting"* that the signs are used to think, act and connect (*presentation function*) (Valsiner, 2014a).

The ambivalent and paradoxical nature of bordering semiosis has strong implications[3]. In fact, a process of oscillation between the two simultaneous and complimentary dimensions of relationality and objectification is always in progress. Such a recursive process oscillates between phases of stability and phases of transformation. During the phase of stability of subject/other/environment relationship, the sign acquires the value of a stable thing, so it is perceived and experienced in terms of an entity endowed by sense of reality. The systems of semiotic relations take a back seat (i.e., on the background) and each sign appears as independent and absolute. The contextual framework of relationships works in

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new structures. We mean that there are always wider frames (bounded by more general and abstracted borders) that work in terms of scaffolding to contain the entropy of pluri-potentiality and to activate catalytic process of reduction and instantiation of fewer trajectories.

[3] We find an interesting affinity with Jacques Lacan's notion of *semblant* (Lacan, 2006). By these term, he

intends to highlight the strict relation between the truth and the fiction. Analogously, the border works as an intermediary between the *appearance* and the *essence*, without ever being either of the two, but always and only paradoxically both.

terms of background, stability, maintenance, and continuity. Note that many psychological functions work exactly based on habits, routines, repetitive organizations, and automatic patterns. It means that reality value is not questioned from time to time while something is being done. Only when turning-point events occur (i.e. events of bifurcation of trajectories of development) new emergencies can appear (in the double meaning of *urgency* and *new creation*).

Bounded polyvalent affectivity of borders

The recognition of the prominence of affect in every experience is a fundamental point on the agenda for the development of psychology.

It is important to note that affectivity does not simply imply a state of individual bodily activation. Moreover, at the same time it is not just an intrapsychic modification. Affectivating (Cornejo, Marsico & Valsiner, 2018) and its processualism constitute the semiotic matrix from which a scenario of meaning endowed with value is configured, within which it is possible to instantiate the experience in cognitive, relational and agentive terms. Affectivating confers consistency and value to experience. It cuts out a frame from a potential and indistinct background and generates a first pre-reflective person/environment configuration endowed with intentionality and directionality (Cornejo, Marsico & Valsiner, 2018; Salvatore et al. 2022; Valsiner, 2021, Tateo, 2018). William James in the chapter '*Perception of realty*' in the volume '*Principles of Psychology*' (James, 1890) retains that the *vividness, pungency and emotional interest are at basis of the constitution of realty*.

Affectivating is the basis of every experience and it initiates any sensemaking process. Affective distinctions trigger conceptual distinctions and affect evaluation. By establishing a distinction between parts of the whole experience we create alternatives ("x" is different from "y"). Once a whole is divided in parts, their value differs ("x" must be better than "y") to allow decision-making (Tateo, 2016).

The affective semiosis through the binomial corporeity/relationality works by realizing the *presentification* of the world, rather than its *representation*. In this sense, the borders-assigns are not conceptual mediators and separated objects from the level of experience, but are devices that instantiate the subject's experience as already charged with value, meaning and direction.

The borders are strictly linked to affectivating. Bordering is an act of sensemaking that generates a *differential* (an asymmetry of magnitude in the value of the two sides) in many human affective experiences: "*othering*" (us and them); *nostalgia* (for the other side); *secrecy* (what is visible and invisible); *envy* (toward the fruit in the neighbor's garden); *fear* (towards the unknown, the stranger, the uncanny); *curiosity* (for the novelty); *need for protection* (when we feel threatened); *courage* (in order to cross the border against prohibitions, suggestions, common sense); *despair* (when you feel abandoned and helpless); and so on in the infinite variety of human experience.

As the border creates an asymmetry between what is inside and what is outside ("X" is different from "non-X"), and different affective values are produced all at once ("X" is more valued than "non-X") (Tateo, 2016), enabling meaning-making (then I choose "X" because is better than "non-X"). The border is

thus an intersubjective and affectivating developmental *locus*[4] that accounts for processes of continuity and discontinuity, conflict and negotiation, innovation, and reproduction in living open systems (Marsico, 2016). It is a tensive place of both conflict and pacification, of meeting and potential clash, of discrimination and desire, of violence and dialogue.

The affective valence of a border has always a modal value, namely it produces meanings of *necessity* (prohibition, forbidding, restriction, obligation, duty, etc.); *possibility* (permission, opportunity, choice, etc.); *will* (volition, desire, lust, craving, etc.); and *contingency* (accidentality, contingency, unpredictability, uncertainty, etc.) (De Luca Picione, 2021a; De Luca Picione, Martino & Freda, 2018; De Luca Picione & Lozzi, 2021). It marks and puts in relation what is possible, impossible, necessary - to know, to say, or to do - with what is unknowable, unspeakable, or unworkable. It defines what is crossable and what is not even approachable. It divides order on the one side from chaos on the other side. Yet, it also show to people the possibility of crossing. In other words, by looking at the border we cast the light on the fact that human experience is not characterized by mutually exclusive opposites (I feel "X" *therefore* I don't feel "Y"), rather by *Gestalten* in which the whole emerges from the connection between its mutually feeding sub-parts (I feel "X" *and* I don't feel "Y") (Tateo, 2016)

Borders as affective vectors

Borders exist as long as they are meaningful. In other words, borders are salient and activated to the extent that a person intentionality is directed towards them. For instance, a closed door stays as part of the wall unless one wants to cross into the other room. Human beings use signs to regulate the salience of borders and thus catalyze their activation. If one puts a particular sign on the door (e.g., "Open"; "Staff only", "V.I.P.", or "Emergency exit") the value and permeability of crossing into the other room changes. Many common marketing strategies are based on the fact that limiting the access to something makes it meaningful.

Such a meaningfulness is not a mere individual meaning attribution to things. It is rather a strong and intense affectivating of social relations by the border. Indeed, borders are the transient place of passage between externalization and internalization of social relationships (Lawrence and Valsiner, 2003; Valsiner, 2014). Borders create the system in which subjectivity and otherness can emerge as mutual relating parts of a whole. In *The History of the Development of Higher Mental Functions,* Vygotsky (1997) presented the general genetic law of development, according to which the social relations enable and support individual development: higher psychological functions emerge from internalized social relations. Such view is profoundly in line with the psychoanalytical perspective (De Luca Picione & Freda, 2022).

Tateo and Marsico have proposed a *general genetic law of bordering development* (2021): First, borders are created as signs in interpsychic relations. Later, the borders/signs are internalized by the child and begin to regulate meaning-making. They operate intrapsy-

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[4] «Locus» is a Latin word for "commonplace argument". It does not refer to a spatial concept, rather to a shared set of meanings that facilitate communication.

In this sense, border as "locus" is a semiotic operator that mediates both intrasubjectively and intersubjectively the meaning-making process.

chically - leading to different possible interpretants depending on the individual purpose – and interpsychically - through externalized signs that regulate social relationships. One can conceive ontogenetic development as continuous production, maintenance, and demolition of border/signs that operate in both the inter- and intra-psychological domains.

In the inter-psychical world, borders organize the environment and the space–time in which humans live. In the intrapsychic experience, borders regulate the feelings, sense of intimacy, and the definition/modification/negotiation of identities. The very moment a border is defined, it mediates the person's relationship with the environment, creates a distinction in the field and in the flow of events, and shapes conduct. The border is not localizable (it does not exist *an sich* and *fur sich*), but creates psychic conditions for localizing and anchoring experience

It is worth noting that also the disruption of borders is intensely affectivating: the experience of breaking, of passing a threshold, of crossing a perturbation, generates changes in the emotional relationship with the world (Weizsäcker, 1956; De Luca Picione & Freda, 2016a, 2016b, 2016c; Stenner, 2018). During a crisis, a situation of liminality occurs, where the previous balances and organizations no longer work and the new ones are not yet available (Simão, 2007; Stenner, 2018; De Luca Picione, 2017; De Luca Picione & Valsiner, 2017; Scalabrini et al, 2022; Valsiner, 2018a).

Such a dynamics is a transition phase in which development, novelty, creativity are activated, and new semiotic linkages become possible.

It is important to underline that in the face of the bifurcation of a crisis, a turning point, a disturbance, there is not only a push for change and innovation, but also a strong push towards the conservation and stiffening of positions reached in the past. In other words, it is a question of a very conservative, protective and regressive tension, as psychoanalysis highlighted since its inception (Freud, 1911; Bion, 1962; De Luca Picione & Lozzi, 2021).

Generalized semiotic functions of borders model

Through the identification of a general series of semiotic operations carried out by the bordering process, we now propose the synthesis of our theoretical model that we called *Generalized semiotic functions of borders*. Such a model is inherently dynamic and processual. Its underlying principle is that bordering processes move simultaneously on a series of *tension continuums*, each of which is engaged in a specific operation. We have highlighted eight of these continuums. They are dynamic dimensions characterized by thrusts with opposite valence that co-define and feed into each other.

1) *Distinction:* continuity *versus* discontinuity ;
2) *Differentiation:* identity *versus* otherness ;
3) *Separation:* absolute detachment *versus* fusivity;
4) *Containment:* framework of meaning and pertinentization *versus* fragmentation;
5) *Protection:* total closure *versus* total permeability;
6) *Mediation:* immediacy *versus* translation;
7) *Transformation:* conservation *versus* innovation;
8) *Regulation:* rigidity *versus* flexibility.

1) A border is a semiotic operator that allows you to make a *distinction*. Within a homogeneous and undifferentiated field, the border makes a difference possible. The border therefore produces singularities. This point highlights the semiotic characteristic of the border, that is, it is always a sign, as it is capable of creating a difference (Bateson, 1979; De Luca Picione, 2021a) which can be spatial (inside / outside) and temporal (past / future) (De Luca Picione & Valsiner, 2017). Where the border is instantiated, then conditions of singularity occur which produce qualitative-quantitative differences in the space-time determinations of a homogenous field.

2) The border is an operator of *differentiation*. It helps to build the sense of identity starting from the difference with otherness. A system does not have a clear and defined identity, as if it had already-given contours. Identity is built as a gradual process of differentiation that implies the recognition of otherness. Bordering is a process that in a complementary way involves identifying similarities and differences of oneself and the other over time. This is a pure semiotic process as it is a constant reformulation of the diachronic and synchronic balance between the continuity of the self with the discontinuity of the other from the self.

3) The border works as a semiotic operator of *separation*, exerting a tension that moves along a continuum of separation vs bond. Separation acts ambivalently because it serves to connect, to create bond. In a homogeneous and undifferentiated field, it is possible to connect something only through a preliminary separation operation. For something to develop and connect to its environment through processes of superior sophistication,

it must be able to separate and define itself. This function acts both at inter-systemic level and at intra-systemic level (between the different parts that make it up). The separation achieved through borders is at the service of differentiation, development, cooperation, interaction and integration. As shown by Werner's orthogenetic principle, a system develops by differentiation and integration (Werner, 1957). It is a holistic dynamic that implies the relationship between the part and the whole. We also find this idea in Lewin's topological model (1936) according to which the construction of internal borders separate but connect different regions of the person's field of experience. In Lotman's model of the semiosphere (2005), the separation between the semiotic and extrasemiotic systems, and between the different parts of the same system (so-called *structural irregularity*) is possible through complementary processes of symmetry and asymmetry. The separation is not absolute but it is dynamic and temporal.

4) The *function of containment* acted by borders allows for the creation of a frame within which it is possible to give sense and value to experience. This function makes it clear that borders are semiotic operators that generate meaning. The border defines an interaction field within which the subjects share a series of semiotic coordinates (signs, meanings, symbols, values, etc.). The containing function of the border is that of creating a frame within which the subject lives "*as if*", that is, the world is perceived inscribed within a horizon endowed with meaning. The "frame" works as a principle of organization of experience, it is a way of cutting out / signifying reality to interpret the meaning of events.

At the other end of this continuum, there is the absolute dispersion and fragmentation, the loss of meaning and the tendency to indistinction.

The border is always at stake in an intersubjective process. This is one of the most relevant implications of the *'general genetic law of bordering development'* (Tateo & Marsico, 2021). Here cultural psychology and psychoanalysis find a strong affinity: it is the role of otherness that conveys the passage of an acquisition from an inter-psychic level to an intra-psychic level. In fact, in support of development processes, the caregiving function is also to offer an adequate external intersubjective scaffolding (with a protective, normative, imitative, mediating and facilitating function). This intersubjective scaffolding containment allows the gradual construction of one's own borders and offers temporary support in order to oriented and finalized activity: focusing attentional and agentive resources and metabolizing too intense emotions linked to the frustration of possible failure, the anger against other interacting actors and the fear of possible dangers. The subject therefore not only learns to play the role within a specific frame but also learns at a higher and more abstract level to recreate frames of meaning that make it possible to carry out a task, an action and the maintenance / development of relationships (De Luca Picione, 2021c; Kull, 2012).

5) The border always acts also as a function of *protection*, realizing a filter function from environmental / social perturbations (but also from inner disturbances, unrealizable and censored desires, invasive thoughts and unpleasant representations, etc.). The two poles of this specific dynamic tension are the *total closure* (like an impenetrable shield) or the *excessive porosity* of the filter until its disintegration. In both cases, the final effect is the same: the psychic and physical death of the living system. The border serves to protect from the excess of stimuli, from the burglary of excessive perturbations, but when the protection is total then it is impossible to exchange energy, matter and information with the environment. An overly porous border (up to its cancellation) deprives a system (biological, psychic, social) of the minimum possible conditions to ensure its functioning against the multiplicity of omnipresent external stimuli. At the same time, an efficacious border also protects against the outflow, that is, from a movement of contents outward (both of the inability to retain nutrients and the excessive projection of unprocessed psychic elements).

6) Borders are semiotic agents of *mediation*. Here the function of borders is called into question to overcome the *impasse of immediacy*. That is, the border acts as a structure of mediation against the immediacy of action and reactive forms. The reference is to the semiotic mediation function operated by the signs: the signs mediate the relationship with experience, articulating and complexifying it. Semiotic mediation works in the face of the transient temporal foundation of experience. It offers the conditions for the possibility of thinking, feeling, acting, and constructing systems of relationships, by projecting the system in an open future.

Through this process of mediation of experience, every psychic processes of greater sophistication are possible: the use of language, perception, memory, thought, imagination, creativity, narration, orientation to the future and various possible scenarios, etc. (Toomela, 2016; Tateo, 2018; Valsiner, 2021; Zittoun et al., 2003; De Luca Picione, 2020b).

7) Borders are operators of *transformation* precisely because of their function of connection, exchange, information, filtering and shock absorption (internal and external perturbations). Borders are liminal zones of transformations, which make it possible to temporarily suspend too rigid distinctions and classifications, allowing fusion, merging, mixing and chaos (Turner et al, 1983; De Luca Picione & Valsiner, 2017; Barros et al. 2020; Tateo & Marsico, 2021). Borders do not function as repositories of stable / obsolete / fixed information, but always carry out processes of construction of new cultural forms.

Borders as activators of transformations are liminal places between semiotic processes of pleromatization (non-linearity, abundance, semiotic richness, overall relationship between the figure and the background) and of schematization (linearity, order, finiteness, punctual definition, reduction of complexity in the direction of specific objectives) (Valsiner, 2006, 2008; Tateo & Marsico, forthcoming, 2022).

8) Finally, operation of *regulation* makes possible to orient a system and its actions towards the future. Although borders offer a quasi-ontological support to experience, they do so in the form of resistance (*Gegenstand*). The processes of regulation take place along the borders, or rather in the border area, which is a dynamically *open transition space*. This border area can be thought of as the present moment ("*now*") ephemerally in the making between a "*no more*" and "*not yet*"; spatially it can be thought of as "*in-between*" through the interpenetration of categories of *inside/outside*, *contact-proximity/separation-distance*; from the point of view of identity it can be thought of as the *simultaneous presence of similarities and differences between oneself and others*. This area is liminal and transitional, and it is emotionally characterized by ignorance of the future and the fundamental uncertainty and unpredictability of experience. Here you find an intense *proleptically oriented modal tension*, that is, aimed at the realization of objectives and purposes. In fact, along the borders are expressed all those modal semiotic tensions expressed in terms of permission, obligation, prohibition, prohibition, authorization that make the borders the place of overrun or immobility, the place of closure or access, the area of block or turning point (De Luca Picione, 2021c). The border works as an ongoing semiotic regulation between states of necessity, possibility, impossibility and contingency. If they are too rigid, then they are placed on the side of the necessity or the impossibility of transit, of overcoming (in terms of prohibition, prohibition, and obligation). If there is a more flexible regulation, then they allow the expression of multiple possibilities of crossing, connection, translation, a certain degree of freedom and will of the subject, as well as the acceptance of local and contextual contingency.

Conclusions

A static representation of the border - understood as an entity that marks the separation and defines identity - is not sufficient to understand the complexity of living systems in general and even more so for human ones.

Although in recent decades we have seen an increasing number of studies on borders, theoretical models that are solid and general enough to cover the vast repertoire of border functions and processes still do not seem to emerge.

Our model tries to fill this gap. We have highlighted that the border has a double value:

on the one hand it constitutes temporary ontologies (i.e. it contextually defines things, objects, spaces, parts, identities) that provide consistency to the experience, on the other hand they are dynamic systems of relations in constant transformation. This double nature represents a sort of complementarity principle of the border: it is both a 'thing' and a 'relationship'. Depending on the perspective taken, the border will show itself in a different way: on one side it objectifies and reifies experience, on the other side it represents the main dynamics of every possible development of a system.

By combining psychoanalysis, cultural psychology and semiotics, we presented and discussed the redundancy of intra-intersubjective development processes, the dynamics of affectivating experience, the trifold dynamics of intentionality/resistance/reflection (so-called *triple gegenstand*), and the performative value of the semiotic mediation of borders.

We come to propose a first theoretical synthesis of a *Generalized Semiotic Functions of Borders'* model. It identifies eight semiotic functions (distinction, differentiation, separation, containment, protection, mediation, transformation, and regulation) which of them act as tensions organized by pushing in opposite directions.

We believe that this model represents a first promising conceptual effort that may trigger further investigations. Do those functions have a sequential character? Do they have a precise order of succession in their development? Can they all be realized simultaneously or only some of them acquire a momentary relevance depending on the contextual frames? Those are only few of the many future theoretical directions of the multidisciplinary scientific research agenda on bordering.

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